Public Service Electric and Gas Company Former Front Street Gas Works Newark, New Jersey

Remedial Investigation Report

March 1999

Prepared For:

Public Service Electric and Gas Company 80 Park Plaza Newark, NJ 07101

Prepared By:

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Project No. 263709

BEA000001

Exhibit "A"

CERTIFICATION

Pursuant to N.J.A.C. 7:26C-1.2(b)

Regarding the Remedial Investigation Report dated February 1999 for the Former Front Street Gas Works Site located in Newark, New Jersey:

"I certify, under penalty of law, that the information provided in this document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement that I do not believe to be true. I am also aware that, if I knowingly direct or authorize the violation of any statue, I am personally liable for the penalties."

KILLAM ASSOCIATES

Albert J. Mellini, P.E. Type/Print Name

Executive Vice President Title

Signature

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3-21-99

Date

Sworn to and subscribed before me on this <u>29</u> day of <u>Manual</u> 1499

Signature of Notary Public (Stamp and Seal/Commission File) NOTARY PUBLIC OF NEW JERSEY My Commission Expires Oct. 8, 2001

Exhibit "B"

CERTIFICATION

Pursuant to N.J.A.C. 7:26C-1.2

Based on the Certification of Albert J. Mellini dated 32999 (attached hereto as Exhibit "A") and information obtained in connection with my status as Project Manager for the preparation of the Remedial Investigation Report (dated February 1999) for PSE&G's Former Front Street Gas Works site located in Newark, New Jersey:

"I certify, under penalty of law, that the information provided in the document is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statue, I am personally liable for the penalties."

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

Warren Straubmuller	Project Manager		
Type/Print Name	Title		
Signature	<u>331</u> Date	99	
Sworn to and subscribed before me on this	31°t	day of_	march

Marilyn D. Romano

Notary Public - New Jersey (Stamp and Seal/Commission Expiration Date)

MARILYN G. ROMANO NOTARY PUBLIC OF NEW JERSEY Commission Expires 10/11/2001 K:\ENG\2637GEN\CERTS\CERTS.WP

Exhibit "C"

CERTIFICATION

Pursuant to N.J.A.C. 7:26C-1.2(c)

Based on the Certification of Albert J. Mellini dated 37999 (attached hereto as Exhibit "A") and the Certification of Warren Straubmuller dated 33199 (attached hereto as Exhibit "B") regarding the Remedial Investigation Report (dated February 1999) for PSE&G's Former Front Street Gas Works site located in Newark, New Jersey:

"I certify, under penalty of law, that I have personally examined and am familiar with the document, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information, and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statue, I am personally liable for the penalties."

PUBLIC SERVICE ELECTRIC AND GAS COMPANY

Stanley LaBruna **Type/Print** Name

Signature

Vice President -Environment, Health & Safety Title

Date

Sworn to and subscribed before me on this <u>31st</u> day of <u>March 1999</u>

Marilyn mano

Notary Public - New Jersey (Stamp and Seal/Commission Expiration Date)

MARILYN G. ROMANO NOTARY PUBLIC OF NEW JERSEY Commission Expires 10/11/2001

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#### **1.0 INTRODUCTION**

Public Service Electric & Gas Company (PSE&G) retained Thermo TerraTech (TerraTech) to perform a Remedial Investigation (RI) at a former manufactured gas plant (MGP) known as the Former Front Street Gas Works (Site). The Site is located on McCarter Highway in the City of Newark, New Jersey (Figure 1). The RI at the Site was performed as required by the Memorandum of Agreement (MOA) with the New Jersey Department of Environmental Protection (NJDEP) dated August 29, 1995. The RI was undertaken because of contamination found during the Site Screening Sampling Plan performed by Langan Engineering and Environmental Services, Inc. (Langan) in September 1997 as well as investigations performed by BCM Engineers (BCM), the United States Army Corps of Engineers (USACOE) and the New Jersey Department of Transportation (NJDOT).

The purpose of conducting the RI was to define the environmental impact on the subsurface from previous activities at the Site. In order to assess the environmental impacts, data gaps were identified and a scope of work was prepared to address those data gaps. The information was presented in the Remedial Investigation Workplan (RIWP) which was prepared by Woodward Clyde Consultants. The RIWP proposed:

- delineation of soil contamination;
- closure of the eight underground storage tanks (USTs) and investigation of the surrounding soils;
- investigation of the potential off-site transport of organic vapors in the subsurface;
- investigation of groundwater quality and aquifer characteristics.

The RIWP was approved by the NJDEP on March 11, 1998.

The RI field work was conducted between June and November 1998. All work was conducted in accordance with the approved RIWP, modifications to the RIWP memorialized in PSE&G's May

11, 1998 letter, the Technical Requirements for Site Remediation (NJAC 7:26E) and the NJDEP Field Sampling Procedures Manual (1992).

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This Remedial Investigation Report (RIR) describes the activities and discusses the findings of the work conducted.

#### 2.0 BACKGROUND

#### 2.1 Site Location

The Site is located in the northeast part of New Jersey in the City of Newark in Essex County. The Site is comprised of two parcels of property separated by McCarter Highway (formerly Front Street) (Figure 2). Each of these parcels is described below.

- Parcel 1: Parcel 1 (Block 3, Lot 13 and Block 4, Lot 1 on the tax map of the City of Newark) encompasses an area of approximately 2.7 acres and is bordered by a restaurant to the north, the Passaic River to the east, a public parking facility to the south, and McCarter Highway (Route 21) to the west.
- Parcel 2: Parcel 2 (Block 14, Lot 28 on the tax map of the City of Newark) encompasses an area of approximately 0.23 acres and is bordered by Lombardy Street to the north, McCarter Highway to the east and public parking facilities to the south and west.

#### 2.2 Site Description

Parcel 1 is divided into two tiers separated by a driveway and a terrace. The upper tier (higher elevation) is located on the western portion, adjacent to McCarter Highway, while the lower tier is adjacent to the Passaic River. There are no existing above grade structures associated with the former MGP operations/support facilities. Below grade, there are active electrical lines along the western portion of Parcel 1 perpendicular to McCarter Highway and an active natural gas main running parallel to the property line between Parcel 1 and McCarter Highway. The utility locations are depicted on Figure 2.

Parcel 1 contains concrete and brick foundations of former buildings and gravel-covered and paved parking areas with a block retaining wall between the two tiers. Parcel 1 is enclosed by

fencing and is not accessible to the public. Former manufacturing facilities were limited to Parcel 1.

Parcel 2 contains an unpaved parking area. Parcel 2 is enclosed by a fence and is not accessible to the public. Parcel 2 contained only support facilities (e.g. offices, stables, etc.).

#### 2.3 Operating History

The operating history described below for the Site is based on maps and other information available in PSE&G files, previous reports for the Site (i.e. Preliminary Evaluation and Prioritization of 15 Manufactured Gas Plant Sites (BCM Engineers, February 1989)(which included reviews of Sanborn Fire Insurance Maps)), and aerial photographs. Based on the review of these documents, a chronological presentation of pertinent Site features and activities has been prepared and is presented below.

1868 Citizens Gas Light Company of Newark (Citizens) organized.

1869-1872 Parcel 1 (except for a small parcel along McCarter Highway) acquired by Citizens through a series of transactions. MGP operations may be presumed to have commenced sometime during this period.

1884 Remainder of Parcel 1 acquired by Citizens.

1891 Part of Parcel 2 acquired by Citizens.

1892 MGP equipment (including coal sheds, retort, iron tar tank, naphtha tank, and two iron gas holders) present on Parcel 1.

1895 Citizens merged with others to form Newark Gas Company.

Additional mergers occurred to form Newark Consolidated Gas Company.
 Newark Consolidated Gas Company leased its property, plant and franchises to the United Gas Improvement Company, which then leased these assets to the Essex and Hudson Gas Company.

- 1903 Remainder of Parcel 2 acquired. Wagon shed, stable, storeroom, meter repair shop, and carriage room located on Parcel 2. Site included in lease to Public Service Corporation of New Jersey.
- 1908 A third gas holder, an ammonia tank, and two tar tanks present on Parcel 1 in addition to other MGP equipment previously noted. Engine room constructed over the location of the iron tar tank. Naphtha and gas tanks now identified as oil tanks.
- 1909 Public Service Corporation assigns lease to Public Service Gas Company.
- 1924 Public Service Gas Company merges with Public Service Electric Company to form PSE&G.
- 1926 Site used as an auxiliary production facility.
- 1930 Site operating as a "reserve plant." An additional gas holder (#4) is present near the north property line. Retort house converted to a meter shop. Coal shed no longer used for coal storage, coal is now stored in stockpile near the southern property line.
- c. 1937 MGP facilities withdrawn from service. Removal of MGP facilities initiated from the Site. Site continues to serve as a holder station. Purifying house converted to storage/garage.
- Holder #1 and the three oil tanks adjacent to the purifying house removed.
  Holders No. 2 and 3 and building present.
- 1950s Holder station facilities removed from the Site.

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- c. 1960 Site used as a district operations headquarters for gas department service and street operations.
- 1973 Parcel 1: Storeroom and garage shown at locations of former purifying house and meter room. Parcel 1 also has vehicle parking areas. A "10-inch artesian well" is shown at the southern property line near the Passaic River. Five USTs (2-4,000 gallon gasoline, 2-550 gallon gasoline, and 1-550 gallon "white gas" tank) and two pump islands located on Parcel 1.

Parcel 2: Offices and parking lot located on Parcel 2.

| 1977         | Two additional USTs installed (1-6,000 gallon unleaded gasoline, and 1-2,000      |
|--------------|-----------------------------------------------------------------------------------|
|              | gallon unleaded gasoline).                                                        |
| 1978         | One additional UST installed (6,000 gallon unleaded gasoline).                    |
| 1980         | Retort house, generator house, and boiler house structures removed from the Site. |
| 1995         | District Headquarters relocated and MOA filed with NJDEP.                         |
| 1 <b>997</b> | Parcels 1 and 2 vacant with no above ground structures.                           |

According to available information, the Site utilized the coal gas process, water gas process and carbureted water gas process. The coal gas manufacturing process involved the thermal reduction of coal in retorts. Processes common to coal gas manufacturing included coal charging, thermal reduction of coal, gas generation, condensing, cooling, gas cleanup and storage.

The water gas manufacturing process involved passing steam over and through an incandescent bed of hot coke, coal or other carbonaceous material. The manufacturing equipment consisted of a generator, waste heat boiler, and a wash box. The generator contained the coke bed; the waste heat boiler was used to extract heat from the gas produced or from the products of combustion when heating the coke bed; and, the wash box was used to cleanup the gas of all condensables.

The carbureted water gas manufacturing process was the water gas process enriched with a thermally cracked hydrocarbon such as oil. The manufacturing equipment consisted of a generator, carburetor, superheater, waste heat boiler, and wash box. The generator contained the coke bed used for generating the water gas and providing heat to the carburetor and superheater. The carburetor was where the hydrocarbon was added, usually vaporizing and being thermally cracked on checker brick installed in the carburetor. The superheater, also filled with checker brick, was where the thermally cracked hydrocarbon was reformed into methane, ethane, and other gaseous hydrocarbons.

#### 2.4 Physical Setting

#### 2.4.1 Land Use Assessment

Parcel 1 lies within the Second Industrial District (I-2). The principle permitted uses within I-2 are residential, commercial, business or light industry. Parcel 2 lies within the Fourth Business District (B-4). The permitted uses within B-4 are residential, retail sales, office, or business use. These zoning classifications may be re-designated in the future as a result of redevelopment efforts in the area.

The State of New Jersey, the City of Newark, and certain private developers are currently investigating a redevelopment of the area in and around the Site as part of a redevelopment of the Passaic River waterfront. The waterfront redevelopment project (known as the Joseph G. Minish Passaic River Waterfront Park and Historic Area) includes plans prepared by the USACOE New York District for the installation of sheet piling and the construction of a new bulkhead along the riverbank on the east side of Parcel 1. NJDOT also has plans to widen McCarter Highway. The widening includes the acquisition of a 50-foot wide strip of land traversing the western border of Parcel 1.

#### 2.4.2 Topography and Site Drainage

Parcel 1 consists of two topographical tiers separated by steep slopes and retaining walls. The average elevation of the upper tier along McCarter Highway is 38 feet above mean sea level (MSL). The average elevation of the lower tier along the Passaic River is 10 feet above MSL. Because most of the Parcel is capped (foundations and pavement) surface water infiltration is suspected to be low. Surface water runoff from Parcel 1 drains into the Passaic River.

Parcel 2 is relatively flat with an average elevation of 40 feet above MSL. Surface water runoff from Parcel 2 flows into storm sewers along McCarter Highway. The storm sewer system in this

area of Newark is reportedly combined with the sanitary sewer system with discharge to the Passaic Valley Sewerage Commission (PVSC) treatment facility.

#### 2.4.3 Wetlands/Surface Waters

According to the National Wetlands Inventory (NWI), the Site is categorized as upland. The Passaic River is classified as "estuarine - open water/unknown bottom." There are no other inventoried wetlands or other surface water bodies within 1,000 feet of the Site.

The Passaic River flows from north to south with tidal flow in the area of the Site. Approximately 4.5 miles downstream of the Site, the Passaic River flows into Newark Bay. The Passaic River is classified as "SE3" in the area of the Site. "SE" is the general surface water classification applied to saline waters of estuaries. The following uses are designated for SE3 surface water bodies: secondary contact recreation; maintenance and migration of fish populations; migration of diadromous fish; maintenance of wildlife; and any other reasonable uses.

#### 2.4.4 Local Climate and Rainfall

The climate in Essex County is generally temperate. The average annual rainfall is approximately 44 inches. The mean annual temperature is 55 degrees Fahrenheit (°F) with a monthly mean low of 23 °F in January and a monthly mean high of 87 °F in July (Source: Office of the New Jersey State Climatologist, 1997).

#### 2.5 Geologic Setting

#### 2.5.1 Regional Geology

The Site is located in a geologically complex area. It is located in the Newark Basin physiographic province, a northwestward-dipping wedge of faulted and folded sedimentary rocks punctuated by flood basalts of late Triassic and early Jurassic age, intruded by diabase dikes, sills, and laccoliths. The rocks of the Brunswick Group constitute the stratigraphically highest geologic unit in the Newark Basin. Geologic maps (Nichols, 1968; Lyttle and Epstein, 1987) indicate that the region of the Site is underlain at depth by consolidated strata of the Passaic Formation, the oldest unit of the Brunswick Group in New Jersey. The formation lithology consists of grayish-red to reddish-brown, thinly- to thickly-bedded shale, siltstone, sandstone, and conglomerate with subordinate cycles of gray and greenish-gray thinly-bedded shale and siltstone (Olsen, 1980; Van Houten, 1988).

These deposits were buried below later Mesozoic and Cenozoic coastal and marine deposits which were subsequently eroded away. During times of lower sea level than present, the terrain was deeply incised by streams. Some of these former stream valleys are as much as 300 feet below present sea level. The valleys are characterized by fluvial deposits that were subsequently buried by sediments related to cyclical glaciation.

The glaciogenic deposits, mapped by Stanford et al. (1990, 1995), consist of till to the west and glacial lake deposits at and to the east of the Site. The glacial lake deposits consist of lake bottom silts and clays, lacustrine fan and deltaic deposits, and minor ice-contact stratified deposits. In the area in the immediate vicinity of the Site, the map of Stanford et al. (1995) shows "deltaic/lacustrine fan deposits (sand and gravel)." The glacio-lacustrine deltaic deposit is approximately 2 square miles in area, extending to both sides of the Passaic River. The river has cut completely through the deltaic deposit and the portion on the west side of the Passaic River is no longer physically connected with the portion to the east. Immediately east of the bisected delta is an area mapped as glacial lake bottom deposits. These are rather extensive and represent much of the area of the extinct glacial Lake Hackensack, which covered parts of Bergen, Essex, Hudson, and Union Counties. There is a buried valley immediately east southeast of the Site.

The buried valley in the bedrock is part of a trough that runs parallel to the strike of the bedrock and marks the location of a pre-glacial stream valley. Sands and gravels are preserved in this valley beneath the overlying till plain of the Wisconsinan Glaciation. These coarse sediments constitute a buried valley aquifer that extends from Bergen County to the vicinity of Cranford, in Union County. Locally, the trough it occupies has been called the Kenilworth-Newark Valley (Nemickas, 1974). Nichols (1968) describes the buried valley deposits in "northern Newark, where the valley runs parallel to the Passaic River," as containing several deposits of sand and gravel interbedded with clay and till. The sand and gravel deposits are described as ranging from 1 to 19 feet thick and being "encountered mostly at depths of less than 50 feet and depths of more than 220 feet below land surface."

Where the glacial deposits are eroded by the Passaic River, they are partly covered by estuarine deposits consisting mainly of silty clays.

#### 2.5.2 Site Geology

The bedrock beneath the Site, is a siltstone characterized by interbedded friable (highpermeability) and blocky (low-permeability) layers that strikes approximately 28 degrees east of north and dips toward the northwest at an angle of approximately 8 degrees. In the vicinity of the Site, the bedrock is approximately 10 to 30 feet below MSL. Figure 3 depicts the topography of the top of the bedrock on-site.

The overburden on the Site is consistent with what one would expect with glacial depositional processes. The interpretation is based on drilling logs provided in Appendix A. There are 12 to 20 feet of fill material below which are native deposits. The upper tier (deltaic depositional environment) is marked by deltaic deposits 20 feet thick. Although no sedimentary structures were identified in the split spoon samples, these deposits, being primarily clean, silty, or gravelly fine- to medium-grained sands, are interpreted to be delta forset beds. A basal deposit of silt (with trace-to-some clay), approximately 4 to 6 feet thick, is present beneath the coarser

forset beds and is interpreted as a pro-deltaic environment. Underlying this silt stratum are glacial till sediments composed of clay, silt, sand, and gravel, which directly overlie the bedrock.

The lower tier, representing fluvial and estuarine depositional environments, is characterized by a 4- to 8-foot thick gray slightly organic clay underlying fill material. This clay was probably deposited as the result of flocculation of clay minerals upon reaching the brackish estuarine environment of the lowermost Passaic River. Underlying this clay are occasional fluvial sand and gravel deposits ranging in thickness between 2 and 4 feet. Since the Passaic River has truncated the earlier deltaic deposits, the estuarine clays are deposited directly on till in the southeastern portion of the lower tier, adjacent to the river. Further to the west, the pre-existing deltaic deposits are not completely eroded, and the estuarine clays on-lap directly upon the pro-delta silts exposed by erosion of the overlying fine-to-medium sands. Lithologic cross sections have been included as Figures 4, 5, and 6 which graphically depict subsurface conditions.

#### 2.6 Hydrogeologic Setting

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Regional groundwater flow discharges into the Passaic River, the Second River, Newark Bay, the Elizabeth River, and the drainage system around Newark Airport (which is the approximate location of the former Bound River). There is downward leakage through glacial deposits and exposed bedrock.

There appear to be two distinct water-bearing zones in the overburden soils beneath Parcel 1. Shallow groundwater, referred to as the "A" Horizon, occurs above the pro-delta silt and the estuarine clay, which together form a semi-confining layer which extends across the Site and probably continues an indefinite distance off-site. This semi-confining layer continues underneath the Passaic River. The deeper water-bearing zone referred to as the "B" Horizon occurs beneath the confining layer. There does not appear to be a confining unit separating this unit from the underlying bedrock. Consequently, the "B" Horizon and the bedrock are considered a single aquifer unit. This conclusion is supported by the presence of free product in the bedrock.

Synoptic groundwater elevations were measured on September 16, 1998 as part of the groundwater sampling episode. These data, presented on Table 1, indicate a flow toward the Passaic River. From previous investigations, it is known that both the "A" and "B" Horizons are influenced by the tidal fluctuations of the Passaic River. To evaluate the response of the hydraulic gradient to tidal fluctuations, water levels in seven wells (MW-2, MW-2A, MW-3, MW-3A, MW-3BR, P-2, and P-2A as shown on Figure 2) and the river were continuously recorded between October 14 and 17, 1998 by automatic data loggers equipped with pressure transducers. As indicated on Figure A of Appendix B, the water levels in all of the monitored wells, except P-2, exhibit a clear response to tidal fluctuations. Additionally, MW-3A exhibits a response to another external factor, possibly off-site pumping (e.g. basement dewatering via sump pump), which causes the tidal fluctuation curve to be erratic, rather than smooth but does not affect the overall groundwater flow. Tidal monitoring illustrated that the strongest responses to tidal fluctuations were found in the wells adjacent to the river and at the semi-confined wells in the Upper Tier, as would be expected.

The data from monitoring wells P-2, P-2A, MW-2, and MW-3 (located at respective corners of a tetrahedron) were evaluated to understand the horizontal and vertical gradient and determine the tidal effects on magnitude and direction of hydraulic gradient. The water level elevations from these wells were evaluated to calculate an azimuth bearing (degrees clockwise from north) and an angle of plunge (degrees downward from horizontal) for each hour in the period of data collection. These data were then used as input in a stereonet program (RockWare®) to calculate descriptive statistics for the azimuth and the angle of plunge of the hydraulic gradient utilizing a Schmidt projection. As indicated on Figure B of Appendix B, the results of this evaluation demonstrate that the mean direction of the hydraulic gradient is 71.5° east of north, with a downward mean plunge of 81.8° from the horizontal. The spherical variance was only 0.0001, indicating that direction of the hydraulic gradient is little affected by the tidal fluctuation during

the period of the measurements. Therefore, mean flow at the Site is always toward the Passaic River and the downward component of the hydraulic gradient is predominant.

#### 2.7 Receptor Evaluation

A well search was conducted as part of the 1989 Preliminary Site Investigation. A second well search was completed as part of this RI to update the results from 1989. Fourteen industrial and domestic wells were located by the well search (Table 2). The nearest wells are located at the intersection of Lombardy and Broad Street in the Bell Atlantic and Mutual Life buildings. Figure 7 shows the well locations and the well records are attached as Appendix C. There were no public supply wells discovered in the search. Since groundwater flows east toward to the Passaic River, these wells are not receptors.

The Passaic River is an ecological receptor. An ecological evaluation of the river, including the area adjacent to, upstream, and downstream of the Site, is being conducted by others at the direction of, and with oversight from, the USEPA.

Subsurface utilities have been discounted as potential receptors because they are at significantly higher elevations then the encountered contamination.

#### 3.0 PREVIOUS INVESTIGATIONS

Five environmental investigations have been conducted on or adjacent to the Site. These include a 1995 study by the USACOE for a streambank restoration project; a 1996 study by the USACOE for the Joseph G. Minish Passaic River Waterfront Park and Historic Area; a 1996/97 study by the NJDOT for the widening of McCarter Highway; a supplemental USACOE study; and a 1997 Site Screening performed by Langan for PSE&G. Results from these studies are summarized below. Figure 2 depicts boring locations from these previous investigations.

#### 3.1 USACOE Studies (1995/1996)

The purpose of the 1995 study by the USACOE was to determine the existence, nature and extent of hazardous and toxic materials within a construction project area along the west side of the Passaic River. The construction project included the repair of the bulkhead along the west side of the river, involving the excavation of soil and sediments.

The purpose of the 1996 study by the USACOE was similar to the 1995 study and would also provide planning data for an expanded project known as the "Joseph G. Minish Passaic River Waterfront Park and Historic Area." The expanded construction project includes construction of a public marina, scenic overlook, recreation facilities and a promenade. The promenade would cross the riverfront area of Parcel 1.

A detailed description of each boring was provided in the RIWP. The USACOE performed borings in the Passaic River at or near the Site and on shore. Findings revealed elevated concentrations of semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs) and metals. There was evidence of free product and/or black staining and strong petroleum hydrocarbon (PHC) odors present in the three borings (WT-10, WT-11 and WT-12) drilled in the Passaic River closest to the Site. The borings conducted on shore revealed the presence of free product and PHC odors.

#### 3.2 NJDOT Study (1996/97)

As part of the 1996/97 NJDOT study, seven soil borings (EB-32 through EB-36 and MEB-74 and MEB-75 as shown on Figure 2) were advanced along the western boundary of Parcel 1 near or in the locations of former Gas Holders No. 1, 2 and 3. These borings were drilled to depths ranging from 10 to 18 ft below ground surface (bgs). The boring logs indicate fill (including coal, concrete, brick and asphalt fragments), sand, gravel, and shale and siltstone fragments. Photoionization detector (PID) readings did not indicate organic vapor concentrations above background. Some black staining was noted. Chemical analyses of soil samples collected from these soil borings indicated exceedances of the most stringent NJDEP Soil Cleanup Criteria for polynuclear aromatic hydrocarbons (PAHs), beryllium, lead and thallium.

## 3.3 USACOE Supplemental Study (1997)

During September 1997, prior to implementation of the Site Screening, soil boring S-3 was advanced in the southeast corner of Parcel 1. This boring was drilled as part of a geotechnical study for the construction of a river bank bulkhead. This boring was observed and logged by Langan on behalf of PSE&G. Free product and/or organic odors were noted at different strata, including bedrock.

#### 3.4 Langan Site Screening Sampling (1997)

In order to gather sufficient data to develop the RIWP, PSE&G prepared and implemented a Site Screening Sampling Plan (Site Screening), to identify the general geology and environmental conditions. The 1997 Site Screening performed by Langan for PSE&G included fifteen soil borings, four pairs of shallow/deep piezometers (P-1/P-1A through P-4/P-4A), and five temporary well points (TWP-1 through TWP-5) along the Passaic River (Figure 2). Synoptic water level measurements were obtained, and the potential for tidal influences upon groundwater elevations was assessed. One round of groundwater samples was collected from the piezometers

and temporary well points and submitted for laboratory analysis. The fill/vent ports of five USTs were also investigated.

The Site Screening Program included a sample location plan, field observations of MGP residuals, boring logs, well construction summaries, NJDEP Forms A and B, groundwater elevation survey data, groundwater sampling field parameters, groundwater analytical results, and UST investigation results. The results were previously provided in Appendix D of the RIWP.

The soil borings identified the subsurface stratigraphy as well as a broad view of the environmental conditions under Parcel 1. The borings also were utilized to investigate some of the former MGP structures. The findings indicated that soil contamination would require more exhaustive investigation.

The groundwater investigation indicated that there were contaminant exceedances above and below a clay/silt layer and that groundwater was tidally influenced, but groundwater flow directions were not confirmed. The conclusion made from this portion of the investigation was that further delineation of groundwater contamination would be required.

#### 4.0 REMEDIAL INVESTIGATION - SOIL

As discussed in Section 3.0, previously conducted investigations have determined that soil contamination exists beneath Parcel 1 above and below the silt/clay layer. The presence of contaminated soil beneath the silt/clay layer warranted an investigation as to whether these contaminants have migrated into the underlying bedrock. The following sections will discuss the delineation of soil contamination, the extent of the silt/clay layer, and the impact of contamination on the bedrock. All work was conducted in accordance with the May 1992 NJDEP *Field Sampling Procedures Manual* (DEP-FSPM) and N.J.A.C. 7:26 E.

A soil investigation was undertaken to further characterize the soil contamination. Previous investigations conducted at the Site provided limited analytical information about the contaminants on-site. The information that was collected indicated exceedances of the Residential Direct Contact Soil Cleanup Criteria (RDCSCC) and the presence of free product. A grid of fourteen soil borings (B-11 through B-24) and nineteen test trenches was proposed for contamination delineation. The borings were biased toward former MGP structures and the perimeter of the Site, and the trenches biased to locate former MGP structures. Based on the findings of the initial borings and test trenches, additional borings (B-25 through B-48) were added to assist in the horizontal and vertical delineation of soil contamination. Boring locations are depicted on the Site Plan (Figure 2), test trenches are located on Figure 8 and boring logs are provided in Appendix A.

Soil borings were installed by Advanced Drilling Inc., of Washington, New Jersey, utilizing hollow stem auger and mud rotary drilling techniques. Soil samples were collected from the borings by driving 2-inch diameter split spoons. Before each use, the split spoons were decontaminated in accordance with the Field Sampling Procedures Manual. If free product was observed immediately above the semi-confining silt or clay, the boring was stopped and steel casing was installed into the unit so that the product would not be mobilized into the "B" horizon.

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Upon completion, all borings were sealed with an 80/20 mix of portland cement and granulated bentonite.

Test trenches were installed by Creamer Environmental Inc. of Hackensack, New Jersey. The trenches were installed to investigate the subsurface conditions and locations of former MGP structures. There were no soil samples collected from the trenches.

Soil samples were collected from borings B-11 through B-23 and analyzed for volatile organic compounds plus a library search for up to ten tentatively identified compounds (VO+10) (EPA SW-846, GC/MS Method 8260B) utilizing the NJDEP methanol preservation sampling technique; semi-volatile organics plus a library search for up to twenty tentatively identified compounds (SVOC+20) (EPA SW-846, GC/MS Method 8270C); and the Target Analyte List (TAL) of metals including Cyanide (Cn) (EPA SW-846 Methods 6010B, 7471A, and 9012M). Samples were collected for laboratory analysis in accordance with the following guidelines:

- The first sample was collected from a discrete 6-inch interval within the 0-2 ft bgs depth interval to determine if the surface soils were contaminated at that location. Because most boring locations were in paved areas, the discrete sample was collected immediately below the pavement material.
- The second sample was collected from the 6-inch interval directly above the first encountered groundwater.
- The third sample was collected at the bottom of the boring from the 6-inch interval directly above the bedrock.

Additional soil samples were analyzed in the lower tier of Parcel 1 (borings B-11 through B-17) according to the following:

- The fourth sample was collected from the 6-inch interval with the highest PID reading between the first encountered groundwater (second lab sample) and the top of the clay unit, if the PID reading was greater than the PID reading of the second lab sample.
- A fifth sample was collected from the 6-inch interval with the highest PID reading below the clay, if the PID reading was greater than the PID reading of the third lab sample.

Additional soil samples were analyzed in the upper tier of Parcel 1 (borings B-18 through B-23) according to the following:

- A fourth sample was collected from the 6-inch interval with the highest PID reading between the surface soil (first lab sample) and the first encountered groundwater (second lab sample), if the PID reading was greater than the PID reading of the second lab sample
- A fifth sample was collected from the 6-inch interval with the highest PID reading between the first encountered groundwater (second lab sample) and the overburden/bedrock interface (third lab sample), if the PID reading was greater than the PID reading of the third lab sample.

There were some in-field modifications to this initial plan as discussed below. Boring B-24 was installed inside the wall of Gas Holder #3, but was sampled, to the extent possible, according to the above guidelines. Borings B-25 through B-48 were installed to further delineate the findings of the initial boring program. These additional borings were sampled with a bias to the detected contamination from the initial boring.

The RIWP proposed to treat Parcel 1 as one area of concern (AOC). However, based upon the results of the RI, it was decided to subdivide the Parcel into several different AOCs, as each has its own distinguishing environmental concerns. Following is a description of each AOC and its relationship to data gaps identified in the RIWP. AOCs for shallow soils (0 to 2 feet), "A" horizon, and "B" horizon soils are included on the Soil Contaminant Box Maps depicted as Figures 9a, 9b and 10, respectively. Contaminant concentrations which exceed the most

stringent NJDEP Soil Cleanup Criteria have also been depicted on these plans. A summary of the laboratory data collected from the soil borings has been included as Tables 3A, 3B and 3C, a laboratory summary is included as Appendix D and the NJDEP Electronic Deliverable diskettes are included in Appendix D. All boring logs have been included as Appendix A.

#### 4.1 Data Gap No. 1 - Delineation of Soil Contamination

As a result of the field work phase of the RI, the AOCs were identified and delineated. The AOCs are divided among the surface soils, defined as the interval from 0 to 2 feet below grade, the "A" horizon, defined as the interval below the surface soils and above the semi-confining unit, and the "B" horizon, defined as the interval including and below the semi-confining unit and above bedrock. The following section describes the AOC and the potential contaminant sources.

#### Shallow Soil Contamination

<u>AOC-S1</u> - This AOC, depicted on Figure 9A, encompasses a majority of Parcel 1 and is characterized by elevated PAH and metal soil contaminants in the surficial soils (0 to 2 feet). During trenching of TT-11A, which was installed to investigate subsurface conditions of Gas Holder #1, and TT-10, which was installed to investigate a tar seep along the retaining wall, a tar-like product was observed seeping from immediately below the asphalt. The boundaries of this AOC are defined by retaining walls which exist along the northern and southern property lines.

<u>AOC-S2</u> - This AOC is depicted on Figure 9A as encompassing a small area in the southwest corner of the Lower Tier. This AOC is visibly defined by cyanide contaminated soil that is teal in color. An analytical sample was collected from this area and confirmed cyanide above the most stringent DEP soil cleanup criteria.

#### "A" Horizon Soil Contamination

AOC-A1 - This AOC has been depicted on Figure 9B as encompassing a majority of the Lower Tier, and the northern portion of the Upper Tier. AOC-A1 is characterized by elevated soil contamination and NAPL from the surface soils down to the top of the semi-confining unit. The AOC was developed with the findings from borings B-7A, B-8, B-9, B-10, B-11, B-12, B-14, B-15, B-19, B-26, MW-2, MW-3, P-3, P-4, S-3, and test trenches TT-3, TT-5B, TT-8, and TT-14. The borings and associated contaminant exceedances utilized for the characterization of this AOC are depicted on Figure 9B.

During drilling activities the observed PID readings were predominantly 25 ppm or lower, although there were two readings of over 100 ppm (B-15 at 12 feet (155 ppm), and B-26 at 6 to 8 feet (120 ppm)). The soil contaminants present were predominantly SVOCs, with some concentrations of VOCs and metals. The product observed in the borings and in the test trenches had a distinctive MGP odor. The product was black with an oily texture.

The test trenches were installed to evaluate the subsurface conditions around former MGP structures. TT-3 was installed to investigate the conditions around a former tar tank. During excavation, MGP residuals were observed between 4 and 5 feet below grade inside the walls of the tank. TT-5B investigated a former tar separator and encountered MGP residuals outside the confines of the concrete vault at a depth of 4 feet. TT-8 investigated two former oil tanks and encountered residuals at approximately 7 feet below grade. TT-14 encountered MGP residuals from a former tar tank at a depth of approximately 2.5 feet.

Based upon knowledge of MGP operations historically, the source of the contamination present in AOC-A1 is likely related to storage, processing, and transportation of the tar during routine Site operations. A portion of this AOC is in an area scheduled for the construction of a river walk. For this reason, the subsurface soils may come into human contact during construction. AOC-A2 - This AOC has been depicted on Figure 9B as encompassing the southern portion of the Upper Tier, extending west across McCarter Highway into Parcel 2, and south into the adjacent property. The AOC was defined by the extent of either MGP residual product or soil contaminant concentrations from the first encountered groundwater to the top of the semiconfining unit above the most stringent NJDEP Soil Cleanup Criteria (SCC) Field observations and analytical data from borings B-21, B-23, B-27, B-28, B-30, B-31, B-33, B-35, B-36, B-38, and MW-1 were used to define this AOC. The horizontal extent of the AOC was delineated based on borings not displaying an MGP impact (B-16, B-20, B-22, B-40, B-39, B-37, B-41, B-42, B-46, and B-48). AOC-A2 is distinguishable from A1 by a heavier phase MGP product with generally lower PID readings in impacted areas. The borings and associated contaminant exceedances utilized for the characterization of this AOC are depicted on Figure 9B.

During drilling activities, the observed PID readings peaked as high as 3,779 ppm in soil collected from MW-1A and were significantly higher than those detected in AOC-A1. The soil contaminants present are predominantly SVOCs and VOCs. The product observed in the borings was determined to be of MGP origin and was observed to be approximately 4 to 5 feet thick. Based on its distinct odor, volatility and location, lighter phase drip oil is the suspected source. There were two drip legs associated with Gas Holder #3 and the reported operation of the drip oil pump formerly located in the southwest corner of Parcel 1 (exact location unknown). The drip leg to the southeast of the holder was discovered during UST removal activities and its location is presented on Figure 2. The drip leg to the southwest was not discovered during the RI, but the location was addressed by both borings and wells. This AOC contributes to the dissolved-phase groundwater contamination.

#### "B" Horizon Soil Contamination

AOC-B1 - This AOC has been depicted on Figure 10 as encompassing a majority of the Lower Tier. AOC-B1 was defined by the extent of either MGP residual product or soil contaminant concentrations above the most stringent NJDEP Soil Cleanup Criteria below the semi-confining

unit. Field observations and/or analytical data from borings B-11, B-15, MW-2A and P-4A were used to define this AOC. The horizontal extent of the AOC was based on borings not displaying a MGP impact (B-32, MW-5BR, B-17, B-22, B-20, B-16, MW-3, MW-3A, and MW-3BR). The borings and associated contaminant exceedances utilized for the characterization of this AOC are depicted on Figure 10.

During drilling activities, the observed PID readings were less than 2 ppm. The soil contaminants present were predominantly SVOCs, with a trace of benzene. The MGP residual observed in the borings was black with an oily texture and was observed to be as thick as 18 feet at boring B-12.

## 4.2 Data Gap No. 2 - Delineation of Clay Layer

As discussed in Section 2.5, there were two distinct depositional processes at work at this Site. The Upper Tier has been defined as a deltaic depositional environment, while the Lower Tier represents a fluvial depositional environment. As there were two distinct environments depositing these sediments, there are also two distinct fine-grained deposits. Underlying the Upper Tier and extending under a portion of the Lower Tier is a moderate brown silt deposit with varying amounts of clay. A wedge of brown clayey silt has also been identified encroaching from the north. An organic grey clay extends from the Passaic River to a position adjacent to the silty deposits of the Upper Tier (Figure 11 depicts these units). The stratigraphy is depicted graphically on lithologic cross sections presented as Figures 4, 5, and 6.

## 4.3 Data Gaps No. 3 and 17 - Investigation of Bedrock

The property which lies south of the Site formerly housed the Ballantine Brewery. The brewery used on-site wells for process water. In the early 1900s, Ballantine reported water pumped from on-site wells contained tar. Research (see Section 5.5) has failed to produce specific detail on these on-site wells except that the wells were generally installed several hundred feet into the

bedrock. The bedrock core samples from boring S-3 (southeast corner of Parcel 1 and adjacent to the former Ballantine Brewery) exhibited naphthalene odors and elevated PID readings that indicated the potential presence of contamination in the bedrock.

For these reasons, it was determined that the bedrock required further investigation. The RIWP objective was to determine fracture orientation, and to evaluate potential pathways for contaminant transport utilizing 10 feet of core sample. Four bedrock borings were proposed, however, only three were installed as an artesian well, unearthed during test trenching, was used in the investigation. The RIWP proposed to rock core 10 feet, however, the rock cores were extended further to look for free product and fracture zones.

Bedrock borings were installed by initially setting 6-inch diameter steel casing approximately 5 feet into competent bedrock. After the grout was allowed to set for at least 24 hours, rock coring was initiated using NX sized core barrels. All core samples collected were immediately screened with a PID for the presence of volatile vapors. Samples were visually inspected for the presence of MGP residuals or product sheens. The cores were described for rock type, fracture orientation, rock quality description (RQD), and degree of weathering.

The bedrock encountered during the RI was composed primarily of siltstone with minor interbedded sandstone. The primary fractures observed in the bedrock are bedding planes which appeared as horizontal fractures in the cores (the true dip of the bedrock in this area is approximately 8° to the northwest, which is difficult to observe in cores). Occasional inclined fractures were observed throughout the cores.

Following is a brief description of the findings from the three bedrock borings. Boring logs, including lithologic descriptions and PID readings, have been included as Appendix A.

<u>Boring - MW-3BR</u> - The boring for the installation of MW-3BR was installed in the southeast corner of the Lower Tier of Parcel 1. The core at this location was extended from 33 to 124 feet

bgs to include the significant fracture observed during a video log of the nearby artesian well (please refer to discussion of artesian well in Section 5.4). A zone of significant fracturing was observed from approximately 106 to 111.5 feet bgs which likely corresponds to the artesian well fracture.

MGP odors, sheens and some minor amounts of tar-like products were observed from 43 to 74 feet and again from 92.6 to 124 feet. When coring the length of 99 to 104 feet, product was observed in the drilling fluid exiting the bore hole.

Boring - MW-4BR - The boring for the installation of MW-4BR was installed near the southwest corner of the Lower Tier of Parcel 1. The core at this location extended from 37 to 62 feet bgs. The core was extended for 25 feet to evaluate potential MGP impact downdip of MW-3BR. MGP odors, sheens and some minor amounts of tar-like products were observed from 37 to 46 feet. There was no visual evidence of MGP impact beneath 46 feet.

Boring - MW-5BR - The boring for the installation of MW-5BR was installed near the northwest corner of the Lower Tier of Parcel 1. The core at this location extended from 47 to 72 feet. Coring was conducted for 25 feet to evaluate for MGP impacts. The bedrock in this location was well weathered and highly fractured for the entire 25 foot core. There were no MGP odors, sheens or product observed during the installation of this boring.

#### 5.0 REMEDIAL INVESTIGATION - GROUND WATER

As discussed in Section 3.0, previous investigations determined that groundwater contamination exists beneath Parcel 1. The investigations detected dissolved-phase groundwater contaminants above ("A" water horizon) and below ("B" water horizon) the semi-confining unit. The presence of contaminated groundwater warranted an investigation as to the lateral and vertical extent of the impact. The following sections discuss the delineation of groundwater contamination, the hydrogeologic nature of the affected aquifers, the Site conditions for natural attenuation, and the potential local receptors and sources for contamination. Aquifer modeling was also conducted and is described herein, but additional data is required to complete the model.

#### 5.1 Data Gap No. 4 - Delineation of Groundwater Contamination

The initial Site Screening, conducted by Langan in 1997, showed that the "A" water horizon in the Upper Tier of Parcel 1 contained concentrations of organic compounds (benzene, xylene, and naphthalene) and inorganic analytes above the NJDEP Class IIA Ground Water Quality Standards (GWQS). With the exception of benzene, these concentrations decreased in the "B" water horizon. For the Lower Tier of Parcel 1, groundwater in the "A" water horizon contained concentrations of organic compounds (benzene, ethylbenzene, xylene, acenaphthalene, naphthalene, pyrene, fluoranthene, and fluorene) and inorganic analytes. The concentrations generally decreased in the "B" water horizon except for benzene at P-3/P-3A, and ethylbenzene, xylene and naphthalene at P-4/P-4A.

Based on the findings of the Site Screening investigation, it was proposed to conduct additional investigations in an attempt to further delineate and characterize the dissolved phase contamination at the Site. The RI focused on the organic contaminants in groundwater that resulted from MGP contamination. Three "A" water horizon (MW-1, 2 and 3), three "B" water horizon (MW-1A, 2A and 3A) and four bedrock monitoring wells (MW-3BR, 4BR, 5BR and 6BR) were proposed in the RIWP. As discussed herein, four "A" water horizon (MW-1, 2, 3, and

6), three "B" water horizon (MW-1A, 2A, and 3A) and three bedrock monitoring wells (3BR, 4BR, 5BR) were actually installed in accordance with the DEP-FSPM, the RIWP, and the modification letter to the DEP dated June 1998. The overburden monitoring wells were installed in clusters in the northeast, southeast, and southwest corners of Parcel 1, and bedrock wells were installed in the southeast, southwest, and northwest corners of the Lower Tier of Parcel 1. The wells were installed and developed during the summer of 1998 by Advanced Drilling Inc. of Washington, New Jersey in accordance with NJDEP well construction protocols. All drilling logs and well certification forms A and B have been provided as Appendix A. All wells were surveyed by Keller and Kirkpatrick for elevation and location after installations were complete.

In the "A" water horizon the wells were screened from above the water table to near the top of the semi-confining unit. The "B" water horizon wells were screened from beneath the semi-confining unit to near the top of bedrock.

Groundwater elevations were measured on September 16, 1998 and October 14 through 17, 1998. Groundwater samples were collected in accordance with the RIWP on September 16 and 17, 1998. Depth to water ranged from 2.65 to 34.56 feet below the top of PVC in the monitoring wells. Groundwater samples were collected from all Site wells with the exception of P-4, which was impacted with free phase MGP product. Groundwater sampling was performed utilizing the EPA low-flow sampling technique. Samples were collected from either the highest conductive zone, or the mid-point between either top of water or top of screen (whichever was lower) and the bottom of the well. Samples were analyzed for VO+10, SVOC+20, metals, cyanide, total dissolved solids (TDS) and chlorides by Accutest Laboratories of Dayton, NJ (NJ Laboratory Certification No.12129). The results of the groundwater quality analyses are shown on Table 4; groundwater elevations and field chemistries are included as Table 1; a laboratory summary is included as Appendix E; NJDEP Electronic Deliverable diskettes attached in Appendix D; and groundwater sampling logs are included as Appendix F. The complete analytical data packages are not included in this report, however, they are on-file at PSE&G Headquarters in Newark, NJ. Based on data validation of the laboratory packages by JMR Associates and Valerie Smith, most

of the data is reliable. Data has been qualified with an "R" when it has been determined to be unreliable. Data validators performed a structured data review based on standard operating procedures from the NJDEP Division of Publicly Funded Site Remediation. Below is a general summary of the items that were evaluated. Method specific items were also evaluated to determine the validity of the data (e.g. Internal Standards for GC/MS analysis and ICP Interference Check Solutions for metals ICP analysis).

- The data package deliverables were evaluated for completeness as described in
   N.J.A.C. 7:26, Appendix A.
- Sample holding times were checked to ascertain the validity of the data.
- All tuning and calibration records were checked to determine that they meet method specific criteria.
- Method, trip and field blanks were evaluated to determine any field or lab contamination.
- Matrix spikes and duplicates were assessed to determine the precision and accuracy of a method using a specific matrix.
- Lab control samples and blank spikes were assessed to determine the laboratory's precision and accuracy for each method.
- Calculations were spot-checked when sufficient raw data was available.

BTEX (benzene, toluene, ethylbenzene, and xylene) isoconcentration contour maps (Figure 12A and 13A) and groundwater contour maps (Figure 12B and 13B) have been prepared for the "A" and "B" water horizons. A Groundwater Contaminant Box Map is included as Figure 14. These figures depict the contaminant plume both above and below the semi-confining unit. Groundwater flow direction, and known soil contaminated areas were considered for the construction of Figures 12A and 13A. More work is required to complete "A" horizon groundwater delineation to the east, northwest and south, and "B" horizon groundwater delineation in the bedrock was minimal, therefore an isoconcentration map is not presented.

# 5.2 Data Gap No. 5 - Aquifer Characteristic Testing

Aquifer permeability tests (slug tests) were performed between September 23 and 25, 1998 at sixteen monitoring wells to determine the hydraulic conductivity (K). The slug tests at the unconfined (MW-1, MW-2, MW-3, P-1, P-2, and P-3) and semi-confined wells (MW-1A, MW-2A, MW-3A, P-1A, P-2A, P-3A, and P-4A) were conducted by instantaneously removing approximately one gallon of water from each well using a bailer, and then measuring the rate of rise of the water level in the well. The slug tests at the bedrock wells (MW-3BR, MW-4BR, and MW-5BR) were conducted by instantaneously placing an enclosed, filled bailer into the well, and then measuring the rate of fall of the water level in the well. An automatic data logger, equipped with a down-hole pressure transducer, continuously recorded the changing water level until it attained an elevation corresponding to a recovery of greater than 90% of the removed/installed volume. Monitoring wells MW-6 and P-4 were not tested due to an insufficient volume of water and the presence of coal tar, respectively.

The test data were analyzed using the Bouwer and Rice method (Bouwer and Rice, 1976; Bouwer, 1989) for determining hydraulic conductivities of an unconfined or confined aquifer with partially or completely penetrating wells. The Bouwer and Rice method utilizes the saturated thickness of the aquifer (D), the depth of the well bottom below the static water level (H), and the length of the screened interval below the static water level (L), in addition to the semi-log slope of the recovery data, to calculate hydraulic conductivity. Since hydraulic conductivity is overwhelmingly influenced by the most permeable stratigraphic layer which intersects the saturated portion of the screened interval, the well boring logs were reviewed to determine the most permeable layer. The thickness of the most permeable layer, in relation to the well screen and static water level, was then utilized to calculate the parameters of D, H, and L. A summary of this evaluation and the hydraulic conductivity results are presented in Table 5. Graphs of the actual tests and more detailed computations are presented in Appendix B.

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Antecedent monitoring was performed at all monitoring well locations to evaluate the extent of any tidal influence at the time of the permeability testing. Several of the wells (MW-2, MW-2A, and MW-3) located immediately adjacent to the Passaic River were corrected for a background tidal influence. One monitoring well (P-3A) exhibited such a strong response to the tidal change that the corrected data continued to exhibit a curvilinear response which could not be analyzed. Other wells, known to exhibit tidal fluctuations, did not need to be corrected as the water level in the Passaic River was relatively steady (slack water) at the time of testing or the test data period did not exhibit any significant impact from tidal influence.

As indicated on Table 5, the analyses yielded values ranging from 0.36 ft/day (MW-3) to 144.3 ft/day (MW-2) in the unconfined wells, 0.15 ft/day (P-4A) to 45.9 ft/day (MW-3A) in the semiconfined wells, and 1.44 x  $10^{-2}$  ft/day (MW-5BR) to 15.3 ft/day (MW-3BR) in the bedrock wells. The geometric mean hydraulic conductivity value was 7.46 ft/day for the unconfined wells, 4.07 ft/day for the semi-confined wells, and 1.45 ft/day for the bedrock wells.

### 5.3 Data Gap No. 6 - Natural Attenuation Evaluation

The ASTM Remediation by Natural Attenuation (RNA) guide (ASTM, 1997) suggests that there are three lines of evidence to be explored in assessing natural attenuation at a site: 1) primary line of evidence (documented loss of contaminants from the site); 2) secondary line of evidence (geochemical indicators of naturally occurring degradation); and 3) tertiary line of evidence (optional data such as microbiological information and modeling of contaminant transport).

Table 6 summarizes groundwater sampling conducted at the Site to assess natural attenuation of the principal contaminants of concern (BTEX and naphthalene). In horizon "A", "clean" groundwater is found upgradient in MW-6. In the source area well (MW-1), BTEX levels are a high of 17.51 mg/l. In the downgradient well (MW-3), BTEX levels drop to 0.07 mg/l. Naphthalene also exhibits a decrease from 9.94 mg/l at MW-1 to non-detect at MW-3. Groundwater moving through horizon "B" collects 2.79 mg/l of BTEX in the source area (MW-

1A) and drops to non-detect at MW-3A. Similarly, naphthalene levels start at 1.04 mg/l at MW-1A and drop to 0.0017 mg/l in MW-3A. These reductions in contaminant levels represent a primary line of evidence of natural attenuation processes such as biodegradation, dispersion, dilution and adsorption.

The secondary line of evidence relates more directly to the effect of biodegradation on the plume. BTEX compounds constitute the primary food source for hydrocarbon-degrading bacteria, but naphthalene is degradable as well, and since it will represent a "demand" on available electron acceptors, will be included in this analysis. These compounds are subject to both aerobic and anaerobic processes. Indigeneous microbial communities will use a variety of electron acceptors in an effort to degrade available organic material. The sequence of electron-acceptor utilization is set by the amount of energy available from each process (called a Terminal Electron Acceptor Process, or TEAP). Since dissolved oxygen provides the most energy to the degrading bacteria, it is the preferred electron-acceptor. Once the available oxygen is consumed, other anaerobic bacteria will become better able to compete and will start to use the alternate electron acceptors. The sequence of TEAPs, as typically reported (Wiedemeier et al., 1995), involve oxygen, nitrate, ferrous iron and manganese (IV), sulfate and carbon dioxide.

The general trends observed at almost all degradable hydrocarbon contaminated sites are evident at the Site. Table 6 indicates that between the "clean" upgradient well (MW-6) and the source area well (MW-1) in horizon "A", the following changes occur:

| decreases fi |
|--------------|
| decreases fi |
| increases fr |
| incr         |
| decreases fi |
|              |

decreases from 4.6 mg/l to 0.43 mg/l decreases from 27.4 mg/l to ND increases from ND to 10.4 mg/l increases from 0.7 mg/l to 9.0 mg/l decreases from 98 mg/l to 66.3 mg/l

Each of these changes is consistent with the hypothesis of sequential aerobic/anaerobic biodegradation. The dissolved oxygen, nitrate and sulfate that are present in the upgradient

groundwater are used as electron acceptors (although sulfate is not completely utilized). Iron that is available as coatings of aquifer sediments is transformed from the oxidized state (Fe III) to the soluble, reduced state (Fe II), increasing iron levels in groundwater. Manganese reduction is also occurring and is included here even though that process is not always described in the literature on natural attenuation (since manganese is not as ubiquitous as iron). The final process in the sequence, the reduction of carbon dioxide producing methane (methanogenesis), was not assessed, but is likely occurring in the core of the plume.

It is possible to roughly quantify the amount of degradation attributable to each process. Table 7 uses the changes in electron acceptors or redox species (increased iron and manganese levels results from the transformation of oxidized species to reduced (more soluble) species) to calculate the expressed assimilative capacity (EAC) of each process. For example, studies indicate that approximately 3.14 mg/l of dissolved oxygen is utilized in the aerobic degradation of 1 mg/l of BTEX hydrocarbon. Similar utilization factors have been developed for each TEAP (Rifai et al., 1998), and those values are used in Table 7 to assess the amount of hydrocarbons that can be degraded by the aquifer. The sum of all EACs is 14.94 mg/l, which is similar in range to the highest BTEX concentration encountered at the Site (17.51 mg/l). Adding naphthalene (9.94 mg/l in MW-1) to the list of degradable hydrocarbons raises the total to 27.45 mg/l, compared to the EAC of 14.94 mg/l. Still, this suggests that the aquifer has the capacity to constrain the plume to some finite distance from the source area since electron acceptors are inputted into the plume along its entire perimeter. Given that upgradient well MW-6 is screened only in horizon "A", it is not possible to apply a similar analysis to horizon "B." Table 6 indicates that the source well (MW-1A) contains little iron or manganese, suggesting these TEAPs are not significant. Dissolved oxygen and nitrate are very low, suggesting those processes may be active. Sulfate levels are inconclusive.

Other indicators which point to biodegradation in horizon "A" include the change in pH, alkalinity and temperature in the source area relative to upgradient. Each of the TEAPs described produces  $CO_2$  as an end product (even methanogenesis). This accumulation of  $CO_2$ 

5.7

typically depresses pH and, in aquifers with carbonate minerals as part of the matrix, increases alkalinity. Also, the increased microbial activity in a source zone compared to upgradient would result in a slight increase in temperature between the two areas.

### 5.4 Data Gap No. 7 - Historic Artesian Well Investigation

The 1973 revision of the property plan showed an artesian well located along the southern property line in the Lower Tier. The well was not referenced in the Well Permit Inventory presented in the 1989 Preliminary Site Assessment, therefore, its presence and status were evaluated during the RI.

Advanced Geological Services performed a ground penetrating radar (GPR) survey on June 2, 1998 to locate the artesian well. GPR identified an area for excavation, and upon excavation, the well was found in an open top concrete vault with a steel plate covering the top. The well was approximately 165 feet deep and 10 inches in diameter.

It was decided to utilize this well in place of a fourth bedrock well. Advanced Drilling subcontracted William Stothoff Drilling Co. to perform a down hole video taping of the well for delineation of fractures and bedrock description. The initial video quality was poor due to a large amount of debris that obscured the view of the bedrock. The well exhibited what appeared to be a weathered bedding plane or fracture from 106 to 109 feet below grade. Other minor fractures or bedding planes were identified and their locations were recorded. A second attempt was made to video the well after the casing was scrubbed and the well purged of one volume of water. The second video was still of poor quality.

It was decided to sample the water quality in the artesian well in an attempt to delineate the vertical distribution of dissolved contaminants in the bedrock aquifer. Samples were collected at 45 feet (beneath the steel casing), 107 feet (the middle of the weathered zone), and 145 feet (near bottom of well). Samples were collected utilizing the EPA low-flow sampling technique.

Samples were analyzed for VO+10, SVOC+20, metals, TDS, and chlorides. Sample results have been summarized on Table 4. Results depict fairly uniform contaminant concentrations across these three zones of detected parameters. Uniformity was also observed in the temperature log (Appendix E) where the water temperature did not vary more than 0.6 °C.

The well was abandoned by tremie grouting with an 80/20 grout/bentonite mixture on October 22, 1998. A well abandonment report is included in Appendix A.

### 5.5 Data Gap No. 8 - Well Search

A well search was conducted as part of the 1989 Preliminary Site Investigation. A second well search was conducted during the RI to update the results from 1989. This well search consisted of reviewing the NJDEP's and the City of Newark's well records. The well search did not provide any information regarding the former Ballantine Brewery wells. Fourteen industrial and domestic wells were identified by the well search. The nearest wells are located at the intersection of Lombardy and Broad Street in the Bell Atlantic and Mutual Life buildings approximately 500 feet west and upgradient of the Site. There were no public supply wells identified in the search. The on-site groundwater flow was consistently toward the Passaic River, therefore, the industrial and domestic wells are not potential receptors (see Section 2.7). Figure 7 depicts the well locations and the well records have been summarized on Table 2 and attached as Appendix C.

## 5.6 Data Gap No. 9 - Records Review

An Electronic File Search was obtained from Environmental Data Resources (EDR) which utilized the federal and state Environmental Record Sources stipulated by American Society of Testing and Materials (ASTM). It was requested that EDR map any site located within the minimum search distance required for a respective federal and state Environmental Record Source. EDR's report has been included in Appendix G. A list of the federal and state Standard Environmental Record Sources reviewed and applicable approximate minimum search distances are presented below.

| Source                                                                                                                              | Date           | Search<br>Distance |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|
| USEPA National Priorities List (NPL)                                                                                                | September 1997 | 1 mile             |
| USEPA Comprehensive Environmental Response, Compensation<br>and Liability Information System (CERCLIS) List                         | December 1997  | 0.5 miles          |
| USEPA Resource Conservation and Recovery Information System<br>(RCRIS), Treatment, Storage and Disposal (TSD) List                  | January 1998   | 0.5 miles          |
| USEPA RCRIS Corrective Action Sites List (CORRACTS)                                                                                 | December 1997  | 1 mile             |
| USEPA RCRIS Facilities Database Small Quantity Generators List<br>(SM GEN)                                                          | January 1998   | 0.25 miles         |
| USEPA RCRIS Facilities Database Large Quantity Generators List<br>(LG GEN)                                                          | January 1998   | 0.25 miles         |
| USEPA Emergency Response Notification System (ERNS) List                                                                            | September 1997 | Subject site       |
| NJDEP Known Contaminated Sites in New Jersey Except those<br>Associated with the Bureau of Underground Storage Tanks<br>(SHWS) List | September 1997 | 1 mile             |
| NJDEP Solid Waste Management Section, Solid Waste<br>Facilities Directory (SWF/LF),                                                 | October 1997   | 0.5 mile           |
| NJDEP New Jersey Leaking Underground Storage Tanks<br>(LUST) List                                                                   | September 1997 | 0.5 mile           |
| NJDEP Underground Storage Tanks (UST) List                                                                                          | October 1997   | 0.25 miles         |

For the purposes of this report, adjoining properties are defined as any real property or properties that are contiguous or partially contiguous with that of the subject property, or would be contiguous or partially contiguous with that of the subject property but for a street, road, or other public thoroughfare separating them.

. 2

A review of the data received during this investigation revealed no likely off-site sources for the contamination present at the Site. For a detailed description of the file review, please refer to Appendix G.

MW-6 was installed in Parcel 2 to serve as an upgradient monitoring point to determine whether an upgradient source may be contributing to the dissolved phase contamination on-site. Samples collected from this well revealed only minor dissolved metal contamination above NJDEP GWQS. Soil samples (B36, 37, 38, 39, and 41) were also collected from Parcel 2 and reveal MGP residual product along the eastern property line but not further west. These data indicate that an upgradient off-site source is not suspected in contributing to the on-site contamination of the overburden.

### 5.7 Data Gap No. 10 - Aquifer Modeling

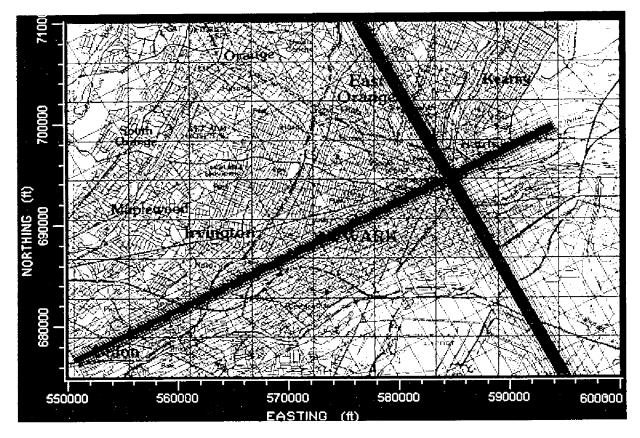
Aquifer modeling was performed to predict the hydraulic impact of the construction of an impermeable retaining wall, consisting of sheet piling, along the Passaic River adjacent to the Site. Toward this purpose, an aquifer hydraulic simulation was created. The model simulates the recharge, aquifer hydraulics, and discharge in the vicinity of the Site. It takes into consideration the regional stratigraphy, the structure of the bedrock and the overburden deposits, and the results of on-site hydraulic conductivity testing and water level measurements. The model is a steady-state simulation of the present Site conditions and was calibrated against present head conditions. The simulation was used to determine flows through the overburden and upper bedrock and to the Passaic River as exist currently and was used to predict changes in groundwater elevations in wells, hydraulic gradient, and groundwater flow direction in response to the hydraulic barrier to be introduced when the wall is constructed as part of the waterfront development.

5.11

### 5.7.1 Hydrogeological Framework

The Site and the surrounding region were modeled utilizing Visual Modflow ® (version 2.60), a three-dimensional graphical groundwater flow program, based upon the U.S.G.S. modular three-dimensional aquifer simulation package MODFLOW (McDonald and Harbaugh, 1988). The structure of the model consisted of a discretized grid with 94 columns, 88 rows, and 4 layers. A plan view is shown in the text figure below. The model grid was rotated 28° west of north so that flow would be modeled parallel to the proposed barrier in the vicinity of the Site. Within the confines of the model boundaries lie the Passaic River to the east, the drainage system of Newark Airport and the Arthur Kill to the South, the Elizabeth River to the west, and the Second River to the north. These features provided natural hydrogeologic boundaries in relation to the Site.

The water elevations at the hydrogeologic boundaries were determined utilizing a U.S.G.S.





topographic map of the pertinent area. Those features at sea level (e.g., the Passaic River south of Kearny, the Newark Airport drainage system, and the Arthur Kill) were modeled as constant heads with elevations of 0 feet above mean sea level (ft MSL). The other rivers were set as drains with general heads representative of those indicated on the topographic maps and with a streambed conductance of 1,000 ft/day. All hydrogeologic boundaries (constant heads and drains) were modeled in Layers 1, 2 and 3. These water bodies were not considered to bisect the bedrock or the buried valley aquifer (Layer 4).

The grid was discretized to provide high resolution in the vicinity of the Site and progressively expanded off-site, providing less resolution away from the area of concern. In the Site area, the four model layers simulated the varying hydrogeology. The unconfined layer (Layer 1) representing the "A" Horizon was divided into two zones (deltaic and fill) based on stratigraphic information summarized in the well and boring logs. The deltaic zone was predominantly on the western portion of the Site while the fill zone was predominantly on the eastern portion of the Site while the fill zone was predominantly on the eastern portion of the Site and the gray clay predominantly on the eastern portion of the Site, towards the river. The "B" Horizon (Layer 3) was consistent throughout the Site as was the bedrock layer (Layer 4). Outside of the Site, the parameters for each layer were modified. Since the glacial till is the predominant overburden material throughout the region, the off-site areas of Layers 1, 2, and 3, away from the area of concern, were modeled utilizing till parameters. In addition, to the south, the model contained a second zone in Layers 3 and 4 to represent a greater till thickness and the presence of the buried valley aquifer system, respectively.

At the Site, the geologic logs were evaluated to determine the bottom elevations of Layers 1, 2, and 3, as described above, and the layer bottoms were created using these elevations. Away from the Site, the bottom elevations of Layers 1, 2, and 3 were modeled as constants, based on boring log observations at the borders of the Site as well as in response to regional changes. The bottom of the bedrock layer (Layer 4) was consistent across the model.

5.13

### 5.7.2 Local Recharge

An estimate of regional recharge was obtained using a modification of the method presented in Charles *et al.* (1993). The method uses land use/land cover (LULC) overlays, which make use of up to 13 LULC codes to divide the region of interest into constituent areas. These overlays are constructed for the area or municipality under consideration and are then overlaid on an appropriately scaled soils map. This further divides the area of interest into numerous subregions, each with a specific soil type and LULC code. Charles *et al.* (1993) provides a set of "recharge factors" and "recharge constants" for each possible combination of soil type and LULC code. The recharge factor is then multiplied by a "basin factor," which is always equal to 1.3, and a "climate factor," which is provided by Charles *et al.* (1993) for each municipality in New Jersey. The recharge constant for each subregion is then subtracted from the product of these factors to obtain the recharge rate, in inches per year. Multiplying the recharge rate by the area of the subregion would allow an estimate of the value of the subregion as a recharge area.

The land use in the upgradient portions of the modeled area is primarily residential. The lot sizes are rather small. Consequently, the Charles *et al.* (1993) LULC designation of 1, "Residential (65% impervious), 1/8 acre lots - usually multi-family dwelling units," was used for a general estimate of the regional recharge.

There are no published NRCS Soil Surveys for Essex and Hudson Counties. Since the method makes use of NRCS Soil Survey soil designations, a modification of this method was necessary. The modification employed here is simply to consider the main soil types present in the closest sections of neighboring Union and Bergen Counties, for which soil surveys are available. The adjacent regions in these counties are geologically comparable to the Essex County areas included within the aquifer model. It was reasoned that if the soils were the same on either side of area of interest, we could have some assurance that the modeled soils would be the same. Except for the designation "urban land, " which could represent any pre-existing soil type, more than 90 percent of the area in the closest portions of Bergen and Union counties is covered by

Boonton soils. The remainder are Dunellen Soils or surface water. Charles *et al.* (1993) treats all the soils within a soil unit as hydraulically equivalent. Consequently, the recharge factors and recharge constants are the same for all the soil groups within the Boonton unit, regardless of whether they are "stony silt loams, 8-15 percent slopes" or "very stony silt loams, 15-30 percent slopes."

Boonton soils, with an LULC code of 1, are assigned a Recharge Factor of 4.70 and a Recharge Constant of 2.62. The climate factors for Newark, Belleville, East Orange, Irvington, Hillside, and Elizabeth are 1.31, 1.44, 1.39, 1.31, 1.31, and 1.31, respectively. The average is approximately 1.34. Applying the recharge formula of Charles *et al.* (1993) to this loosely defined area yields an annual recharge rate of 5.57 inches per year (=  $[1.3 \times 4.70 \times 1.34] - 2.62$ ). This was the general regional recharge rate applied across the modeled area.

# 5.7.3 Initial Values for Hydraulic Parameters

The geometric mean hydraulic conductivity values were utilized as initial values in the aquifer numerical model for the unconfined layer (7.46 ft/day), the semi-confined layer (4.07 ft/day), and the bedrock (1.45 ft/day). Hydraulic conductivity values for the clay/silt layer were obtained from triaxial permeability testing performed on collected Shelby tube samples. These triaxial permeability results are summarized on Table 5 and the data are presented in Appendix B. Since there were significant variations between computed hydraulic conductivity values among monitoring wells within the same layer, each geometric mean was not considered to be an explicit value for each layer, but rather a starting point in the numerical model. The final hydraulic conductivity values in the calibrated model varied from these starting values but remained within the range of test results. In addition, the triaxial permeability results were determined to be representative, but not definitive of the brown silt and gray clay. Final hydraulic conductivity values in the brown silt and gray clay in the calibrated model varied from these starting walues utilized in these starting values. Table 8 contains a summary of all hydraulic conductivity values utilized in the final, calibrated simulation.

### 5.7.4 Calibration

Synoptic water levels observed on October 14, 1998 at the on-site wells were used as calibration targets in the model. The water levels at the respective locations of each monitoring well were simulated. For each calibration run, these simulated heads were compared with the water level elevations measured in the field. The initial starting hydraulic parameters utilized in the model produced simulated water level elevations that (1) exceeded the target elevations in the "A" Horizon, (2) were similar to those observed in the "B" Horizon, and (3) were comparable to those in the bedrock. Based upon these initial results, different parameters were modified to calibrate the model and obtain a best-fit for the water levels in all three horizons. A plot of the calculated heads versus observed heads for the final calibration run is presented on Figure C included in Appendix B.

Originally, only one zone (fill/deltaic) was modeled in Layer 1 on-site. To better simulate the change in horizontal hydraulic gradient, it was determined that distinct transmissivity zones were required for the predominantly fill portion of the Site and the predominantly deltaic portion of the Site, as discussed in Section 2.5. The hydraulic parameters for these two zones were based on the hydraulic testing results performed at wells that were located in these two areas. The two zones in Layer 2 underwent only slight modification. It was determined that the horizontal and vertical hydraulic conductivities of the brown silt were greater in relation to the gray clay than originally modeled. The final values for the brown silt and the gray clay are in agreement with literature values. There were no changes to the hydraulic parameters in Layer 3 except in the area of the buried valley aquifer. It was determined that the thickness of the till overlying the buried valley aquifer was substantially thicker than in other parts of the region. Therefore, the horizontal hydraulic conductivity (K<sub>h</sub>) was increased and the vertical hydraulic conductivity (K<sub>v</sub>) was decreased to simulate this greater thickness. The hydraulic parameters in Layer 4 were only slightly modified from starting values (i.e., original  $K_h = 1.45$  ft/day, original  $K_v = .145$  ft/day; final  $K_h = 2$  ft/day, final  $K_v = .2$  ft/day) away from the buried valley aquifer. At the buried valley aquifer, there were no changes to the hydraulic parameters. Initial values of recharge, constant

heads, and drain elevations and conductances were not modified during calibration.

The simulated hydraulic gradients were well matched to the observed gradients in the "A" Horizon in terms of magnitude and direction. While the magnitude of the simulated hydraulic gradient in the "B" Horizon was similar to the observed, the simulated direction was the same as that of the "A" Horizon. As discussed earlier (Section 2.6), the observed hydraulic gradient in the "B" Horizon is directed somewhat more to the north on Site than that of the "A" Horizon. This is probably the result of a major bedrock fracture in the vicinity of MW-2A that resulted in a bedrock channel in that area (Figure 3). Since the most likely discharges for the bedrock aquifer are the Passaic River and the buried valley aquifer, which are to the east and south of the Site, respectively, it is assumed that the northeastward component in the "B" Horizon on the Site is regional. Consequently, we did not attempt to match it in calibration. The effect of not considering this deviation is to perhaps overestimate the amount of flow that passes toward the south and into the buried valley aquifer. This is conservative from the perspective of preserving the water quality of the buried valley aquifer.

### 5.7.5 Simulation Results

The calibrated model, representing steady-state present conditions, indicates that approximately 2,330 ft<sup>3</sup>/day of flow enters the Site from upgradient in the "A" Horizon. Approximately 370 ft<sup>3</sup>/day is added on-site due to infiltration of precipitation. In the "B" Horizon, 5,350 ft<sup>3</sup>/day enters from the off-site upgradient and 600 ft<sup>3</sup>/day leaks in from the "A" Horizon on-site.

In the "A" Horizon, approximately 1,800 ft<sup>3</sup>/day leaves the Site by discharging into the Passaic River, 300 ft<sup>3</sup>/day flows laterally off-site toward the south, and 600 ft<sup>3</sup>/day flows downward into the "B" Horizon. In the "B" Horizon, approximately 920 ft<sup>3</sup>/day discharges upward into the Passaic River, 1,430 ft<sup>3</sup>/day under-flows the Passaic River and ultimately discharges into the buried valley aquifer, approximately 1,000 ft<sup>3</sup>/day flows off-site toward the north, and approximately 2,590 ft<sup>3</sup>/day leaves the Site by flowing southward, ultimately to discharge in the

river or the buried valley aquifer.

The results of the predictive simulation, which features an impermeable vertical wall (to be installed by the USACOE) penetrating from the water table to bedrock and extending from Bridge Street to Jackson Street along the Passaic River, demonstrate that the groundwater flow will be significantly affected by the wall. The simulation predicts that approximately 1,940 ft<sup>3</sup>/day of flow enters the Site from upgradient in the "A" Horizon. Approximately 370 ft<sup>3</sup>/day is added on-site due to infiltration of precipitation. In the "B" Horizon, 5,640 ft<sup>3</sup>/day enters from the off-site upgradient and 1,450 ft<sup>3</sup>/day leaks in from the "A" Horizon (compared to 600 ft<sup>3</sup>/day without the wall).

In the "A" Horizon, the barrier effectively prevents groundwater from leaving the Site by directly discharging into the Passaic River. Instead, 890 ft<sup>3</sup>/day flows laterally off-site toward the south, and 1,450 ft<sup>3</sup>/day flows downward into the "B" Horizon. In the "B" Horizon, approximately 1,030 ft<sup>3</sup>/day discharges upward into the Passaic River, 1,520 ft<sup>3</sup>/day under-flows the Passaic River and ultimately discharges into the buried valley aquifer, approximately 1,490 ft<sup>3</sup>/day flows off-site toward the north, and approximately 3,170 ft<sup>3</sup>/day leaves the Site by flowing southward, ultimately to discharge in the river or the buried valley aquifer (compared to 2,590 ft<sup>3</sup>/day without the wall).

# 6.0 MGP RESIDUAL INVESTIGATION

During the Site Screening, the remnants of several former MGP related structures were identified on-site. Some of these were physically discovered, while others were referenced on historic site plans. The locations, subsurface condition, and potential environmental impact were not known. The RIWP outlined an investigation using test trenches to identify former MGP related structures and associated contamination. The test trenches were excavated by Creamer Environmental and their locations are shown on Figure 8. The following sections describe the investigation findings.

### 6.1 Data Gap No. 11 - Valve House Investigation

The RIWP required the investigation into the source of the MGP residuals along the retaining wall on the Upper Tier of Parcel 1. During the RI, visible MGP residuals were observed along the retaining wall between borings B-18 and B-19. A concern was that the residual product was emanating from the former valve house (Figure 2) which was depicted on the historic site plans. To investigate this occurrence, a test trench (TT-10) (Figure 8) was installed on the upper tier side of the retaining wall to a depth corresponding with the observed tar-like product.

The trench was approximately 6 feet deep and encountered only fill material. At 1.5 to 2 feet below grade, a gravel layer was encountered that contained a tar-like material. The excavation was widened towards the retaining wall by 1.5 feet, and from 2 to 3 feet below grade where loose bricks were encountered that also contained the tar like material. At the bottom of the brick layer, a tar seep was observed. No evidence regarding the presence of the valve house or the source of the tar was found, therefore this data gap has not been closed. The tar encountered during excavation was replaced at its originally discovered depth.

### 6.2 Data Gap No. 12 - Delineation of MGP Residuals

The RIWP required the investigation into previously detected MGP residuals in the subsurface. MGP residuals were observed at various depths at five boring locations (B-2, B-6A, B-8, TWP-3 and P-4A) during the Site Screening. The extent of the residuals in these locations was unknown and required investigation. Please refer to Section 4.1 for a discussion of AOCs at the Site. Based on these AOC delineations, this data gap is closed.

### 6.3 Data Gaps No. 13 and 14 - Investigation of Former MGP Structures

#### Tar Tank - Northeast Corner of Lower Tier

An attempt was made to dig the trench (TT-1) through the center of the tar tank. This attempt failed as the tank was either completely encased in concrete, which could not be broken, or the concrete was the foundation for an aboveground tar tank. During the Site Screening, an unsuccessful attempt was made to advance boring B-7 through this tank. TT-1 and boring B-7A were performed adjacent to the concrete structure to a depth of approximately 5 feet. There were no observed MGP residuals adjacent to this structure, nor was there any evidence which would indicate what the structure was. For this reason, the structure is being referred to as simply a concrete vault on the figures.

### 20,000-Gallon Tar Tank - Adjacent to Passaic River

The trench (TT-2) was excavated to a depth of approximately 5 feet and encountered what appeared to be a foundation for an aboveground tank. There was no visual evidence of MGP residuals in this trench. For this reason, the structure is being referred to as simply a concrete slab on the figures.

During the Site Screening, B-8 was advanced through this slab. The boring found that the slab was approximately 3 feet thick. The log also describes free product contamination in the soils from approximately 7.5 feet to the bottom of the boring at 20 feet.

### 4,000-Gallon Tar Tank - Adjacent to Passaic River

The trench (TT-3) was excavated through the center of the tank which was either square or rectangular in shape (based on the walls having no curvature, the entire tank was not uncovered) with metal plating lining the inside of the concrete and brick walls of the tank. Water was trapped in the tank at a depth of approximately 2 feet. A tar-like product was encountered in the tank between 4 and 5 feet. TT-3 extended to a depth of 5 feet but did not encounter the bottom of the tank.

### 9,750-Gallon Tar Well - Lower Tier

A portion of the tar well was visible at the surface east of the 20,000-gallon tar tank investigated by TT-2. The dimensions of the tar well were approximately 25 feet by 13 feet. The top of the tar well had three 2 to 4 inch diameter holes which were probed to determine the contents of the well. The tar well was 5.5 feet deep and was almost completely full of water. There appeared to be a wooden piling of some sort visible in one of the larger holes. TT-4B was installed to a depth of approximately 5 feet perpendicular to the western edge of the well and there was no visual evidence of MGP residuals.

### Former Tar Separator Vault - Lower Tier

TT-5A & 5B uncovered a concrete vault and tar separator. TT-5A investigated the north edge of the concrete vault and TT-5B investigated the south edge of the vault and west side of the separator. TT-5A encountered tar inside the vault at approximately 5.5 feet, but there was no evidence of tar outside the vault. TT-5B discovered MGP residuals from approximately 4 to 5 feet (the bottom of the trench) outside of the vault. The remainder of the trench was excavated to 3 to 4 feet to avoid generating large quantities of impacted soil. The interior of this separator had one to two inches of MGP residuals on the bottom.

### 6,400-Gallon Tar Well and 4,000-Gallon Liquor Well

TT-6A was excavated from north to south in the assumed location of these two structures. The trench was excavated to a depth of approximately 5 feet and encountered neither the structures

nor MGP residuals. The trench did encounter the foundation of the brick building which caused water to enter the trench. TT-6B was installed near the water seep and extended to the east from TT-6A. This trench encountered no evidence of the tar or liquor wells nor MGP residuals.

#### Gas Holder #4 - Northwest Corner-Lower Tier

The trench (TT-7) was excavated through what was the assumed center of the holder and to a depth of approximately 7 feet. The trench only unearthed the northwest wall of the holder. The southeast wall was not encountered. There was no evidence of MGP residuals at this location. Borings B-6 and B-13 (Section 4.1) were installed inside the holder and revealed no MGP residuals on the floor of the holder at approximately 9 feet deep.

#### 115,000-Gallon Tar Tank and 80,000-Gallon Oil Tank

The trench (TT-8) was excavated through what was the assumed location of the tanks. TT-8 was installed to a depth of approximately 5 feet, but did not encounter the tanks. It is probable that these tanks were aboveground. A test hole was excavated during trenching to investigate the possible presence of a floor or foundation to the tanks. Between 7 and 9 feet, oily product was discovered. There was no evidence of a foundation.

Soil borings B-9 and B-14 were installed to investigate this area and encountered neither evidence of the tanks nor MGP residuals.

### Two 50,000-Gallon Oil Tanks

TT-9 was excavated on the ramp to the west of the oil and tar tank investigated by TT-8. The trench was excavated through what was the assumed location of the tanks. The trench was excavated to only approximately 5 feet bgs to protect the integrity of the retaining wall. The excavation did not encounter either the tanks or MGP residuals. Coal fragments were discovered from 1 to 2.5 feet below grade.

### Valve House - Upper Tier

The valve house was not located. The discussion for TT-10 and how it relates to the valve house has been provided as Section 6.1.

# Gas Holder #1 - Northern Portion - Upper Tier

TT-11A was excavated to bisect the gas holder to determine its approximate size. Two portions of the brick wall of the holder were uncovered during the trenching, and there was a slight MGP odor at approximately 8 feet deep at the approximate center of the holder. The trench was excavated to 10 feet below surface. TT-11B was installed to confirm a third point on the wall. The wall was encountered, but there was no evidence of MGP residuals in the trench. B-1 and B-29 were excavated inside the holder and found no evidence of MGP residuals. The bottom of the holder was encountered at 13 feet.

# Gas Holder #2 - Central Portion - Upper Tier

TT-12A was not excavated as proposed, since the subsurface condition and location of the holder was determined during UST removals (Section 7.1). TT-12B was excavated in the northwest portion of the holder and encountered the concrete wall. There was no evidence of MGP residuals in this location. The UST removal excavation discovered a one foot thick layer of MGP residuals in the bottom fill material. Some of this material was removed during the excavation of gasoline contaminated soil. B-2 encountered this material at approximately the same depth and encountered the bottom of the holder at approximately 12 feet deep.

# Gas Holder #3 - Southern Portion - Upper Tier

TT-13A was excavated from southwest to northeast across the holder. The trench was excavated to approximately 10 feet but did not encounter the holder bottom. An attempt was made on the northeast side to determine the depth, by extending the trench to approximately 14 feet deep. This attempt had to be stopped due to the large quantity of water which was encountered at approximately 11 feet deep in the holder. There were MGP odors present in the fill being removed from beneath the water. Borings B-3, B-3A, B-3B, B-24 and B-27 were all installed

inside the holder. The holder has a conical bottom with an approximate 2.5 foot rise toward the center. There was no inner ring wall observed in this holder.

# Tar Tank - Adjacent to Passaic River

TT-14 was added to the original scope of work upon the discovery of an historic site plan depicting a tar tank to the east of the tar separator vault. The trench encountered what appeared to be the corner of a structure (being referred to as the tar tank). There were MGP residuals in the excavation from 2.5 to 4 feet below grade. The bottom of the tank was encountered at 4 feet deep.

# 7.0 MISCELLANEOUS INVESTIGATIONS

### 7.1 Data Gap No. 15 - UST Removals

Eight USTs were previously identified at the Site which required location and removal. The first phase of the UST investigation involved locating the USTs via ground penetrating radar (GPR). The second phase involved removal and disposal of the USTs.

Advanced Geological Services performed the GPR survey to locate the USTs. Several traverses were made across the suspected locations of the USTs that identified the locations of USTs E-1, E-2 and E-3 within gas holder #2. The remaining five USTs were not identified by GPR. However, the fill pipes were discovered for USTs A-3, A-4 and E-4 east of gas holder #3. USTs A-1 and A-2 were located with a test pit during excavation activities within gas holder #2. All tank locations were confirmed upon excavation and are shown on Figure 2.

Between June 3 and 8, 1998, the eight USTs were removed by Creamer Environmental Inc. Construction Permits were obtained from the City of Newark (Appendix H), and the NJDEP was notified on May 14,1998. The copy of the notification to the DEP and facility questionnaire are on file with PSE&G.

Creamer Environmental excavated the overlying soil and exposed the top of each UST. For USTs E-3 and E-4 (contents listed on following table), a manhole was cut in the top of each tank using a spark free air chisel to allow access for tank cleaning. For the six gasoline USTs, Creamer inerted the interior of each tank by placing dry ice into the UST and allowing a sufficient amount of time to pass prior to cutting the tank open. After inerting the UST, a manhole was cut in each UST utilizing a spark free air chisel to allow access for tank cleaning.

After manholes were cut, Creamer Environmental entered the USTs to begin cleaning. All free standing product was removed by Clean Harbors via vacuum truck and transferred into an on-site

frac tank. Following the removal of the liquid product, the sludge in the bottom of each tank was removed by Lorco Petroleum Services via vacuum truck. After each tank was cleaned, they were removed from the excavation and placed on plastic for inspection (conditions of each tank are described in the following table). Following inspection, Creamer Environmental hauled the USTs off-site for disposal at a local scrap metal facility (receipts included in Appendix I).

UST A-1 and A-2 discharged gasoline to the subsurface inside holder #2. The fill material underneath and around these two USTs was saturated with gasoline. Because of the quantity of gasoline that was present in the holder, it was decided to excavate all material contaminated with free phase gasoline. Approximately 500 tons of soil were removed from the holder in an excavation depicted on Figure 15. Because the discharge occurred within a gas holder, excavation ceased upon encountering the wall and floor (10 to 12 feet below grade). Four post-excavation samples (EXC-1, 2, 3 and 4) were collected at the bottom side wall (approximately 10 feet bgs) of the excavation upon completion of the free product contaminated soil removal. Benzene and xylene were detected in the post-excavation soil samples at levels slightly above the most stringent NJDEP cleanup criteria (Table 9). Lead was also detected above the most stringent NJDEP cleanup criteria in sample EXC-3.

To investigate the possibility of gasoline migration through the holder wall, boring B-25 was installed northeast of the holder, in close proximity to the UST locations. The soils did not reveal any evidence of gasoline contamination and a sample collected at 11.5 to 12 feet bgs did not show contamination above the NJDEP SCC.

As discussed above, soil contamination was noted in the excavation for USTs A-1 and A-2. The contaminated soil was removed below these tanks and below E-1 and E-2 to the bottom of the former gas holder. The soil being removed was periodically evaluated for the presence of free product contamination using an organic vapor monitor (OVM) and performing soil/water agitation tests. Free product contaminated soil was immediately hauled off-site under Clean Harbors supervision. Soil was transported to and disposed of at an approved facility.

A summary of all waste removed by PSE&G is included in Appendix I.

In accordance with DEP protocols, PSE&G called the DEP Hotline and reported that a release had occurred from USTs which were being removed as part of a RI. PSE&G also indicated that the Case Manager was Mark Walters and that all other communications would be to him. The NJDEP issued case number 98-06-05-1215-15.

After the USTs were removed, post-excavation soil sampling was conducted to assess the impact the discharge from USTs A-1 and A-2 had on the subsurface soils. Post-excavation samples were collected from UST A-1, A-2, E-1 and E-2 along the excavation sidewalls due to the soil removal described above. All samples were collected in accordance with NJDEP-FSPM, and in accordance with N.J.A.C. 7:26-E. Soil samples were also collected from USTs E-4, A-3 and A-4 in accordance with N.J.A.C. 7:26-E. Results from sample E4-3, although above the most stringent NJDEP SCC can be attributed to the contamination associated with the drip leg located southeast of holder #3.

A description of each UST is provided in the table below. A UST sample location plan has been provided as Figure 15, the sample results have been summarized on Table 9 and a laboratory summary is provided as Appendix J.

| UST No.         | E-1      | E-2      | E-3    | E-4       | A-1        | A-2        | A-3      | A-4      |
|-----------------|----------|----------|--------|-----------|------------|------------|----------|----------|
| Length (ft.)    | 29       | 29       | 12     | 6         | 24         | 24         | 10.5     | 10.5     |
| Width (ft.)     | 6        | 5.8      | 5.5    | 4         | 5.3        | 5.3        | 4        | 4        |
| Capacity (gal.) | 6.000    | 6,000    | 2,000  | 550       | 4,000      | 4,000      | 1,000    | 1,000    |
| Contents        | gasoline | gasoline | diesel | waste oil | gasoline   | gasoline   | gasoline | gasoline |
| Construction    | steel    | steel    | steel  | steel     | steel      | steel      | steel    | steel    |
| Condition       | good     | good     | good   | good      | poor/holes | poor/holes | good     | good     |

# 7.2 Data Gap No. 16 - Soil Gas Investigation

One concern at the Site was the possible presence of volatile vapors in the subsurface. Previous investigations identified elevated PID/FID readings in overburden soils above the groundwater. To investigate the possibility of migrating vapors, a soil gas survey was conducted on June 2, 1998. Tracer Research Corporation of Monmouth Junction, New Jersey was retained to conduct the survey. Ten soil gas samples were collected along the northern, southern and western property lines (Figure 2). Samples were collected from the 0 to 2 feet bgs interval and field analyzed for BTEX. The findings of the investigation revealed no BTEX impact in the subsurface vapors.

# 8.0 SUMMARY OF FINDINGS

This section summarizes the findings and recommendations of the RI conducted at the Site. The information provided in this section is based upon the results of this RI. Section 8.1 summarizes the findings of the soil investigation. Section 8.2 summarizes the findings of the bedrock investigation. Section 8.3 summarizes the findings of the groundwater investigation. Section 8.4 summarizes the MGP structures investigation. Section 8.5 summarizes the findings of miscellaneous investigations conducted during the RI.

### 8.1 Soil Investigation

From the data collected, the following soil AOCs have been identified.

### 8.1.1 Shallow Soils

AOC-S1 encompasses the majority of Parcel 1. The concern in this AOC is the presence of elevated PAH and metal soil contamination in the surface soils (0 to 2 feet). No free product was observed within the soils, however, tar was observed immediately underneath the asphalt and elevated laboratory results were evident. AOC-S1 has not been fully delineated to the northwest and south, however, the presence of retaining walls along both of these property boundaries likely represents the extent of the contamination.

AOC-S2, a sub-area of AOC-S1, contains cyanide impacted soil at the surface in the southwest corner of the Lower Tier. This area requires additional investigation to determine the horizontal and vertical extent of impacted soil.

# 8.1.2 "A" Horizon Soils

AOC-A1 encompasses a majority of the Lower Tier of Parcel 1. The primary concern in this AOC is the presence of MGP residual free product. This product has been discovered above the semi-confining clay layer. Soil samples collected from this AOC exhibit elevated SVOC, VOC, and inorganic contamination. These soils may come into human contact during the construction of the river front park, and they represent a potential source of groundwater contamination. AOC-A1 has been fully delineated.

AOC-A2 encompasses the southern portion of the Upper Tier and extends westward across McCarter Highway into Parcel 2, off-site to the south, and east toward the Passaic River. The concerns in this area are the presence of MGP free product contamination in the saturated zone above the silt layer. Soil samples collected from this area exhibited elevated PAHs, VOCs, and inorganics. The contaminated soils in the upper tier and under Parcel 2 are at least 20 feet deep, while off-site to the south contaminated soil is encountered between 10 and 15 feet deep. AOC-A2 has not been fully delineated and requires further investigation.

## 8.1.3 "B" Horizon Soils

AOC-B1 encompasses a majority of the Lower Tier of Parcel 1. The primary concern in this AOC is the presence of MGP residual free product in the northeast corner. Soil samples collected from this AOC exhibit elevated concentrations of SVOCs and benzene. AOC-B1 has not been fully delineated and requires further investigation.

### 8.2 Bedrock Investigation

As discussed in Section 4.3, the former Ballantine Brewery used wells for process water. These wells were reportedly several hundred feet deep and open in the bedrock. Ballantine reported that water pumped from these wells contained tar. During the USACOE investigation, the

bedrock boring (S-3) installed at the southeast corner of the Site, revealed free product and PHC odors. Therefore, the bedrock was investigated.

The remedial investigation determined that the bedrock underlying the Site is composed primarily of siltstone. MGP residuals were observed in MW-3BR and MW-4BR at the southeast corner of the Site, corroborating the findings of the USACOE. The extent to which MGP residuals have migrated onto the former Ballantine property requires further investigation

### 8.3 Groundwater Investigation

Ten monitoring wells were installed (MW-1, 1A, 2, 2A, 3, 3A, 3BR, 4BR, 5BR, and 6) to further evaluate and delineate the extent of groundwater contamination under the Site. The results indicate that groundwater is contaminated with MGP residuals, predominantly, BTEX and naphthalene. The investigation has concluded that the primary source area for the dissolved phase volatile contamination is from AOCs A1 and A2.

Of the inorganics, iron and manganese exceedances can be assigned to the effects of anaerobic biodegradation, as previously discussed. Sodium is consistently high across the Site (even in the upgradient well MW-6). There are isolated exceedances of arsenic, lead and thallium that are insufficient to warrant action on their own. Aluminum above standards is more widespread and is also present in the upgradient well.

Groundwater contamination in the "A" and "B" horizons and the bedrock have not been fully delineated and requires further investigation.

# 8.4 MGP Structures

As the Site was an MGP plant in the late 1800s and early 1900s, a portion of the RI was conducted to determine the location and subsurface conditions of former MGP equipment and

facilities. A test trench program was implemented (in association with a number of soil borings) to delineate the remnants of these structures. Some of the oil and tar tanks which were indicated on historic plans were located. The locations of former MGP facilities have been depicted on figures within this report.

# 8.5 Miscellaneous Investigations

Eight USTs were removed from the Site during the RI. Two of the USTs had discharged gasoline into gas holder #2. The gas holder prevented migration of this gasoline into the groundwater. Contaminated fill from within the holder was excavated and hauled off-site. Some residual soil contamination was left but does not warrant further remedial actions because of the low concentrations detected and its isolation within the holder. This residual contamination will be incorporated into an overall Site deed notice.

A soil gas survey was conducted to determine if there were volatile vapors migrating off-site and impacting receptors. Soil gas samples collected from the south, west and north property lines found that there was no subsurface impact from volatile vapors. Therefore, there will be no impact on surface receptors.

The USACOE has conducted geotechnical studies along the Passaic River waterfront at or near the Site in connection with certain flood protection projects. These studies included the drilling of borings in the Passaic River at a number of locations including areas at or near the Site. Evidence of free product and/or black staining and strong PHC odors were observed in three of these locations. The Passaic River immediately north and south of the Site is currently being investigated by a third party at the direction of, and with supervision from, the USEPA. This investigation includes an extensive series of borings, a human and ecological risk assessment, and a feasibility study. It is believed that the USACOE data are being, or will be, considered in connection with this study. It is anticipated that the USEPA-directed investigation will be completed on or by 2001.

# 9.0 RECOMMENDATIONS

### 9.1 Introduction

The remedial investigation did not complete the delineation of soil and groundwater contamination related to the Site. PSE&G proposes to conduct additional investigations to close the remaining data gaps. The proposed work, as described below and depicted on Figure 16, will require access agreements with the surrounding property owners. The NJDEP will be notified in advance of conducting the work, and an RIR Addendum will be submitted providing the results of the investigation.

### 9.2 Soils

Soil contamination in the deeper "A" horizon was not delineated to the northwest of B-35 and southeast of B-47 (MAP Enterprises property). It is proposed to collect additional delineation samples based on the highest PID reading above the clay/silt layer. One soil sample will be collected northwest of B-35 at the intersection of McCarter Highway and Lombardy Place while installing proposed monitoring wells (see Section 9.3). Three soil samples will be collected from the proposed temporary well point (TWP) locations southeast of B-47. The soil samples will be analyzed for VO+10, SVO+20 and TAL inorganics.

#### 9.3 Bedrock

The bedrock investigation adjacent to the former Ballantine Brewery property detected MGP residuals. There are written descriptions as to the location of the former production well on this property. It is proposed to install a bedrock well (MW-11BR) at the former production well's location. The bedrock will be continuously cored to a stratigraphic depth corresponding to the fractured interval noted in the former artesian well and MW-3BR (approximately 107 feet bgs). Observations will be made on the bedrock structure and presence of MGP residuals. A well will

be installed and constructed of 20 feet of open screen starting approximately 10 feet into the bedrock surface. Groundwater from this well will be sampled as described in Section 9.4.

### 9.4 Groundwater

Groundwater contamination was not fully delineated in the "A" and "B" horizons. In order to delineate the plumes, a number of temporary well points and wells are proposed.

In the "A" horizon, nine groundwater point samples are proposed along the downgradient edge of the plume. Three points are located on Parcel 1 between previously installed points and wells to close data gaps. On the MAP Enterprises property, six points are located to define the plume toward the southeast. The points will be installed by augering to the water table and collecting a groundwater sample in accordance with Alternative Ground Water Sampling Techniques Guide (July 1994).

The groundwater samples will be analyzed for VO+10 and naphthalene.

Four wells (MW-7, MW-8, MW-9 and MW-10) will be installed in the "A" horizon following the groundwater point sampling. One well (MW-7) will be an upgradient well located at the intersection of McCarter Highway and Lombardy Place. One well (MW-8) will be located downgradient of B-26 on Parcel 1 to monitor groundwater quality in the middle of the Site along the river. One well (MW-9) will be located on the downgradient edge of the MAP Enterprise property based on TWP results. One well (MW-10) will be located adjacent to B-47 (MAP Enterprise property) to evaluate floating free product. The wells will be 2-inch PVC with the exception of MW-10, which will be 4-inch.

Four wells (MW-6A, MW-7A, MW-8A and MW-9A) will be installed in the "B" horizon to complete delineation. MW-6A and MW-7A will be paired with MW-6 and MW-7 to provide upgradient groundwater quality data. MW-8A will be paired with MW-8 to monitor

groundwater quality in the middle Parcel 1 along the river directly downgradient of P4 and P4A. MW-9A will be paired with MW-9 to assess the impact to groundwater quality in the "B" horizon.

At the completion of well installation, the proposed wells (including the bedrock well described in Section 9.3) will be sampled using the EPA's low-flow sampling technique. The samples will be analyzed for VO+10, SVO+20 and TAL inorganics. In addition, the sample from MW-6A will be analyzed for nitrate (NO<sub>3</sub>), sulfate (SO<sub>4</sub>), alkalinity, and total and dissolved iron to complete the natural attenuation assessment. The 18 existing wells and piezometers will be sampled at the same time using techniques from the Field Sampling Procedures Manual (May 1992). Groundwater samples collected from the existing wells will be analyzed for VO+10 and naphthalene only based on previous investigations. Quality control samples will include trip blanks, field blanks and duplicates.

### 9.5 RIR Addendum

The data collected will be used to: revise soil contamination maps to better delineate the "A" horizon; revise the groundwater contaminant isopleth maps; and to refine the aquifer model described in Section 5.7. These results will be presented to the NJDEP in an RIR Addendum.

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### Table 1

Public Service Electric and Gas Company Former Front Street Gas Works

### Groundwater Sample Data Summary

| <u> </u>    |               |                   |                |                      |                     |                  |       |         | 1     | 09/1  | 6/98  |      |       |        | 10/*  | 14/98   |
|-------------|---------------|-------------------|----------------|----------------------|---------------------|------------------|-------|---------|-------|-------|-------|------|-------|--------|-------|---------|
| Well<br>No. | Permit<br>No. | Date<br>Completed | Total<br>Depth | Screened<br>Interval | Ground<br>Elevation | TOC<br>Elevation | DTW   | WL Elev | рH    | Temp  | Cond. | DO   | Turb  | ORP    | DTW   | WL Elev |
| MW-1        | 26-51013      | 07/02/98          | 35             | 20-35                | 38.55               | 38.28            | 29.08 | 9.20    | 6.64  | 18.90 | 930   | 0.43 | 8.1   | 14.5   | 29.1  | 9.18    |
| MW-1A       | 26-51014      | 07/14/98          | 59             | 49-59                | 38.48               | 38.06            | 34.56 | 3.50    | 6.99  | 18.97 | 1049  | 0.81 | NA    | -5.4   | 30.87 | 7.19    |
| MW-2        | 26-51015      | 07/01/98          | 15.5           | 2.5-15.5             | 9.88                | 9.51             | 6.90  | 2.61    | 6.75  | 22.68 | 11358 | 2.52 | 8.2   | 8.4    | 9.01  | 0.50    |
| MW-2A       | 26-51016      | 07/28/98          | 34.5           | 24-34                | 9.86                | 9.58             | 7.02  | 2.56    | 7.17  | 17.12 | 1524  | 0.42 | 6.1   | -15.0  | 9.22  | 0.36    |
| MW-3        | 26-51017      | 06/30/98          | 14.5           | 3-14                 | 9.13                | 8.74             | 6.15  | 2.59    | 6.77  | 20.12 | 1684  | 0.37 | 6.4   | 6.5    | 8.04  | 0.70    |
| MW-3A       | 26-51018      | 07/16/98          | 29             | 24-29                | 8.82                | 8.38             | 2.65  | 5.73    | 7.28  | 15.99 | 8.24  | 0.26 | 8.0   | -22.4  | 2.43  | 5.95    |
| MW-3BR      | 26-51019      | 07/31/98          | 55             | 35-55                | 9.04                | 8.81             | 4.05  | 4.76    | 7.67  | 15.64 | 898   | 0.20 | 5.4   | -43.0  | 3.85  | 4.96    |
| MW-4BR      | 26-51020      | 08/11/98          | 62             | 42-62                | 13.53               | 13.28            | 7.65  | 5.63    | 9.23  | 17.98 | 940   | 0.75 | 3.1   | -130.0 | 8.14  | 5.14    |
| MW-5BR      | 26-51021      | 08/10/98          | 72             | 52-72                | 19.24               | 19.22            | 14.55 | 4.67    | 11.48 | 16.58 | 1074  | 0.61 | 16.0  | -262.0 | 14.6  | 4.62    |
| MW-6        | 26-51694      | 08/29/98          | 32             | 17-32                | 38.43               | 38.11            | NA    | NA      | 7.24  | 17.85 | 430   | 4.60 | 95.0  | -7.7   | 27.95 | 10.16   |
| P-1         |               | 09/18/97          | 43             | 23-43                | 37.44               | 37.07            | 27.55 | 9.52    | 6.61  | 18.88 | 1633  | 0.52 | 4.8   | 16.4   | 27.52 | 9.55    |
| P-1A        |               | 09/18/97          | 58.7           | 48.4-58.4            | 37.37               | 37.08            | 31.60 | 5.48    | 7.64  | 18.79 | 1303  | 0.48 | 7.0   | -42.1  | 32.63 | 4.45    |
| P-2         |               | 09/19/97          | 44             | 24-44                | 39.44               | 38.98            | 29.72 | 9.26    | 6.97  | 18.18 | 1468  | 0.32 | 8.0   | -3.1   | 29.67 | 9.31    |
| P-2A        |               | 09/19/97          | 70             | 60-70                | 39.31               | 39.08            | 34.18 | 4.90    | 7.76  | 18.08 | 584   | 0.33 | 6.1   | -49.7  | 35.39 | 3.69    |
| P-3         |               | 09/18/97          | 18             | 3-18                 | 10.01               | 9.77             | 5.45  | 4.32    | 6.64  | 19.65 | 2342  | 0.92 | 8.4   | 17.1   | 5.44  | 4.33    |
| P-3A        |               | 09/18/97          | 30.1           | 19.7-29.7            | 9.98                | 9.63             | 8.00  | 1.63    | 6.55  | 17.28 | 1870  | 0.30 | 140.0 | 17.5   | 6.11  | 3.52    |
| P-4         |               | 09/18/97          | 16             | 3-16                 | 10.40               | 10.13            | NA    | NA      | NS    | NS    | NS    | NS   | NS    | NS     | NA    | NA      |
| P-4A        |               | 09/18/97          | 26.2           | 16.2-26.2            | 10.53               | 10.29            | 3.61  | 6.68    | 8.8   | 18.09 | 14505 | 0.35 | 5.1   | 4.4    | 2.54  | 7.75    |

Notes:

Notes: - Elevation in feet above mean sea level (MSL) - TOC = Top of Casing - DTW = Depth to Water - WL Elev = Groundwater Elevation - Temp = Degrees Celcius - Cond = Conductivity - DO = Dissolved Oxygen - Turb - Turbidity - ORP = Oxygen Reduction Potential

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# Table 2Public Service Electric and Gas CompanyFormer Front Street Gas WorksNewark, New Jersey

# Wells Located in NJDEP One-Mile Radius Well Search

| Weli<br>Ref. # | Well<br>Permit # | Owner                                 | Total<br>Depth of<br>Well (ft) | Casing<br>Depth<br>(ft) | Approximate<br>Distance<br>from Site<br>(ft)* | Use      | Date<br>Installed |
|----------------|------------------|---------------------------------------|--------------------------------|-------------------------|-----------------------------------------------|----------|-------------------|
| 1              | 26-3140          | Barton Realty Co., Inc.               | 385                            | N/A                     | 1,800                                         | 1        | 06/10/65          |
| 2              | 26-3064          | George Welech Company                 | 300                            | 45                      | 3,200                                         | I        | 06/04/65          |
| 3              | 26-3209          | Continental Insurance Co.             | 300                            | 58                      | 2,400                                         | <u> </u> | 07/65             |
| 4              | 26-3233          | Klines Department Stores              | 400                            | 62                      | 4,000                                         | I        | 09/16/65          |
| 5              | 46-35633         | Prudential Service Company            | 717                            | N/A                     | 4,600                                         | I        | 1925              |
| 6              | 46-35634         | Prudential Service Company            | 546                            | N/A                     | 3,400                                         | I        | 06/38             |
| 7              | 26-2804          | New Jersey Rollong Mills              | 400                            | 99                      | 5,000                                         | I        | 07/06/63          |
| 8              | 26-4008          | Harrison Supply Company               | 174                            | 88                      | 3,900                                         | I        | 09/28/66          |
| 9              | 26-5159          | Englehard Industries                  | 400                            | 79                      | 3,400                                         | I        | 06/20/81          |
| 10             | 26-3532          | 550 Broad Street Associates           | 300                            | 52                      | 2,000                                         | D        | 05/12/66          |
| 11             | 26-3149          | Mutual Benefit Life Insurance Company | 312                            | 45                      | 1,200                                         | D        | 07/08/65          |
| 12             | 26-3173          | New Jersey Bell Telephone Company     | 215                            | 65                      | 1,200                                         | D        | 07/26/65          |
| 13             | 26-3777          | Prudential Insurance Company          | 324                            | 39                      | 2,400                                         | D        | 03/30/66          |
| 14             | 26-4982          | Harbak                                | 194                            | 194                     | 1,900                                         | D        | 04/17/81          |

Notes:

D - Domestic

I - Industrial / Process / Cooling / Irrigation

N/A - Information not available

\* - Measured from center of site.

#### Table 3a

Public Service Electric and Gas Company Former Front Street Gas Works

#### Surface Soll Sample Results

|                                                 |          | DATE      |           | 06/26/98 | 06/25/98 | 06/19/98     | 06/22/98 | 06/23/98   | 06/24/98 | 06/08/98  | 06/29/98       | 06/17/98   | 06/11/98    | 06/09/98          | 06/16/98       | 07/09/98  | 07/01/98     | 07/01/98  | 06/30/98     |
|-------------------------------------------------|----------|-----------|-----------|----------|----------|--------------|----------|------------|----------|-----------|----------------|------------|-------------|-------------------|----------------|-----------|--------------|-----------|--------------|
|                                                 |          | DEPTH (FT | 8G\$)     | 1-1.5    | 0-0.5    | 0-6"         | 0-0.5    | 1-1.5      | 0-0.5    | 0-0.5     | 1-1.5          | 1-1.5'     | 1.5-2       | 0-0.5             | 3.5-4'         | 0-0.5'    | 4-4.5        | 1-1.5'    | 0-0.5        |
| ANALYSIS:                                       |          | SAMPLE NO | •         | B-11     | B-12     | B-13         | B-14     | B-15       | B-16     | B-17      | B-18           | B-19       | B-20        | 8-22              | 8-23           | B-26      | MW-1         | MW-2      | MW-3         |
| ANAL / 313.                                     | RDC      | NRDC      | IGW       |          |          | 0.10         |          |            |          |           |                |            |             |                   |                |           |              |           |              |
| PAHs:                                           | Criteria | Criteria  | Criteria  |          |          |              |          |            |          |           |                |            |             |                   |                |           |              |           |              |
| Naphthalene                                     | 230      | 4200      | 100       | 110 J    | 5.5      | ND           | B.4      | 0.064 J    | ND       | 4.7       | 0.34 J         | 36         | 0.67        | 0.043 J           | 0.14 J         | 7.1       | 4.6          | 1.5 J     | 0.65 J       |
| 2-Methylnaphthalene                             | NS       | NS        | NS        | 88 J     | 0.95     | ND           | 3.1 J    | 0.11 J     | ND       | 4         | 0.69           | 87         | 1.3         | ND                | 0.31 J         | 13        | 7.9          | 1.6 J     | ND           |
| Acenaphthylene                                  | NS       | NS        | NS        | 140 J    | 0.24 J   | ND           | 17       | 0.29 J     | 220 J    | 20        | 0.13 J         | 26         | 0.46        | 0.045 J           | 1.1            | 58        | 2.2 J        | 16 J      | 0.43 J       |
| Acenaphthene                                    | 3400     | 10000     | 100       | 25       | NĎ       | ND           | 1.4 J    | 0.044 J    | ND       | 2.8 J     | 0.17 J         | 5.6        | 0.22 J      | ND                | 0.31 J         | 9.9       | 4.3          | 1.8       | ND           |
| Fluorene                                        | 2300     | 10000     | 100       | 79 J     | ND       | ND           | 4.7      | 0.22 J     | ND       | 10        | 0.5            | 54         | 0.74        | 0.31 J            | 0.79           | 26<br>430 | 7.3          | 2.2<br>83 | ND<br>1.4 J  |
| Phenanthrene                                    | NS       | NS        | NS        | 1,100    | 1.9      | 0.087 J      | 40       | 0.71       | 53 J     | 150       | 2.7            | 260        | 5.7<br>0.56 | 0.22 J<br>0.041 J | 5.6            | 430<br>93 | 35<br>6,3    | 13        | ND           |
| Anthracene                                      | 10000    | 10000     | 100       | 210      | 0.20 J   | ND           | 16       | 0.22 J     | ND       | 29        | 0.3 J          | 38<br>150  | 4           | 0.041 J           | 4.7            | 93<br>370 | 22           | 260       | 3.1 J        |
| Fluoranthene                                    | 2300     | 10000     | 100       | 1,000    | 1.5      | 0.10 J       | 60       | 0.75       | 200 J    | 180       | 1.5            | 220        | 56          | 0.45              | 6.8            | 370       | 42           | 500       | 3.1J<br>3.1J |
| Pyréne                                          | 1700     | 10000     | 100       | 1,200    | 1.4      | 0.17 J       | 82       | 1.3        | 300 J    | 150       | 0.81           | 81         | 2           | 0.59<br>0.25 J    | 3.1            | 160       | 42           | 84        | 3.1J         |
| Benzo(a)anthracene                              | 0.9      | 4         | 500       | 540      | 0.93     | 0.089 J      | 48       | 0.6        | 170 J    | 85        | 0.94           | 81         | 2.4         | 0.25 J            | 3.5            | 140       | 14           | 78        | 2.1 J        |
| Chrysene                                        | 9        | 40        | 500<br>50 | 460      | 1.2      | 0.11 J<br>ND | 40<br>83 | 0.67       | 620      | /9<br>110 | 0.94           | 65         | 2.4         | 0.62              | 3.5            |           | 8.4          | 3 100 a   | 2.1.1        |
| Benzo(b)fluoranthene                            | 0.9      | 4         | 500       | ND       | 0.58     | ND<br>ND     | 30       | 0.18 J     | 200 J    | 37        | 0.04<br>0.21 J | 20         | 0.84        | 0.62              | 2.00.0         |           | 4.8          | ND        | 0.84 J       |
| Benzo(k)fluoranthene                            | 0.9      | 0.66      | 100       | 360      | 0.96     | ND           | 84       | 0.6        | 550      | 70        | 0.61           | 68         | 2 2 3       | 0.26 J            | 3              |           | 9.71         | 85        | 1.8.1        |
| Benzo(a)pyrene                                  | 0.00     | 4         | 500       | 230      | 1.1      | ND           | 1.2432   | 0.28 J     | 500      | 58        | 0.35 J         | 38         | 2 3         | 0.34 J            | - 2.1          | 95        | 5.8          | 88        | 1.4.1        |
| Indeno(1,2,3-cd)pyrene<br>Dibenz(a,h)anthracene | 0.9      | 0.66      | 100       | 31       | 0.31 J   | ND           | 2.8 J    | 0.087 J    | 140 J    | 12        | 0.11 J         | 3.4        | 0.44        | 0.086 J           | 0,54           | 12        | 144 4 6 m    | 8.8       | ND           |
| Benzo(a,h,i)perviene                            | NS       | NS        | NS        | 210      | 1.1      | ND           | 28       | ND         | 570      | 44        | 0.37           | 44         | 2           | 0.37              | 2.1            | 79        | 3.4 J        | 97        | 111          |
| Denzo(g.n.)perviene                             | 1 113    | 1 10      |           |          | L        |              |          |            | 1        | L         | £              | ) interest |             | م                 | daana Dissaana |           | 1            |           |              |
| VOCs:                                           |          |           |           |          |          |              |          |            |          |           |                |            |             |                   |                |           |              |           |              |
| Benzene                                         | 3        | 13        | 1         | 3        | 1.4      | ND           | 1.2      | NO         | ND       | ND        | ND             | 0.33 J     | ND          | ND                | ND             | 0.49 J    | ND           | ND        | ND           |
| Toluene                                         | 1000     | 1000      | 500       | 3.8      | 6        | ND           | 1.5      | NO         | ND       | ND        | ND             | 0.41 J     | ND          | ND                | ND             | 0.88      | ND           | ND        | ND           |
| Ethylbenzene                                    | 1000     | 1000      | 100       | ND       | 0.67 J   | ND           | 0.17 J   | ND         | ND       | ND        | ND             | ND         | ND          | ND                | ND             | 0.24 J    | ND           | ND        | ND           |
| Xyiene                                          | 410      | 1000      | 10        | 2.7      | 8.1      | ND           | 1.3      | ND         | ND       | ND        | ND             | 1.4        | ND          | ND                | ND             | 0.99      | ND           | ND        | 0.73 J       |
| Styrene                                         | 23       | 97        | 100       | 0.37 J   | ND       | ND           | 0.21 J   | ND         | ND       | ND        | ND             | ND         | ND          | ND                | ND             | ND        | ND           | ND        | ND           |
| 1,1,1 - Trichloroethane                         | 210      | 1000      | 50        | ND       | ND       | ND           | ND       | 0.30 J     | ND       | ND        | ND             | ND         | ND          | ND                | ND             | ND        | ND           | ND        | ND           |
| In a month Elementer                            |          |           |           |          |          |              |          |            |          |           |                |            |             |                   |                |           |              |           |              |
| Inorganic Elements:                             | 110      | 4100      | NS        | ND       | 0.90 J   | ND           | ND       | ND         | ND       | ND        | ND             | ND         | ND          | ND                | ND             | 1.58 J    | ND           | ND        | 24           |
| Arsenic                                         | 20       | 20        | NS        | 7.8      | 32.1     | 2.4          | 7.1      | 2.4        | 2.3      | 7.2       | 2.4            | 8.7        | 8.1         | 1.9               | 3              | 12        | 2.1          | 8.8       | 23.1         |
| Barium                                          | 700      | 47000     | NS        | 82       | 106      | 69           | 118      | 62         | 57       | 54        | 68             | 62         | 71          | 54                | 62             | 119       | 52           | 131       | 590          |
| Beryllium                                       | 1        | 1         | NS        | ND       | 0.22 J   | 0.34 J       | 0.23 J   | 0.51 J     | 0.36 J   | ND        | 0.5 J          | 0.31 J     | 0.42 J      | 0.34 J            | 0.28 J         | 0.32 J    | 0.38 J       | ND        | ND           |
| Cadmium                                         | 39       | 100       | NS        | NO       | ND       | ND           | ND       | ND         | ND       | ND        | ND             | ND         | ND          | ND                | ND             | 0.21 J    | ND           | 0.33 J    | 2.25 J       |
| Chromium                                        | 78000    | 78000     | NS        | 7.9      | 10.7     | 13           | 11.3     | 15.2       | 10.9     | 11.3      | 13.7           | 45.5       | 11.9        | 11.4              | 7.9            | 21.5      | 15.8         | 17.4      | 48.4         |
| Copper                                          | 600      | 600       | NS        | 21.3     | 308      | 25.9         | 39       | 41.3       | 29.5     | 184       | 27.6           | 92.5       | 47.9        | 29.6              | 69.3           | 681       | 32.1         | 173       | 8,930        |
| Thallium                                        | 2        | 2         | NS        | 2.23 J   | 7        | ND           | ND       | 1.40 J     | ND       | 1.26 J    | 2.7            | 1.04 J     | ND          | ND                | ND             | 1.92 J    | ND           | 3.2       | 7.2          |
| Mercury                                         | 14       | 270       | NS        | 0.6      | 0.46     | 0.2          | 3.7      | 1.77       | 0.2      | 5.5       | 2.6            | 4.3        | 4.1         | 5.4               | 1.42           | 1.27      | 0.17         | 1,63      | 18           |
| Nickel                                          | 250      | 2400      | NS        | 13.9     | 11.5     | 9.2          | 7.7      | 14.2       | 12.3     | 1.6 J     | 17.7           | 14.9       | 11.5        | 6.6               | 9.4            | 12.6      | 13.1         | 16.5      | 34.6         |
| Lead                                            | 400      | 600       | NS        | 100 E    | 3320 E   | 72.4         | 514      | 95.1       | 141      | 262       | 53.6 E         | 155        | 394         | 82.5              | 1090           | 5280      | 59.3         | 371       | 117,000      |
| Antimony                                        | 14       | 340       | NS        | ND       | 36       | ND           | ND       | ND         | 13.5 J   | ND        | ND             | ND         | ND          | ND                | ND             | 72        | ND           | ND        | 1,190        |
| Selenium                                        | 63       | 3100      | NS        | 3.2      | 9.2      | ND           | 2.3      | ND         | 0.72 J   | 0.65 J    | 0.94 J         | ND         | 0.52 J      | ND                | ND             | 0.93 J    | ND           | 2.4       | 6.2          |
| Vanadium                                        | 370      | 7100      | NS        | 19.2     | 21.3     | 20.6         | 17.3     | 23.1       | 21.8     | 12.3      | 20             | 31.3       | 15.9<br>59  | 13.6              | 12.2           | 20        | 19           |           | 13.1         |
| Zinc                                            | 1500     | 1500      | NS        | 27       | 70       | 110<br>ND    | 51       | 63<br>1.73 | 53       | 19<br>691 | 42<br>ND       | 4.97       | 9.74        | 0.18              | ND             | 8.76      | 42<br>0.11 J | 4910      | 2,950        |
| Cyanide                                         | 1100     | 21000     | NS        | 2.32     | 0.98     | I NU         | 15.9     | 1.13       | 1 11.9   | 091       | J NU           | 1. 4.37    | 3.14        | 0.10              |                | 1 0.10    | 1.0.113      | 1.20      | 1 10.7       |

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#### Notes:

All results are shown in mg/kg. B ≈ Analyte detected in Field Blank. D ≈ Sample diluted prior to analysis. E ≈ Estimated value due to interference.

J = Detected below method detection limit. FT BGS = Feet Below Ground Surface

NA = Not Analyzed for this parameter

ND = Not Detected

NS = No Soil Cleanup Criteria. Shaded/bold = Parameter exceeds most stringent SCC.

Public Service Electric and Gas Company Former Front Street Gas Works

#### "A" Horizon Soil Sample Results

|                                                                                                                                             |                                                                                  | DATE<br>DEPTH (FT                                                                                      | BGS)                                                                 | 06/26/98<br>5-5.5'                                                                                   | 06/26/98<br>9.5-10                                                                             | 06/25/98<br>5.5-6'                                                                                                  | 06/25/98<br>19.5-20                                                                                    | 06/19/98<br>15.5-16                                                                                                                                                                      | 06/19/98<br>18.5-19                                                                                 | 06/22/98<br>4.5-5'                                                                                             | 06/22/98<br>9.5-10                                                                          | 06/23/98<br>3.5-4'                                                                                       | 06/23/98<br>12-12.5                                                                                       | 06/23/98<br>12-12.5'                                                                         | 06/24/98<br>3.5-4'                                                                                              | 06/24/98<br>11-11.5                                                                                          | 06/08/98<br>18.5-19                                                                           | 06/08/98<br>25.5-26                                                                            | 06/29/98                                                                                              | 06/29/98<br>21-21.5                                                                                        |
|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| ANALYSIS:                                                                                                                                   |                                                                                  | SAMPLE NO                                                                                              | <b>)</b> .                                                           | B-11                                                                                                 | B-11                                                                                           | B-12                                                                                                                | B-12                                                                                                   | B-13                                                                                                                                                                                     | 8-13                                                                                                | B-14                                                                                                           | B-14                                                                                        | 8-15                                                                                                     | B-15                                                                                                      | Dup(B-15)                                                                                    | B-16                                                                                                            | B-16                                                                                                         | B-17                                                                                          | B-17                                                                                           | B-18                                                                                                  | B-18                                                                                                       |
| Anna I Gros                                                                                                                                 | RDC                                                                              | NRDC                                                                                                   | IGW                                                                  | 1                                                                                                    |                                                                                                |                                                                                                                     |                                                                                                        |                                                                                                                                                                                          | T                                                                                                   |                                                                                                                |                                                                                             |                                                                                                          |                                                                                                           |                                                                                              |                                                                                                                 |                                                                                                              |                                                                                               |                                                                                                |                                                                                                       |                                                                                                            |
| PAHs:                                                                                                                                       | Criteria                                                                         | Criteria                                                                                               | Criteria                                                             | 1                                                                                                    |                                                                                                | ĺ                                                                                                                   |                                                                                                        |                                                                                                                                                                                          | L                                                                                                   |                                                                                                                |                                                                                             |                                                                                                          |                                                                                                           |                                                                                              |                                                                                                                 | 0.35 J                                                                                                       | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Naphthalene                                                                                                                                 | 230                                                                              | 4200                                                                                                   | 100                                                                  | 0.86                                                                                                 | 9.5                                                                                            | 3000                                                                                                                | 1400                                                                                                   | 0.39                                                                                                                                                                                     | 0.081 J                                                                                             | 13                                                                                                             | <u></u>                                                                                     | 0.086 J                                                                                                  | 360                                                                                                       | 430<br>160                                                                                   | ND ND                                                                                                           | 0.069 J                                                                                                      | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| 2-Methylnaphthalene                                                                                                                         | NS                                                                               | NŚ                                                                                                     | NS                                                                   | 0.65                                                                                                 | 5.8                                                                                            | 440 J                                                                                                               | 610                                                                                                    | 0.88                                                                                                                                                                                     | ND                                                                                                  | 26                                                                                                             | 26<br>2.5 J                                                                                 | 0.19 J<br>0.081 J                                                                                        | 7.9                                                                                                       | 7.6                                                                                          | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Acenaphthylene                                                                                                                              | NS                                                                               | NS                                                                                                     | NS                                                                   | 8.1 J                                                                                                | 20                                                                                             | 360 J                                                                                                               | 33                                                                                                     | 0.22 J                                                                                                                                                                                   | ND                                                                                                  |                                                                                                                | 2.5 J<br>5.5 J                                                                              | ND                                                                                                       | 12                                                                                                        | 14                                                                                           | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Acenaphthene                                                                                                                                | 3400                                                                             | 10000                                                                                                  | 100                                                                  | 0.97                                                                                                 | 60                                                                                             | 83 J                                                                                                                | 300                                                                                                    | 0.18 J                                                                                                                                                                                   | ND                                                                                                  | 2.2 J                                                                                                          | 7.3                                                                                         | 0.15 J                                                                                                   | 19                                                                                                        | 22                                                                                           | ND                                                                                                              | 0.097 J                                                                                                      | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Fluorené                                                                                                                                    | 2300                                                                             | 10000                                                                                                  | 100                                                                  | 3.3                                                                                                  | 46                                                                                             | 340 J                                                                                                               | 150 J                                                                                                  | 0.62                                                                                                                                                                                     | ND ND                                                                                               | 12<br>34                                                                                                       | 1.3                                                                                         | 0.15 J                                                                                                   | 46                                                                                                        | 53                                                                                           | ND                                                                                                              | 0.067 J                                                                                                      | 0.049 J                                                                                       | NO                                                                                             | 0.040 J                                                                                               | ND                                                                                                         |
| Phenanthrene                                                                                                                                | NS                                                                               | NS                                                                                                     | NS                                                                   | 31                                                                                                   | 120                                                                                            | 1100                                                                                                                | 400                                                                                                    | 2.2                                                                                                                                                                                      | ND                                                                                                  | 6.6                                                                                                            | 3.5 J                                                                                       | 0.12 J                                                                                                   | 14                                                                                                        | 15                                                                                           | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Anthracerie                                                                                                                                 | 10000                                                                            | 10000                                                                                                  | 100                                                                  | 13                                                                                                   | 47                                                                                             | 360 J                                                                                                               | -110 J                                                                                                 | 0.52                                                                                                                                                                                     | ND                                                                                                  |                                                                                                                | 3.5 J                                                                                       | 0.12 J                                                                                                   | 23                                                                                                        | 26                                                                                           | ND                                                                                                              | ND                                                                                                           | 0.041 J                                                                                       | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Fluoranthene                                                                                                                                | 2300                                                                             | 10000                                                                                                  | 100                                                                  | 63                                                                                                   | 59                                                                                             | 690                                                                                                                 | 140 J                                                                                                  | 1                                                                                                                                                                                        | ND                                                                                                  | 22                                                                                                             | 19                                                                                          | 0.295                                                                                                    | 20                                                                                                        | 23                                                                                           | ND                                                                                                              | ND                                                                                                           | 0.055 J                                                                                       | ND                                                                                             | 0.045 J                                                                                               | ND                                                                                                         |
| Pyrene                                                                                                                                      | 1700                                                                             | 10000                                                                                                  | 100                                                                  | 130                                                                                                  | 120                                                                                            | 680                                                                                                                 | 170 J                                                                                                  | 1.7                                                                                                                                                                                      | ND                                                                                                  | 42                                                                                                             |                                                                                             | 0.20 J                                                                                                   | 8.5                                                                                                       | 2.5<br>9.6                                                                                   | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Benzo(a)anthracene                                                                                                                          | 0.9                                                                              | 4                                                                                                      | 500                                                                  | 40                                                                                                   | 35.00                                                                                          | 250 J                                                                                                               | 76 J                                                                                                   | 0.63                                                                                                                                                                                     | ND                                                                                                  | 17                                                                                                             | 7.7                                                                                         |                                                                                                          | 7.4                                                                                                       | 8.3                                                                                          | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    |                                                                                                            |
| Chrysene                                                                                                                                    | 9                                                                                | 40                                                                                                     | 500                                                                  | 36 99                                                                                                | 34 🔬                                                                                           | 210 J                                                                                                               | 68 J 🗠                                                                                                 | 0.72                                                                                                                                                                                     | ND                                                                                                  | 19                                                                                                             | 8.6                                                                                         | 0.23 J                                                                                                   | 1.4<br>B,4                                                                                                | 0.3<br>8.9                                                                                   | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Benzo(b)fluoranthene                                                                                                                        | 0.9                                                                              | 4                                                                                                      | 50                                                                   | 33 🐢                                                                                                 | 19                                                                                             | 210 J                                                                                                               | 45                                                                                                     | 0.47                                                                                                                                                                                     | ND                                                                                                  | 21                                                                                                             | 11                                                                                          | 0.15 J<br>0.045 J                                                                                        | 3.1 J                                                                                                     | 3.0 J                                                                                        | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND ND                                                                                          | ND                                                                                                    | ND                                                                                                         |
| Benzo(k)fluoranthene                                                                                                                        | 0.9                                                                              | 4                                                                                                      | 500                                                                  | 17.35                                                                                                | 8,7                                                                                            | 51                                                                                                                  | 15                                                                                                     | 0.21 J                                                                                                                                                                                   | ND                                                                                                  | 8.5                                                                                                            | <u>3.8 J</u>                                                                                |                                                                                                          | 3.13                                                                                                      | 8.9                                                                                          | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Benzo(a)pyrene                                                                                                                              | 0.66                                                                             | 0.66                                                                                                   | 100                                                                  | 32                                                                                                   | 26                                                                                             | 210 J                                                                                                               | 65 65                                                                                                  | 0.52                                                                                                                                                                                     | ND                                                                                                  | 20                                                                                                             | 10                                                                                          | 0.15 J                                                                                                   | 2.7 J                                                                                                     | 4.7                                                                                          | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | NO                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Indeno(1,2,3-cd)pyrene                                                                                                                      | 0.9                                                                              | 4                                                                                                      | 500                                                                  | 4 <b>29</b> 🥯                                                                                        | · 12 公司                                                                                        | 120 J                                                                                                               | 24                                                                                                     | 0.19 J                                                                                                                                                                                   | ND                                                                                                  | 8.5                                                                                                            | 4.1J                                                                                        | ND                                                                                                       |                                                                                                           |                                                                                              | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Dibenz(a,h)anthracene                                                                                                                       | 0.66                                                                             | 0.66                                                                                                   | 100                                                                  | A 2.8 %                                                                                              | 7.2                                                                                            | 21                                                                                                                  | 7.8                                                                                                    | ND                                                                                                                                                                                       | ND                                                                                                  | 24J                                                                                                            | ND                                                                                          | ND                                                                                                       | 0,72 J                                                                                                    | ND 1.2 J                                                                                     | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Benzo(g,h,i)perviene                                                                                                                        | NS                                                                               | NS                                                                                                     | NS                                                                   | 25                                                                                                   | 8.9                                                                                            | 100 J                                                                                                               | 22                                                                                                     | ND                                                                                                                                                                                       | ND                                                                                                  | 7.5                                                                                                            | 3.6 J                                                                                       | 0.042 J                                                                                                  | ND                                                                                                        |                                                                                              |                                                                                                                 |                                                                                                              | 1 (467                                                                                        | 1                                                                                              | 1 110                                                                                                 | 1                                                                                                          |
| VOCs:                                                                                                                                       | 1 3                                                                              | 1 13                                                                                                   | 1                                                                    | 2.6                                                                                                  | 6.7                                                                                            | 67 67                                                                                                               | 4.8 1                                                                                                  | ND                                                                                                                                                                                       | 0.39 J                                                                                              | 0.47 J                                                                                                         | 2.4                                                                                         | ND                                                                                                       | 14                                                                                                        | 8.4                                                                                          | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Benzene                                                                                                                                     | 1000                                                                             | 1000                                                                                                   | 500                                                                  | 1.8                                                                                                  | 7.5                                                                                            | 72                                                                                                                  | ND                                                                                                     | ND                                                                                                                                                                                       | ND                                                                                                  | 0.51 J                                                                                                         | 0.39 J                                                                                      | ND                                                                                                       | 0.46 J                                                                                                    | 0.30 J                                                                                       | ND                                                                                                              | 0.25 J                                                                                                       | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Toluene                                                                                                                                     | 1000                                                                             | 1000                                                                                                   | 100                                                                  | ND                                                                                                   | 12                                                                                             | 25                                                                                                                  | S140 S                                                                                                 | ND                                                                                                                                                                                       | ND                                                                                                  | ND                                                                                                             | 33                                                                                          | ND                                                                                                       | 43                                                                                                        | 25                                                                                           | ND                                                                                                              | 0.78                                                                                                         | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Ethylbenzene                                                                                                                                | 410                                                                              | 1000                                                                                                   | 10                                                                   | 0.80 J                                                                                               | 7.5                                                                                            | 140                                                                                                                 | 140                                                                                                    | ND                                                                                                                                                                                       | ND                                                                                                  | 1.6                                                                                                            | 12                                                                                          | ND                                                                                                       | S 90                                                                                                      | -* * <b>59</b> - K                                                                           | ND                                                                                                              | 0.99                                                                                                         | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Xylene                                                                                                                                      | 23                                                                               | 97                                                                                                     | 100                                                                  | ND                                                                                                   | NO                                                                                             | 15                                                                                                                  | ND                                                                                                     | ND                                                                                                                                                                                       | ND                                                                                                  | 0.29 J                                                                                                         | ND                                                                                          | ND                                                                                                       | ND                                                                                                        | ND                                                                                           | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Styrene                                                                                                                                     | 210                                                                              | 1000                                                                                                   | 50                                                                   | ND                                                                                                   | ND                                                                                             | ND                                                                                                                  | ND                                                                                                     | ND                                                                                                                                                                                       | ND                                                                                                  | 4                                                                                                              |                                                                                             | 1 4475                                                                                                   |                                                                                                           |                                                                                              |                                                                                                                 |                                                                                                              | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| 1,1,1 - Trichloroethane                                                                                                                     |                                                                                  | 1.000                                                                                                  |                                                                      |                                                                                                      |                                                                                                |                                                                                                                     | NU                                                                                                     |                                                                                                                                                                                          | IND IND                                                                                             | ND                                                                                                             | ND                                                                                          | ND                                                                                                       | ND                                                                                                        | ND                                                                                           | ND                                                                                                              | ND                                                                                                           | L PRL2                                                                                        |                                                                                                |                                                                                                       |                                                                                                            |
| to a second a find a second in                                                                                                              |                                                                                  |                                                                                                        |                                                                      | 10                                                                                                   | 1 10                                                                                           | 1 10                                                                                                                | NU                                                                                                     | 1                                                                                                                                                                                        |                                                                                                     | <u>NU</u>                                                                                                      | ND                                                                                          | <u>] NU</u>                                                                                              |                                                                                                           | ND                                                                                           |                                                                                                                 | ND                                                                                                           | I ND                                                                                          |                                                                                                |                                                                                                       |                                                                                                            |
|                                                                                                                                             |                                                                                  |                                                                                                        |                                                                      | 1 110                                                                                                |                                                                                                |                                                                                                                     |                                                                                                        | 1                                                                                                                                                                                        |                                                                                                     |                                                                                                                |                                                                                             | J                                                                                                        |                                                                                                           |                                                                                              |                                                                                                                 | A                                                                                                            | , L.,                                                                                         | · · · · · · · · · · · · · · · · · · ·                                                          | 1                                                                                                     |                                                                                                            |
| Inorganic Elements:                                                                                                                         | 1 110                                                                            | 4100                                                                                                   | I NS                                                                 | NO                                                                                                   | ND                                                                                             | ND                                                                                                                  | ND                                                                                                     | ND                                                                                                                                                                                       | ND                                                                                                  | ND                                                                                                             | ND                                                                                          | ND                                                                                                       | NO                                                                                                        | ND                                                                                           | ND                                                                                                              | ND                                                                                                           | ND                                                                                            | ND                                                                                             | ND                                                                                                    | ND                                                                                                         |
| Silver                                                                                                                                      | 110                                                                              | 4100                                                                                                   | NS<br>NS                                                             | _1                                                                                                   | k                                                                                              |                                                                                                                     | ND<br>1.2                                                                                              | ND<br>1.8                                                                                                                                                                                | ND<br>1.7                                                                                           | ND<br>3.7                                                                                                      | ND<br>8.1                                                                                   | ND<br>2.1                                                                                                | NO<br>1.4                                                                                                 | ND<br>1.6                                                                                    | ND<br>1.5                                                                                                       | ND<br>0.77 J                                                                                                 | ND<br>1.6                                                                                     | ND<br>ND                                                                                       | 1.3                                                                                                   | 0.61 J                                                                                                     |
| Silver<br>Arsenic                                                                                                                           | 110<br>20<br>700                                                                 |                                                                                                        |                                                                      | ND<br>2.4<br>22                                                                                      | ND<br>7.7<br>35                                                                                | ND<br>7.8<br>107                                                                                                    | ND<br>1.2<br>29                                                                                        | ND<br>1.8<br>66                                                                                                                                                                          | ND<br>1.7<br>38                                                                                     | ND<br>3.7<br>69                                                                                                | ND<br>8.1<br>44                                                                             | ND<br>2.1<br>44                                                                                          | NO<br>1.4<br>40                                                                                           | ND<br>1.6<br>37                                                                              | ND<br>1.5<br>66                                                                                                 | ND<br>0.77 J<br>23                                                                                           | ND<br>1.6<br>28                                                                               | ND<br>ND<br>10.1 J                                                                             | 1.3<br>47                                                                                             | 0.61 J<br>12                                                                                               |
| Silver<br>Arsenic<br>Barium                                                                                                                 | 20                                                                               | 20                                                                                                     | NS                                                                   | ND<br>2.4                                                                                            | ND<br>7.7<br>35<br>0.36 J                                                                      | ND<br>7.8<br>107<br>0.99                                                                                            | ND<br>1.2<br>29<br>0.31 J                                                                              | ND<br>1.8<br>65<br>0.54 J                                                                                                                                                                | ND<br>1.7<br>38<br>0.38 J                                                                           | ND<br>3.7<br>69<br>0.44 J                                                                                      | ND<br>8.1<br>44<br>ND                                                                       | ND<br>2.1<br>44<br>0.47 J                                                                                | NO<br>1.4<br>40<br>0.40 J                                                                                 | ND<br>1.6<br>37<br>0.29 J                                                                    | ND<br>1.5<br>66<br>0.7                                                                                          | ND<br>0.77 J<br>23<br>ND                                                                                     | ND<br>1.6<br>28<br>0.32 J                                                                     | ND<br>ND<br>10.1 J<br>ND                                                                       | 1.3<br>47<br>0.46 J                                                                                   | 0.61 J                                                                                                     |
| Silver<br>Arsenic<br>Barium<br>Beryllium                                                                                                    | 20                                                                               | 20<br>47000                                                                                            | NS<br>NS<br>NS<br>NS                                                 | ND<br>2.4<br>22                                                                                      | ND<br>7.7<br>35<br>0.36 J<br>ND                                                                | ND<br>7.8<br>107<br>0.99<br>ND                                                                                      | ND<br>1.2<br>29<br>0.31 J<br>ND                                                                        | ND<br>1.8<br>66<br>0.54 J<br>ND                                                                                                                                                          | ND<br>1.7<br>38<br>0.38 J<br>ND                                                                     | ND<br>3.7<br>69<br>0.44 J<br>ND                                                                                | ND<br>8.1<br>44<br>ND<br>ND                                                                 | ND<br>2.1<br>44<br>0.47 J<br>ND                                                                          | NO<br>1.4<br>40<br>0.40 J<br>ND                                                                           | ND<br>1.6<br>37<br>0.29 J<br>ND                                                              | ND<br>1.5<br>66<br>0.7<br>ND                                                                                    | ND<br>0.77 J<br>23<br>ND<br>ND                                                                               | ND<br>1.6<br>28<br>0.32 J<br>ND                                                               | ND<br>ND<br>10.1 J<br>ND<br>ND                                                                 | 1.3<br>47<br>0.46 J<br>ND                                                                             | 0.61 J<br>12<br>0.25 J<br>ND                                                                               |
| Silver<br>Arsenic<br>Barium<br>Beryllium<br>Cadmium                                                                                         | 20<br>700<br>1                                                                   | 20<br>47000<br>1                                                                                       | NS<br>NS<br>NS                                                       | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4                                                               | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30                                                          | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1                                                                              | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12                                                                  | ND<br>1.8<br>66<br>0.54 J<br>ND<br>17.4                                                                                                                                                  | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5                                                              | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25.9                                                                        | ND<br>8.1<br>44<br>ND<br>ND<br>15.4                                                         | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6                                                                  | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1                                                                   | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2                                                      | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6                                                                            | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8                                                                        | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6                                                        | ND<br>ND<br>10.1 J<br>ND<br>ND<br>5.1                                                          | 1.3<br>47<br>0.46 J<br>ND<br>13.3                                                                     | 0.61 .<br>12<br>0.25 .<br>ND<br>4.7                                                                        |
| Silver<br>Arsenic<br>Barium<br>Beryllium<br>Cadmium<br>Chromium                                                                             | 20<br>700<br>1<br>39                                                             | 20<br>47000<br>1<br>100                                                                                | NS<br>NS<br>NS<br>NS<br>NS<br>NS                                     | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4<br>66.3                                                       | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6                                                  | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8                                                                      | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3                                                          | ND<br>1.8<br>66<br>0.54 J<br>ND<br>17.4<br>30.9                                                                                                                                          | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26                                                        | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25.9<br>52.6                                                                | ND<br>8.1<br>44<br>ND<br>ND<br>15.4<br>36.7                                                 | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1                                                          | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3                                                           | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1                                              | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8                                                                    | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4                                                                | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4                                                 | ND<br>ND<br>10.1 J<br>ND<br>ND<br>5.1<br>3.93 J                                                | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9                                                             | 0.61 .<br>12<br>0.25 .<br>ND<br>4.7<br>4.00 .                                                              |
| Silver<br>Arsenic<br>Barium<br>Beryllium<br>Cadmium<br>Chromium<br>Chromium                                                                 | 20<br>700<br>1<br>39<br>78000                                                    | 20<br>47000<br>1<br>100<br>78000<br>600<br>2                                                           | NS<br>NS<br>NS<br>NS<br>NS                                           | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4                                                               | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6                                                  | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26 J                                                            | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3                                                   | ND<br>1.8<br>65<br>0.54 J<br>ND<br>17.4<br>30.9<br>NO                                                                                                                                    | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND                                                  | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25.9<br>52.6<br>ND                                                          | ND<br>8.1<br>44<br>ND<br>ND<br>15.4<br>36.7<br>ND                                           | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J                                                | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J                                                 | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.97 J                                    | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8                                                                    | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4<br>ND                                                          | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND                                           | ND<br>ND<br>10.1 J<br>ND<br>ND<br>5.1<br>3.93 J<br>ND                                          | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5                                                      | 0.61<br>12<br>0.25<br>ND<br>4.7<br>4.00                                                                    |
| Silver<br>Arsenic<br>Barium<br>Berylikum<br>Cadmium<br>Chromium<br>Chromium<br>Copper<br>Thallium                                           | 20<br>700<br>1<br>39<br>78000<br>600                                             | 20<br>47000<br>1<br>100<br>78000<br>600                                                                | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS                         | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4<br>66.3<br>2.19 J<br>0.0962 J                                 | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6<br>30<br>43.6<br>0.54                            | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26 J<br>0.116 J                                                 | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3<br>0.0297 J                                       | ND<br>1.8<br>65<br>0.54 J<br>ND<br>17.4<br>30.9<br>∛ NO<br>0.19                                                                                                                          | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J                                      | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25 9<br>52.6<br>ND<br>2                                                     | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1                                            | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2                                         | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J                                     | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.97 J<br>0.0066 J                        | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8<br><b>3.2</b><br>0.0055 J                                          | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4<br>ND<br>ND                                                    | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17                                   | ND<br>ND<br>10.1 J<br>ND<br>5.1<br>3.93 J<br>ND<br>0.0161 J                                    | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5<br>0.0392 J                                          | 0.61 .<br>12<br>0.25 .<br>ND<br>4.7<br>4.00 .<br>1.44 .<br>0.0048                                          |
| Silver<br>Arsenic<br>Barium<br>Beryllium<br>Cadmium<br>Chromium<br>Chromium                                                                 | 20<br>700<br>1<br>39<br>78000<br>600<br>2                                        | 20<br>47000<br>1<br>100<br>78000<br>600<br>2                                                           | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS                         | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4<br>66 3<br>0.0962 J<br>25 5                                   | ND<br>7,7<br>36<br>0,36 J<br>ND<br>30<br>43,6<br><b>3,3</b><br>0,54<br>51                      | ND<br>78<br>107<br>0.99<br>ND<br>18.1<br>20.8<br><b>2.26.J</b><br>0.116 J<br>19.4                                   | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3<br>0.0297 J<br>8.7                                | ND<br>1.8<br>65<br>0.54 J<br>ND<br>17.4<br>30.9<br>№<br>NO<br>0.19<br>14.5                                                                                                               | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J<br>11.4                              | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25 9<br>52.6<br>ND<br>2<br>18.1                                             | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1<br>14.3                                    | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2<br>13.4                                 | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J<br>11.2                             | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.97 J<br>0.0066 J<br>9.7                 | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8<br>3.2<br>0.0055 J<br>17.3                                         | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4<br>ND<br>ND<br>6.0 J                                           | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17<br>6.5                            | ND<br>ND<br>10.1 J<br>ND<br>5.1<br>3.93 J<br>ND<br>0.0161 J<br>3.7 J                           | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.6<br>0.0392 J<br>15.7                                  | 0.61 J<br>12<br>0.25 J<br>ND<br>4.7<br>4.00 J<br>* 1.44 J<br>0.0048<br>4.3 J                               |
| Silver<br>Arsenic<br>Barium<br>Berylikum<br>Cadmium<br>Chromium<br>Copper<br>Thallium<br>Mercury                                            | 20<br>700<br>1<br>39<br>78000<br>600<br>2<br>14                                  | 20<br>47000<br>1<br>100<br>78000<br>600<br>2<br>270<br>2400<br>600                                     | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS                   | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4<br>66 3<br>2.18 J<br>0.0962 J<br>25 5<br>44 E                 | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6<br>33<br>30<br>43.6<br>0.54<br>51<br>56.5 E      | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26<br>0.116 J<br>19.4<br>60.8 E                                 | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3<br>0.0297 J<br>8.7<br>7 E                         | ND<br>1.8<br>65<br>0.54 J<br>ND<br>17.4<br>30.9<br>NO<br>0.19<br>14.5<br>24.4                                                                                                            | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J<br>11.4<br>39.9                      | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25 9<br>52.6<br>ND<br>2<br>2<br>18.1<br>166                                 | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1<br>1.4.3<br>189                            | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2<br>13.4<br>41.9                         | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J<br>11.2<br>34.2                     | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.97 J<br>0.0066 J<br>9.7<br>7.8          | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8<br><b>3.2</b><br>0.0055 J<br>17.3<br>7.6 E                         | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4<br>ND<br>6.0 J<br>3.2                                          | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17<br>6.5<br>5.7                     | ND<br>ND<br>10.1 J<br>ND<br>5.1<br>3.93 J<br>ND<br>0.0161 J<br>3.7 J<br>3.2                    | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5<br>0.0392 J<br>15.7<br>6.8 E                         | 0.61 J<br>12<br>0.25 J<br>ND<br>4.7<br>4.00 J<br>* 1.44 J<br>0.0048<br>4.3 J<br>2.3 E                      |
| Silver<br>Arsenic<br>Barium<br>Berylkum<br>Cadmium<br>Chromium<br>Copper<br>Thallium<br>Mercury<br>Nickel                                   | 20<br>700<br>1<br>39<br>78000<br>600<br>2<br>14<br>250<br>400<br>14              | 20<br>47000<br>1<br>100<br>78000<br>600<br>2<br>270<br>2400<br>600<br>340                              | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS       | ND<br>2.4<br>22<br>0.26 J<br>ND<br>6.4<br>66.3<br>0.0962 J<br>2.5.5<br>44 E<br>ND                    | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6<br>33<br>43.6<br>().54<br>51<br>56.5 E<br>ND     | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26 J<br>0.116 J<br>19.4<br>60.8 E<br>ND                         | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>0.0297 J<br>8.7<br>7 E<br>ND                          | ND<br>1.8<br>65<br>0.54 J<br>ND<br>17.4<br>30.9<br>№ NO<br>0.19<br>14.5<br>24.4<br>ND                                                                                                    | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J<br>11.4<br>39.9<br>ND                | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25 9<br>52.6<br>ND<br>2<br>18.1<br>166<br>ND                                | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1<br>14.3<br>189<br>ND                       | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2<br>13.4<br>41.9<br>ND                   | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J<br>11.2<br>34.2<br>ND               | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.0066 J<br>9.7<br>7.8<br>ND              | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8<br>3.2<br>0.0055 J<br>17.3<br>7.6 E<br>ND                          | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4<br>ND<br>6.0 J<br>3.2<br>ND                                    | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17<br>6.5<br>5.7<br>ND               | ND<br>ND<br>101 J<br>ND<br>5.1<br>3 93 J<br>ND<br>0.0161 J<br>3.7 J<br>3.2<br>ND               | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5<br>0.0392 J<br>15.7<br>6.8 E<br>ND                   | 0.61 .<br>12<br>0.25 .<br>ND<br>4.7<br>4.00 .<br>1.44 .<br>0.0048<br>4.3 J<br>2.3 E<br>ND                  |
| Silver<br>Arsenic<br>Barium<br>Berylium<br>Cadmium<br>Chromium<br>Chromium<br>Chromium<br>Chromium<br>Chromium<br>Mercury<br>Nickel<br>Lead | 20<br>700<br>1<br>39<br>78000<br>600<br>2<br>14<br>250<br>400<br>14<br>63        | 20<br>47000<br>1<br>100<br>78000<br>600<br>2<br>270<br>2400<br>600<br>600<br>340<br>3100               | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4<br>66 3<br>2.19 J<br>0.0962 J<br>25 5<br>44 E<br>ND<br>1.10 J | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6<br><b>3.3</b><br>0.54<br>51<br>56.5 E<br>ND<br>5 | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26 J<br>0.116 J<br>19.4<br>60.8 E<br>ND<br>2.4                  | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3<br>0.0297 J<br>8.7<br>7 E<br>ND<br>0.72 J         | ND           1.8         66           0.54 J         ND           17.4         30.9           %         NO           0.19         14.5           24.4         ND           ND         ND | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J<br>11.4<br>39.9<br>ND<br>2.3         | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25 9<br>52 6<br>ND<br>2<br>18.1<br>166<br>ND<br>ND                          | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1<br>14.3<br>189<br>ND<br>1.8 J              | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2<br>13.4<br>41.9<br>ND<br>0.68 J         | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J<br>11.2<br>34.2<br>ND<br>ND         | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.0066 J<br>9.7<br>7.8<br>ND<br>ND        | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8<br>3.2<br>0.0055 J<br>17.3<br>7.6 E<br>ND<br>1.17 J                | ND<br>0.77 J<br>23<br>ND<br>5.8<br>15.4<br>ND<br>ND<br>6.0 J<br>3.2<br>ND<br>ND                              | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17<br>6.5<br>5.7<br>ND<br>ND         | ND<br>ND<br>10.1 J<br>ND<br>5.1<br>3.93 J<br>0.0161 J<br>3.7 J<br>3.2<br>ND<br>ND              | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5<br>0.0392 J<br>15.7<br>6.8 E<br>ND<br>0.81 J         | 0.61 J<br>12<br>0.25 J<br>ND<br>4.7<br>4.00 J<br>1.44 J<br>0.0048<br>4.3 J<br>2.3 E<br>ND<br>0.81 J        |
| Silver<br>Arsenic<br>Barium<br>Berylium<br>Cadmium<br>Chromium<br>Chromium<br>Copper<br>Thallium<br>Mercury<br>Nickel<br>Lead<br>Antimony   | 20<br>700<br>1<br>39<br>78000<br>600<br>2<br>14<br>250<br>400<br>14<br>63<br>370 | 20<br>47000<br>1<br>00<br>78000<br>600<br>2<br>270<br>2400<br>600<br>600<br>600<br>340<br>3100<br>7100 | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS | ND<br>2.4<br>22<br>0.26 J<br>8.4<br>66.3<br>0.0962 J<br>25.5<br>44 E<br>ND<br>1.10 J<br>20.1         | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6<br>33<br>43.6<br>5<br>55<br>5<br>24.6            | NO<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26<br>J<br>0.116 J<br>19.4<br>60.8 E<br>ND<br>2.4<br>2.8<br>2.4 | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3<br>0.0297 J<br>8.7<br>7 E<br>ND<br>0.72 J<br>16.4 | ND<br>1.8<br>66<br>0.54 J<br>ND<br>17.4<br>30.9<br>NO<br>0.19<br>14.5<br>24.4<br>ND<br>ND<br>32.9                                                                                        | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J<br>11.4<br>39.9<br>ND<br>2.3<br>14.8 | ND<br>3.7<br>69<br>0.44 J<br>25 9<br>52 6<br>ND<br>2<br>18.1<br>166<br>ND<br>2<br>2<br>18.1<br>166<br>ND<br>26 | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1<br>1<br>4.3<br>189<br>ND<br>1.8<br>J<br>14 | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2<br>13.4<br>41.9<br>ND<br>0.68 J<br>17.5 | ND<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J<br>11.2<br>34.2<br>ND<br>ND<br>15.6 | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.096 J<br>9.7<br>7.8<br>ND<br>ND<br>17.7 | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.6<br>19.6<br>19.8<br>0.0055 J<br>17.3<br>7.6 E<br>ND<br>1.17 J<br>22 | ND<br>0.77 J<br>23<br>ND<br>ND<br>5.8<br>15.4<br>15.4<br>15.4<br>10<br>ND<br>6.0 J<br>3.2<br>ND<br>ND<br>9.6 | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17<br>6.5<br>5.7<br>ND<br>ND<br>12.3 | ND<br>ND<br>10.1 J<br>ND<br>5.1<br>3.93 J<br>ND<br>0.0161 J<br>3.7 J<br>3.2<br>ND<br>ND<br>6.8 | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5<br>0.0392 J<br>15.7<br>6.8 E<br>ND<br>0.81 J<br>17.1 | 0.61 J<br>12<br>0.25 J<br>ND<br>4.7<br>4.00 J<br>1.44 J<br>0.0048<br>4.3 J<br>2.3 E<br>ND<br>0.81 J<br>7.5 |
| Silver<br>Arsenic<br>Barium<br>Beryllium<br>Cadmium<br>Copper<br>Thallium<br>Mercury<br>Nickel<br>Lead<br>Antimony<br>Selenium              | 20<br>700<br>1<br>39<br>78000<br>600<br>2<br>14<br>250<br>400<br>14<br>63        | 20<br>47000<br>1<br>100<br>78000<br>600<br>2<br>270<br>2400<br>600<br>600<br>340<br>3100               | NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS<br>NS | ND<br>2.4<br>22<br>0.26 J<br>ND<br>8.4<br>66 3<br>2.19 J<br>0.0962 J<br>25 5<br>44 E<br>ND<br>1.10 J | ND<br>7.7<br>35<br>0.36 J<br>ND<br>30<br>43.6<br><b>3.3</b><br>0.54<br>51<br>56.5 E<br>ND<br>5 | ND<br>7.8<br>107<br>0.99<br>ND<br>18.1<br>20.8<br>2.26 J<br>0.116 J<br>19.4<br>60.8 E<br>ND<br>2.4                  | ND<br>1.2<br>29<br>0.31 J<br>ND<br>12<br>18.3<br>2.3<br>0.0297 J<br>8.7<br>7 E<br>ND<br>0.72 J         | ND           1.8         66           0.54 J         ND           17.4         30.9           ♥         NO           0.19         14.5           24.4         ND           ND         ND | ND<br>1.7<br>38<br>0.38 J<br>ND<br>9.5<br>26<br>ND<br>0.0411 J<br>11.4<br>39.9<br>ND<br>2.3         | ND<br>3.7<br>69<br>0.44 J<br>ND<br>25 9<br>52 6<br>ND<br>2<br>18.1<br>166<br>ND<br>ND                          | ND<br>8.1<br>44<br>ND<br>15.4<br>36.7<br>ND<br>1<br>14.3<br>189<br>ND<br>1.8 J              | ND<br>2.1<br>44<br>0.47 J<br>ND<br>12.6<br>34.1<br>1.78 J<br>0.2<br>13.4<br>41.9<br>ND<br>0.68 J         | NO<br>1.4<br>40<br>0.40 J<br>ND<br>15.1<br>14.3<br>1.52 J<br>0.0066 J<br>11.2<br>34.2<br>ND<br>ND         | ND<br>1.6<br>37<br>0.29 J<br>ND<br>15.2<br>17.1<br>0.0066 J<br>9.7<br>7.8<br>ND<br>ND        | ND<br>1.5<br>66<br>0.7<br>ND<br>15.6<br>19.8<br>3.2<br>0.0055 J<br>17.3<br>7.6 E<br>ND<br>1.17 J                | ND<br>0.77 J<br>23<br>ND<br>5.8<br>15.4<br>ND<br>ND<br>6.0 J<br>3.2<br>ND<br>ND                              | ND<br>1.6<br>28<br>0.32 J<br>ND<br>9.6<br>7.4<br>ND<br>0.17<br>6.5<br>5.7<br>ND<br>ND         | ND<br>ND<br>10.1 J<br>ND<br>5.1<br>3.93 J<br>0.0161 J<br>3.7 J<br>3.2<br>ND<br>ND              | 1.3<br>47<br>0.46 J<br>ND<br>13.3<br>16.9<br>2.5<br>0.0392 J<br>15.7<br>6.8 E<br>ND<br>0.81 J         | 0.61 J<br>12<br>0.25 J<br>ND<br>4.7<br>4.00 J<br>1.44 J<br>0.0648<br>4.3 J<br>2.3 E<br>ND<br>0.81 J        |

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#### Notes:

All results are shown in mg/kg. B = Analyte detected in Field Blank. D = Sample diluted prior to analysis E = Estimated value due to interference J = Detected below method detection limit.

FT BGS = Feet Below Ground Surface NA = Not Analyzed for this parameter

ND = Not Detected

NS = No Soil Cleanup Criteria.

Shaded/bold = Parameter exceeds most stringent SCC.

Public Service Electric and Gas Company Former Front Street Gas Works

#### "A" Horizon Soil Sample Results

|                         |          | DATE       |            | 06/29/98    | 06/15/98      | 06/15/98 | 06/15/98     | 06/11/98 | 06/11/98     | 06/11/98 | 06/18/98   | 06/18/98   | 06/18/98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 06/18/98     | 06/09/98 | 06/10/98       | 06/10/96   | 06/16/98                   | 06/16/98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 06/16/98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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|                         |          | DEPTH (FT) | BGS)       | 31.5-32     | 25.5-26       | 27.5-28  | 31.5-32      | 19.5-20  | 29.5-30      | 41.5-42  | 8.5-9      | 12.5-13    | 26.5-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30-30.5'     | 21.5-22  | 25.5-26        | 31.5-32    | 25.5-26                    | 27.5-28                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 31.5-32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| ANALYSIS:               |          | SAMPLE NO  | <b>)</b> . | B-18        | B-19          | B-19     | 8-19         | B-20     | B-20         | 8-20     | 8-21       | B-21       | 8-21                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | B-21         | 8-22     | 8-22           | B-22       | B-23                       | 8-23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | B-23   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|                         | RDC      | NRDC       | IGW        |             |               |          |              |          |              |          |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| PAHs:                   | Criteria | Criteria   | Criteria   |             |               |          |              |          |              |          |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| Naphthaiene             | 230      | 4200       | 100        | 0.21 J      | 41            | ND       | 2.8          | ND       | ND           | ND       | 0.4        | 0.6        | 2400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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| 2-Methylnaphthalene     | NŜ       | NS         | NS         | ND          | 21            | ND       | 0.8          | ND       | ND           | ND       | 0.69       | 1.1        | 1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             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| Acenaphthylene          | NS       | NS         | NS         | ND          | 0.81          | ND       | 0.093 J      | ND       | ND           | NO       | 11         | 7.8        | 450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 160          | 0.24 J   | ND             | 0.049 J    | 120                        | 57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10     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| Acenaphthene            | 3400     | 10000      | 100        | ND          | 0.42          | ND       | ND           | ND       | ND           | ND       | 0.33 J     | 0.37       | 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 13 J         | 0.18 J   | ND             | ND         | 15                         | 4.4 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1.1    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| Fluorene                | 2300     | 10000      | 100        | ND          | 0,76          | 0.049 J  | 0.062 J      | 0.30 J   | ND           | ND       | 1.1        | 1.2        | 240                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 77 J         | 0.62     | ND             | 0.37 J     | 73                         | 30<br>67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 6.9    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| Phenanthrene            | NS       | NS         | NS         | 0.052 J     | 1.8           | 0.059 J  | 0.53         | 0.074 J  | ND           | ND       | 1.4        | 2.9        | 510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 160          | 0.38 J   | ND             | 0.46<br>ND | 180<br>44                  | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 29<br>9.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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| Anthracène              | 10000    | 10000      | 100        | ND          | 0.39          | 0.18 J   | ND           | ND       | ND           | ND       | 3.9        | 2.9        | 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 43 J         | 0.062 J  | ND<br>ND       | ND<br>ND   | 44                         | 18                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        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| Fluoranthene            | 2300     | 10000      | 100        | ND          | 0.73          | 0.32 J   | ND           | 0.039 J  | ND           | ND       | 2.8        | 4.2        | 120                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 43 J<br>60 J | 0.11 J   |                | ND         | 66                         | 26                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 13<br>16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| Pyrene                  | 1700     | 10000      | 100        | ND          | 0.97          | 0.34 J   | ND           | 0.066 J  | ND           | ND       | 6.6        | 10         | 200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Benzo(a)anthracene      | 0.9      | 4          | 500        | ND          | 0.29 J        | ND       | ND           | ND       | ND           | ND       | 4,5        | 6.2        | 67.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 26 J<br>21 J | 0.062 J  | ND<br>ND       | ND<br>ND   | 23                         | 8.9.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5.6    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| Chrysene                | 9        | 40         | 500        | ND          | 0.27 J        | ND       | ND           | ND       | ND           | ND       | 5.4        | 6.4        | 81                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Benzo(b)fluoranthene    | 0.9      | 4          | 50         | ND          | 0.17 J        | ND       | ND           | 0.37     | ND           | ND       | 8.9        | 7,8        | 38                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 12 12 Sec.   | 0.44     | ND             |            | Acres in the second second | distant and the second s | Supervision of the second s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Benzo(k)fluoranthene    | 0.9      | 4          | 500        | ND          | 0.061 J       | ND       | ND           | 0.31 J   | ND           | ND       | 2.9        | 2.3        | - 14 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.7          | 0,36 J   | ND             | ND<br>ND   | 4.2.3                      | 1.7 1.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 80 1,2 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| Benzo(a)pyrene          | 0.66     | 0.66       | 100        | ND          | 0.20 J        | ND       | ND           | ND       | ND           | ND       | 11         | 11<br>6.6  | <u>63</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <u> 17 J</u> | ND       | ND             |            | 20                         | 87.8J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Contraction of the local division of the loc |
| Indeno(1,2,3-cd)pyrene  | 0.9      | 4          | 500        | ND          | 0.098 J       | ND       | ND           | ND       | ND           | ND       | 8.3        | 0.6<br>1.8 | 81 18<br>8 3 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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| Dibenz(a,h)anthracene   | 0.66     | 0.66       | 100        | ND          | ND            | ND       | ND           | ND       | ND           | ND<br>ND | 2.2        | 5.4        | St. 1. St | 4            | ND<br>ND | ND             | ND         | 6.3 J                      | 2.5 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Benzo(g,h,i)perylene    | NS       | NS         | NS         | NO          | 0.12 J        | ND       | NÐ           | ND       | ND           |          | 8.4        | 0.4        | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| VOCs:                   |          | 7 10       | 1          | ND          | ND            | ND       | ND           | ND       | ND           | I ND     | ND         | ND         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Benzene                 | 3        | 13         | 500        | ND          | NO            | ND       | 0.18 J       | ND       | ND           | ND       | ND         | ND         | 57                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 59           | ND       | ND             | ND         | 29                         | 1.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.19 J 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| Toluene                 | 1000     | 1000       | 100        | 0.29 J      | 2.3           | ND       | 0.88         | ND       | ND           | ND       | ND         | ND         | 17                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 51           | 0.54 J   | ND             | ND         | 63                         | 4.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 28     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| Ethylbenzene            | 410      | 1000       | 100        | 0.62 J      | 15            | ND       | 2.5          | ND       | ND           | ND       | ND         | ND         | 450                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Xyiene                  | 23       | 97         | 100        | ND          | ND            | ND       | 0.59 J       | ND       | ND           | ND       | ND         | 0.17 J     | 160                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Styrene                 | 210      | 1000       | 50         | ND          | ND            | ND       | ND           | ND       | ND           | ND       | 0.18 J     | 0.19 J     | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| 1.1.1 - Trichloroethane | 1 210    | 1 1000     |            | 1 110       | <u>, no</u>   |          | 1 110        |          | 1            | 1        |            | 1          | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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| Inorganic Elements:     |          |            |            |             |               |          |              |          |              |          |            |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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| Silver                  | 110      | 4100       | NS         | ND          | ND            | ND ND    | ND           | ND       | ND           | ND       | 1.43 J     | ND         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Arsenic                 | 20       | 20         | NS         | 0.75 J      | ND            | ND       | 0.63 J       | 0.44 J   | 0.54 J       | 1.9      | 2.6        | 2          | 0.49 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ND           | 1.3      | 0.6 J          | 1.5        | 0.58 J                     | 0.74 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ND     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| Barium                  | 700      | 47000      | NS         | 10.3 J      | 7.93 J        | 6.91 J   | 25           | 31       | 15           | 71       | 45         | 77         | 14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8.22 J       | 49       | 7.95 J         | 35         | 8.81 J                     | 10.6 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12     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| Beryllium               | 1        | 1          | NS         | ND          | ND            | ND       | ND           | 0.27 J   | ND           | 0.47 J   | 0.29 J     | 0.39 J     | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <u>ND</u>    | 0.42 J   | ND             | 0.25 J     | ND                         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ND     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| Cadmium                 | 39       | 100        | NS         | ND          | ND            | ND       | ND           | NO       | ND           | ND       | ND         | ND         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Chromium                | 78000    | 78000      | NS         | 4.7         | 5,4           | 4.4 J    | 4.72 J       | 7.9      | 4.71 J       | 13.2     | 9.2        | 12.2       | 3.35 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 3.87 J       | 9.9      | 3.96 J         | 6.8        | 3.51 J                     | 5.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4.7    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| Copper                  | 600      | 600        | NS         | 5.5         | 6             | 5        | 6.3          | 9.5      | 6.1          | 10.8     | 13.1       | 21.6       | 9.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Thallium                | 2        | 2          | NS         | 2.03 J      | ND            | ND       | ND           | NO       | ND           | ND       | ND         | ND         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Mercury                 | 14       | 270        | NS         | ND          | 0.0032 J      | ND       | ND           | 0.0095 J | ND           | 0.0043 J | 1.18       | 0.41       | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ND           | 0.0114 J | ND             | ND         | ND                         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ND     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| Nickel                  | 250      | 2400       | NS         | 5.3 J       | 5.5 J         | 4.3 J    | 5.1 J        | 7.3      | 3.9 J        | 13.4     | 9.5        | 10         | 4,4 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.0 J        | 9.5      | 3.3 J          | 5.9 J      | 4.09 J                     | 4.64 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5.4 J  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| Lead                    | 400      | 600        | NS         | 1.7 E       | 2.1           | 2        | 2.5          | 4.1      | 3.1          | 6.9      | 58.1       | 96.2       | 2.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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| Antimony                | 14       | 340        | NS         | ND          | ND            | ND       | ND           | ND       | ND           | ND       | ND         | ND         | ND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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| Selenium                | 63       | 3100       | NS         | 0.66 J      | ND            | ND       | ND           | ND       | ND           | ND       | ND         | ND         | NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 5.8          | 13.5     | <u>NU</u><br>6 | ND<br>9.6  | ND                         | ND<br>8.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 6.5    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| Vanadium                | 370      | 7100       | NS         | 6.7         | 5.9           | 5.5      | 6.6          | 9.4      | 6.4<br>9.7 J | 18.2     | 12.1<br>50 | 15.6       | 5.5<br>11.2 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 8.7 J        | 23       | 8.2 J          | 9.6        | 4.9                        | 9.5 J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 11.5 J 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| Zinc                    | 1500     | 1500       | NS         | 9.2 J<br>ND | 9.5 J<br>1.52 | 14       | 11.8 J<br>ND | ND       | ND ND        | ND 32    | 5.62       | 3.19       | 0.25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.72         | ND ND    | 1.53           | 031        | 0.48                       | 0.15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ND     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| Cyanide                 | 1100     | 21000      | NS         | I NU        | 1.52          | 1.52     | T NED        |          |              | 1 10     | 1 3.02     | 1 3.13     | 1 0.20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1 4.12       | ) (10)   | 1              | 1 0.31     | 1 0.40                     | 1 0.13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | L      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#### Notes:

All results are shown in mg/kg. B = Analyte detected in Field Blank. D = Sample dikted prior to analysis. E = Estimated value due to interference. J = Detected below method detection limit.

FT BGS = Feet Below Ground Surface NA = Not Analyzed for this parameter

ND = Not Detected

NS = No Soll Cleanup Criteria. Shaded/bold = Parameter exceeds most stringent SCC.

Public Service Electric and Gas Company Former Front Street Gas Works

#### "A" Horizon Soli Sample Results

| DePth (FP BGS)         D5 5/9         T5 5/7         T5 6/7         D5 6/7         T5 7/7         D5 6/7         D5 7/7         D5 7/7 <thd 7="" 7<="" th=""> <thd5< th=""><th></th><th></th><th>DATE</th><th></th><th>06/16/98</th><th>06/17/98</th><th>07/09/98</th><th>07/09/98</th><th>07/01/98</th><th>07/01/98</th><th>07/02/98</th><th>07/01/98</th><th>07/01/98</th><th>06/30/98</th><th>06/30/98</th><th>08/05/98</th><th>08/05/98</th><th>08/07/98</th><th>08/14/98</th><th>08/15/98</th><th>08/15/98</th></thd5<></thd>                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                             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| ANALYSIS:         EXAMPLE NO.         Degle 23         B-26         B-26         MV-1         MV-1         MV-2         MV-3         MV-3         B-V3         B-24         B-35           PAHs:         Cream                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               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| Date:         Difference         Difference </td <td>ANAL VOIC-</td> <td></td> <td>1 · · ·</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>(</td> <td>MW.1</td> <td>MW-1</td> <td>MW-2</td> <td>MW-2</td> <td>MW-3</td> <td>MW-3</td> <td>8-24</td> <td>B-30</td> <td>B-31</td> <td>8-32</td> <td>B-34</td> <td>8-35</td>                                                                                                                                                                                                                                                                                                                                                                         | ANAL VOIC-                                                                                                                                                                                                                                                                                                              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| PARt:         Créerie                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ANAL 1313.                                                                                                                                                                                                                                            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#### Notes:

All results are shown in mg/kg. B = Analyte detected in Field Blank. D = Sample diluted prior to analysis. E = Estimated value due to interference. J = Detected below method detection limit.

FT BGS = Feet Below Ground Surface

NA = Not Analyzed for this parameter

ND = Not Detected

NS = No Soil Cleanup Criteria.

Shaded/bold = Parameter exceeds most stringent SCC.

Public Service Electric and Gas Company Former Front Street Gas Works

#### "A" Horizon Soll Sample Results

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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                   |           | 1          |          |          | B-40     | B-41     | B-42     | B-45     | B-45     | 8-46     | B-48     |
| ANALYSIS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |          | SAMPLE NO         |           | 8-36       | 8-37     | 8-39     | 8-40     | 8-41     | D-44     | <u> </u> | 0-40     | 0-40     |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | RDC      | NRDC              | IGW       |            |          |          |          |          |          |          |          |          | 1        |
| PAHs:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Criteria | Criteria          | Criteria  |            | ND       | ND       | ND       | ND       | ND       | 0,203    | 4 47     | ND       | 01741    |
| Naphthalene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 230      | 4200              | 100       | 283        | ND<br>ND | ND       | ND       | ND       | ND       | ND       | 0.662    | ND       | ND       |
| 2-Methylnaphthalene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NS       | NS                | NS        | 28.1       | ND       | ND<br>ND | ND       |
| Acenaphthylene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NS       | NS                | NS        | 2.78       | ND       | ND       | ND       | ND       | ND       | 0.127    | 0.214    | ND       | ND       |
| Acenaphihene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 3400     | 10000             | 100       | 3.3        | ND       |          | ND       |
| Fluorens                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2300     | 10000             | 100<br>NS | 4,15       | 0.044 J  | ND       |
| Phenanthrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NS       | NS                |           | 4.15<br>ND | ND       | ND       | ND       | ND       | ND       | ND       | NO       | ND       | ND       |
| Anthracene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10000    | 10000             | 100       | 2.58       | 0:0733 J | ND<br>DN | NO       | ND       | ND       | ND       | ND       | ND       | ND       |
| Fluoranthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2300     | 10000             | 100       |            |          | ND       |
| Pyrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1700     | 10000             | 100       | 3.06       | 0.0808 J |          | ND       |
| Senzo(a)anthracene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.9      | 4                 | 500       |            | 0.0528 J |          | ND       | ND       | ND       | ND       | ND       | ND       | NO       |
| Chrysene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 9        | 40                | 500       | 0.718      | 0.0547 J | ND<br>ND | ND ND    |          | ND       | ND       | ND       | ND       | ND       |
| Benzo(b)fluoranthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.9      | 4                 | 50        | NO         | 0.0637 J |          | ND<br>ND | ND<br>ND |          | ND       | ND<br>ND | ND       | ND       |
| Senzo(k)fluoranthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.9      | 4                 | 500       | ND         | 0.046 J  | ND<br>ND | ND<br>ND | ND<br>ND | NU       | ND<br>ND | ND       | ND<br>ND | ND       |
| Benzo(a)pyrane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.66     | 0.66              | 100       | ND         | 0.0643 J |          |          |          |          | ND<br>ND | ND       |          | ND       |
| Indeno(1,2,3-cd)pyrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.9      | 4                 | 500       | 0.039 J    | ND       | ND       | ND       | ND       | ND       | ND<br>ND | ND<br>ND | ND ND    | ND<br>ND |
| Dibenz(a,h)anthracene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.66     | 0.66              | 100       | ND         | ND       | ND       | ND       | ND       | ND<br>ND | ND       | ND<br>ND | ND       | ND       |
| Benzo(g,h,i)perylene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | NS       | NS                | NS        | 0.036 J    | ND       | ND       | ND       | ND       | L NU     |          | I NU     | NU       |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |          |                   |           |            |          |          |          |          |          |          |          |          |          |
| VOCs:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | T        |                   | 1         | 65.5       | ND       | ND       | ND       | ND       | ND       | 1.62     | 0.695 J  | ND       | 0.334 J  |
| Benzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 3        | 13                | 500       |            | ND       | NĎ       | 0.421 J  |
| Toluene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1000     | 1000              | 100       | 687        | ND       | ND       | ND       | NO       | NO       | 0.297 J  | 1.73     | ND       | 0.863    |
| Ethylbenzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1000     | 1000              |           | 1310       | ND ND    | ND       | ND       | ND       | ND       | ND       | 1.44     | ND       | 0.612 J  |
| Xylene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 410      | 1000              | 10        |            | ND ND    | ND       | ND       | ND       | ND       | NO       | ND       | ND       | ND       |
| Styrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 23       | 97                | 100       | ND<br>ND   | ND       |
| 1,1,1 - Trichloroethane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 210      | 1000              | 1 50      |            |          |          | 1 10     | 140      | <u></u>  | 1        | [        | <u> </u> | L        |
| · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |          |                   |           |            |          |          |          |          |          |          |          |          |          |
| Inorganic Elements:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1 110    | 4100              | NS        | <1.2       | <1.1     | <1.2     | <1.2     | <1.2     | <1.1     | <1.2     | <1.2     | 1 <1.2   | <1.2     |
| Silver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 20       | 20                | NS        | 1.2        | 1.8      | 1.3      | <1.2     | 1.2      | <1.1     | 2.5      | <1.2     | <1.2     | 1.7      |
| Arsenic<br>Barium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 700      | 47000             | NS        | <24        | 41.9     | 36.9     | <25      | <24      | 24.0 J   | 59.6 J   | 47.3 J   | <24      | <25      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1 1      | 47000             | NS        | <0.59      | 0.68     | 0.65     | <0.62    | <0.61    | <0.55    | <0.60    | <0.58    | <0.61    | <0.62    |
| Beryllium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 39       | 100               | NS        | <0.59      | <0.54    | <0.63    | <0.62    | <0.61    | <0.55    | <0.60    | <0.58    | <0.61    | <0.62    |
| Chromium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 78000    | 78000             | NS        | 10         | 18.9     | 12.7     | 4.8      | 6        | 5.2      | 15.9     | 16.2     | 6        | 6.8      |
| the second s | 600      | 600               | NS        | 9.2        | 21.5     | 10.7     | 7.7      | 6.7      | 7.5      | 63.2     | 10.5     | 7.8      | 7.1      |
| Copper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2        | 2                 | NS        | <1.2       | <1.1     | <1.2     | <1.2     | <1.2     | 3,3      | 7.1      | 8.2      | 3,2      | 4.2      |
| Thallium<br>Mercury                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 14       | 270               | NŜ        | 0.12       | <0.11    | <0.11    | <0.12    | <0.12    | <0.11    | 0.2      | <0.11    | <0.11    | <0.095   |
| Nickel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 250      | 2400              | NS        | 6          | 15       | 10.7     | <5.0     | 5.1      | <4.4     | 12.4     | 11.2     | <4.9     | <4.9     |
| Lead                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 400      | 600               | NS        | <12        | <11      | <12      | <12      | <12      | <11      | 32.2 J   | <12      | <12      | <12      |
| Antimony                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 14       | 340               | NS        | <7.1 J     | <6.4 J   | <7.5     | <7.4     | <7.3     | <6.6 J   | <7.2 J   | <7.0 J   | <7.3 J   | <7.4 J   |
| Selenium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 63       | 3100              | NS        | <12        | <11      | <12      | <12      | <12      | <11      | <12      | <12      | <12      | <12      |
| Vanadium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 370      | 7100              | NS        | 10.1       | 23       | 17.4     | 7.6      | 9.1      | 8.4      | 21.7     | 22.3     | 8.2      | 11.5     |
| Zinc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1500     | 1500              | NS        | 13.1       | 34.6     | 26.4     | 124      | 9.4      | 9.0 J    | 34.3 J   | 28.0 J   | 11.1 J   | 11.2 J   |
| Cyanide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1100     | 21000             | NS        | <1.2       | <1.1     | <1.2     | <1.2     | <1.2     | <1.1     | <1.2     | <1.2     | <1.2     | <1.2     |
| Lo Yarnoo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 1 ,100   |                   |           |            |          |          |          |          |          |          |          |          |          |

#### Notes:

All results are shown in mg/kg. B = Analyte detected in Field Blank. D = Sample diluted prior to analysis. E = Estimated value due to interference.

J = Detected below method detection limit.

FT BGS = Feet Below Ground Surface NA = Not Analyzed for this parameter

ND = Not Detected

NS = No Soil Cleanup Criteria.

Shaded/bold = Parameter exceeds most stringent SCC.

Public Service Electric and Gas Company Former Front Street Gas Works

#### "B" Horizon Soll Sample Results

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | DATE        |            | 07/27/98    | 07/27/98   | 07/17/98     | 06/19/98                               | 06/19/98   | 06/22/98   | 06/22/98   | 06/23/98           | 06/23/98   | 06/24/98     | 06/24/98     | 06/08/98     | 06/09/98 | 06/29/98 | 06/15/98 | 06/11/98 | 06/10/98   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|------------|-------------|------------|--------------|----------------------------------------|------------|------------|------------|--------------------|------------|--------------|--------------|--------------|----------|----------|----------|----------|------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            | DEPTH (FT   | 8GS)       | 24.5-25     | 31.5-32    | 27.5-28      | 25.5-26                                | 42.5-43    | 17.5-18    | 35.5-36'   | 21.5-22            | 33.5-34    | 17-17.5      | 29.5-30      | 41-41.5      | 53.5-54  | 52.5-53' | 57.5-58  | 54.5-55  | 53.5-54    |
| ANALYSIS:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            | SAMPLE NO   | ),         | B-11        | B-11       | B-12         | B-13                                   | B-13       | 8-14       | B-14       | B-15               | B-15       | B-16         | 8-16         | B-17         | B-17     | B-18     | 8-19     | 8-20     | 8-22       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RDC        | NRDC        | IGW        | 1           |            |              |                                        |            |            |            |                    |            |              |              |              |          |          |          |          |            |
| PAHs:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Criteria   | Criteria    | Criteria   |             |            |              |                                        |            |            |            |                    |            | L            | L            |              |          |          |          |          | L          |
| Naphthalene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 230        | 4200        | 100        | ND          | 5.2        | NA           | ND                                     | ND         | 6.7        | 0.16 J     | 0.26 J             | ND         | 0.051 J      | ND           | ND           | ND       | ND<br>ND | ND       | ND<br>ND | ND<br>ND   |
| 2-Methylnaphthalene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NS         | NS          | NS         | ND          | 13         | NA           | ND                                     | ND         | 1.4<br>ND  | ND<br>ND   | 0.17 J             | ND         | ND<br>ND     | ND<br>ND     | ND<br>ND     | ND<br>ND |          | ND<br>ND | ND       | NO         |
| Acenaphthylene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NS         | NS          | NS         | ND          | 2.3        | NA<br>NA     | ND<br>0.073                            | ND<br>ND   | 0.24 J     | ND<br>ND   | 0.073 J<br>0.049 J | ND ND      | ND           | ND ND        | ND           |          | ND       | ND       | ND       | ND         |
| Acenaphthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 3400       | 10000       | 100<br>100 | ND<br>ND    | 25<br>16   | NA<br>NA     | ND                                     | ND         | 0.18 J     | ND         | 0.14 J             | ND         | ND           |              | NO           | ND       | ND       | ND       | ND       | ND         |
| Fluorene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2300<br>NS | 10000<br>NS | NS         | ND          | 39         | NA<br>NA     | ND                                     | ND         | 0.15 J     | ND         | 0.4                | ND         | ND           | ND           | NO           | 0.072 J  | ND       | ND       | ND       | ND         |
| Phenanthrene<br>Anthracene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10000      | 10000       | 100        | ND          | 12         | NA           | ND                                     | ND         | ND         | ND         | 0.13 J             | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| Fluoranthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2300       | 10000       | 100        | ND          | 12         | NA           | ND                                     | ND         | 0.071 J    | ND         | 0.21 J             | ND         | ND           | ND           | ND           | 0.044 J  | ND       | ND       | ND       | ND         |
| Pyrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1700       | 10000       | 100        | ND          | 17         | NA           | ND                                     | ND         | 0.11 J     | ND         | 0.20 J             | ND         | ND           | ND           | ND           | 0.057 J  | ND       | ND       | ND       | ND         |
| Benzo(a)anthracene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.9        | 4           | 500        | ND          | 5.5        | NA           | ND                                     | ND         | 0.057 J    | ND         | 0.086 J            | ND         | ND           | ND           | ND           | ND ND    | ND       | ND       | ND       | ND         |
| Chrysene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 9          | 40          | 500        | ND          | 5.1        | NA           | ND                                     | ND         | 0.052 J    | ND         | 0.077 J            | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| Benzo(b)fluoranthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.9        | 4           | 50         | ND          | 3.3        | NA           | ND                                     | ND         | ND         | ND         | 0.081 J            | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| Benzo(k)fluoranthene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.9        | 4           | 500        | ND          | 1.2        | NA           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| Benzo(a)pyrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.66       | 0.66        | 100        | ND          | 4.5        | NA           | ND                                     | ND         | 0.072 J    | ND         | 0.075 J            | ND         | ND           | ND           | ND           | NO       | ND       | ND       | NO       | ND         |
| Indeno(1,2,3-cd)pyrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.9        | 4           | 500        | ND          | 1.1        | NA           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND:      | NO         |
| Dibenz(a,h)anthracene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.66       | 0.66        | 100        | ND          | 0.34 J     | NA           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| Benzo(g,h,i)perylene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NS         | NS          | NS         | ND          | 0.87       | NA           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |            |             |            |             |            |              |                                        |            |            |            |                    |            |              |              |              |          |          |          |          |            |
| VOCs:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |            |             |            |             |            |              | 1.10                                   | ND         | 0.17 J     | ND         | 3.9                | 0.60 J     | ND           | ND           | ND           | ND       | I ND     | 12       | ND       | ND         |
| Benzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 3          | 13          | 1          | ND          | ND<br>ND   | 0.30 J<br>ND | ND<br>ND                               | ND         | ND         | ND         | ND                 | ND         | 0.20 J       | ND           | ND           | ND       |          | ND       | ND       |            |
| Toluene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1000       | 1000        | 500<br>100 | 4.1         | ND         | 4.7          | ND                                     | ND         | 2.5        | ND         | 0.27 J             | ND         | 0.54 J       | NO           | ND           | NO       | 0.26 J   | ND       | ND       | NO         |
| Ethylbenzene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 410        | 1000        | 10         | 0.74        | ND         | 1.7          | ND                                     | ND         | 1.7        | ND         | 0.5C J             | ND         | 0.69 J       | ND           | ND           | ND       | 0.56 J   | ND       | ND       | ND         |
| Xylene<br>Styrene                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 23         | 97          | 100        | ND          | ND         | ND           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| 1,1,1 - Trichloroethane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 210        | 1000        | 50         | ND          | ND         | ND           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | NO       | ND       | ND       | ND         |
| 1,1,1 - 11/21/03/3641/81/9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <u> </u>   | 1,000       | l          |             | 1          |              | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |            |            |            | ·                  |            |              |              |              |          |          |          |          |            |
| inorganic Elements:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |            |             |            |             |            |              |                                        |            |            |            |                    |            |              |              |              |          |          | <b></b>  |          |            |
| Silver                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 110        | 4100        | NS         | ND          | ND         | NA           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | NO       | ND       | ND         |
| Arsenic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20         | 20          | NS         | 1.6         | 1.2        | NA           | 1.3                                    | 0.56 J     | 2.5        | 1.4        | 0.63 J             | 2          | 1.9          | 1.05 J       | 1.2          | 2        | 1.3      | 1.6      | 2.6      | 2          |
| Barium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 700        | 47000       | NS         | 19          | 151        | NA           | 46                                     | 71         | 29         | 92         | 31                 | 125        | 26           | 82           | 41           | 0.96     | 0.79     | 139      | 207      | 99<br>0.67 |
| Beryilium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1          | 1           | NS         | 0.26 J      | 0.78       | NA           | 0.47 J                                 | 0.67       | 0.48 J     | 1.05       | 0.24 J<br>ND       | 0.82<br>ND | 0.25 J<br>ND | 0.38 J<br>ND | 0.33 J<br>ND | ND       | ND ND    | ND       | ND       | ND         |
| Cadmium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 39         | 100         | NS         | ND          | ND<br>17.5 | NA<br>NA     | ND<br>14.8                             | ND<br>19.8 | ND<br>15.1 | ND<br>24.2 | 9.3                | 23.7       | 7.1          | 16.2         | 10.3         | 31.2     | 21.2     | 30.5     | 23.9     | 31.7       |
| Chromium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 78000      | 78000       | NS         | 8<br>3.02 J | 14.2       | NA<br>NA     | 12.2                                   | 6.1        | 12.8       | 10.4       | 10.4               | 11.4       | 8.6          | 10           | 9.2          | 11.1     | 8.4      | 11.8     | 13.7     | 12.5       |
| Copper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 600        | 600         | NS         | ND ND       | ND         | NA           | ND                                     | ND         | ND         | ND         | ND                 | 1.85 J     | 1.18 J       | 2.3          | ND           | 1,23 J   | 2.9      | 1.13 J   | ND       | NO         |
| Thallium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2          | 270         | NS<br>NS   | ND          | ND         | NA           | ND                                     | NO         | 0.0130 J   | NO         | 0.0058 J           | ND         | ND           | ND           | 0.0169 J     | 0.0254 J |          | ND       | ND       | 0.0202 J   |
| Mercury                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 250        | 2400        | NS         | 5.2 J       | 16.2       | NA           | 11.7                                   | 21,9       | 12.5       | 27.7       | 8                  | 26.3       | 6.8          | 10.6         | 9.3          | 27.8     | 24.4     | 32.1     | 28,1     | 20.1       |
| Nickel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 400        | 600         | NS         | 2.9         | 10.2       | NA           | 6.1                                    | 9.8        | 9.2        | 12.7       | 6.4                | 12.1       | 3.9          | 6.2 E        | 5.1          | 13.9     | 11.3 E   | 13.6     | 11.9     | 12.5       |
| Antimony                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 14         | 340         | NS         | NO          | ND         | NA           | ND                                     | ND         | ND         | ND         | ND                 | ND         | ND           | ND           | ND           | ND       | ND       | ND       | ND       | ND         |
| Selenium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 63         | 3100        | NS         | ND          | ND         | NA           | ND                                     | ND         | 0.45 J     | ND         | ND                 | ND         | ND           | 0.45 J       | ND           | ND       | ND       | NÐ       | ND       | ND         |
| Vanadium                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 370        | 7100        | NS         | 13          | 24         | NA           | 22.3                                   | 25.1       | 22.9       | 30.2       | 10,8               | 31         | 9.9          | 29.3         | 12.6         | 29       | 25.2     | 40       | 29       | 22.6       |
| Zinc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1500       | 1500        | NS         | 21          | 40         | NA           | 29                                     | 49         | 31         | 66         | 18                 | 58         | 15           | 23           | 22           | 61       | 50       | 70       | 59       | 46         |
| Cyanide                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1100       | 21000       | NS         | ND          | ND         | NA           | ND                                     | ND         | ND         | ND         | 0.28               | NO         | ND           | NĎ           | 0.34         | ND       | ND       | ND       | ND       | ND         |
| have also as a second s |            |             |            |             |            |              |                                        |            |            |            |                    |            |              |              |              |          |          |          |          |            |

#### Notes:

All results are shown in mg/kg. B = Analyte detected in Field Blank. D = Sample diluted prior to analysis.

E = Estimated value due to interference. J = Detected below method detection limit.

FT BGS = Feet Below Ground Surface

NA = Not Analyzed for this parameter

ND = Not Detected

NS = No Soil Cleanup Criteria. Shaded/bold = Parameter exceeds most stringent SCC.

Public Service Electric and Gas Company Former Front Street Gas Works

#### "B" Horizon Soil Sample Results

| Afts:         DEC         OW         DEC         OW         DEC         OW         DEC         OW         DEC          DEC         DEC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                 | DATE<br>DEPTH (FT | BGS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 06/16/98<br>56.5-57' | 07/24/98                                                                                                        | 07/24/98<br>26.5-27' | 07/24/98<br>34-34.5' | 07/13/98<br>41.5-42                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 07/14/98<br>58-58.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 07/28/98<br>29.5-30' | 07/28/98<br>39-39.5'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 07/16/98<br>26.5-27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 07/16/98<br>26.5-27 | 06/07/98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 06/08/98    | 06/10/98                                                                                                                                                                                                                                                                                                                                                                                     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| PAR:         Chronic NetWork         Converting         Converti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ANAI YSIS.                                                                                                                                                                                                                                                                             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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B-23                 | B-26                                                                                                            | B-26                 | B-26                 | MW-1A                                                                                                                                                                                                                                         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                                                                                      | Trip blank  |
| PARe:         Criving         Criving <thcriving< th=""> <thcriving< th=""> <thcri< td=""><td>ANAL 1010.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>[</td><td>1</td><td></td></thcri<></thcriving<></thcriving<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ANAL 1010.                                                                                                                                                                              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Notes:

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Public Service Electric and Gas Company Former Front Street Gas Works

#### "B" Horizon Soil Sample Results

| DEPTH (FT BGS)                                                 | 9/98 07/14/98 07/16/98 07/17/98 07/24/98 07/27/98 08/05/98 10/09/98 10/17/9                              |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                                                                |                                                                                                          |
|                                                                | blank Trip blank |
| RDC NRDC IGW                                                   |                                                                                                          |
| PAHs: Criteria Criteria                                        |                                                                                                          |
|                                                                | IA NA NA NA NA NA NA NA NA                                                                               |
| Z-Methylnaphthalane NS NS NS NA NA NA NA NA NA NA NA           | IA NA NA NA NA NA NA NA NA                                                                               |
| Arenantitylete NS NS NS NA NA NA NA NA NA NA                   | IA NA NA NA NA NA NA NA NA                                                                               |
| Acenaphthene 3400 10000 100 NA NA NA NA NA NA NA               | IA NA NA NA NA NA NA NA                                                                                  |
| Fluorene 2300 10000 100 NA NA NA NA NA NA NA                   | IA NA NA NA NA NA NA NA                                                                                  |
| Phenanthrene NS NS NA NA NA NA NA NA NA                        | IA NA                                                                         |
| Aninracene 10000 1000 1000                                     |                                                                                                          |
| Fauorantiferie 2300 10000 100 100                              |                                                                                                          |
| Pyrene 1700 1000 100 100                                       |                                                                                                          |
| Benzolajanthracene 0.5 1 4 300 Na 100 Na                       |                                                                                                          |
| Chrysene 3 40 300 W. Harris A.                                 |                                                                                                          |
| Benzolojinusianuterie 0.9 4 00 NVV                             |                                                                                                          |
| Benzo(k)riuorantnerie 0.9 4 300                                |                                                                                                          |
| (Derizo(a))pyrene 0.00 0.00                                    |                                                                                                          |
| (indeno(1,2,3-bd))pyrene 0.9 4 500 100                         |                                                                                                          |
| Dibertz(a,n)antorraceire 0.00 0.00 100 100                     |                                                                                                          |
| Benzolghi, jiperylene NS NS NS NA NA NA NA NA NA NA            | VA NA NA NA NA NA NA NA NA NA                                                                            |
|                                                                |                                                                                                          |
| VOCs:                                                          | ND                                                                            |
| Derizerie 3 13 14 19 110 110                                   | ND N                                                                 |
|                                                                |                                                                                                          |
|                                                                |                                                                                                          |
| Aylene 410 1000 10 110                                         |                                                                                                          |
|                                                                | ND ND ND ND ND ND ND ND ND                                                                               |
| 1,1,1 - Trichioroethane 210 1000 50 ND ND ND ND ND ND ND ND    |                                                                                                          |
| Inorganic Elements:                                            |                                                                                                          |
| Inorganic Elements:<br>Silver 110 4100 NS NA NA NA NA NA NA NA | NA NA NA NA NA NA NA NA                                                                                  |
|                                                                | NA NA NA NA NA NA NA NA NA                                                                               |
|                                                                | NA NA NA NA NA NA NA NA NA                                                                               |
|                                                                | NA NA NA NA NA NA NA NA NA                                                                               |
|                                                                | NA NA NA NA NA NA NA NA                                                                                  |
| Chromium 78000 78000 NS NA NA NA NA NA NA                      | NA NA NA NA NA NA NA NA                                                                                  |
| Copper 600 500 NS NA NA NA NA NA NA                            | NA NA NA NA NA NA NA NA                                                                                  |
| Thatiym 2 2 NS NA NA NA NA NA NA                               | NA NA NA NA NA NA NA NA                                                                                  |
| Mercury 14 270 NS NA NA NA NA NA NA NA                         | NA NA NA NA NA NA NA NA NA                                                                               |
| Nickel 250 2400 NS NA NA NA NA NA NA                           | NA NA NA NA NA NA NA NA                                                                                  |
| Lead 400 600 NS NA NA NA NA NA NA                              | NA NA NA NA NA NA NA NA                                                                                  |
| Antimony 14 340 NS NA NA NA NA NA NA                           | NA NA NA NA NA NA NA NA                                                                                  |
| Selenium 63 3100 NS NA NA NA NA NA                             | NA NA NA NA NA NA NA NA NA                                                                               |
| Valiadium 3/0 /100 No                                          | NA                                                                         |
| Zinc 1900 1900 1900 1900 1900 1900 1900 190                    |                                                                                                          |
| Cyanide 1100 21000 NS NA NA NA NA NA NA                        | NA NA NA NA NA NA NA NA NA                                                                               |

Notes:

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Public Service Electric and Gas Company Former Front Street Gas Works

#### "B" Horizon Soil Sample Results

|                        |          | DATE<br>DEPTH (FT | BGS)     | 11/06/98   |
|------------------------|----------|-------------------|----------|------------|
| ANALYSIS:              |          | SAMPLE NO         |          | Trip blank |
|                        | RDC      | NRDC              | IGW      | 1          |
| PAHs:                  | Criteria | Criteria          | Criteria |            |
| Naphthalene            | 230      | 4200              | 100      | NA         |
| 2-Methylnaphthalene    | NS       | NS                | NS       | NA         |
| Acenaphthylene         | NS       | NS                | NS_      | NA         |
| Acenaphthene           | 3400     | 10000             | 100      | NA         |
| Fluorene               | 2300     | 10000             | 100      | NĂ         |
| Phenanthrene           | NŚ       | NS                | NS       | NA         |
| Anthracene             | 10000    | 10000             | 100      | NA         |
| Fluoranthene           | 2300     | 10000             | 100      | NA         |
| Pyrene                 | 1700     | 10000             | 100      | NA         |
| Benzo(a)anthracene     | 0.9      | 4                 | 500      | NA NA      |
| Chrysene               | 9        | 40                | 500      | NA         |
| Benzo(b)fluoranthene   | 0.9      | 4                 | 50       | NA         |
| Benzo(k)fluoranthene   | 0.9      | 4                 | 500      | NA         |
| Benzo(a)pyrene         | 0.66     | 0.66              | 100      | NA         |
| Indenc(1,2,3-cd)pyrene | 0.9      | 4                 | 500      | NA         |
| Dibenz(a,h)anthracene  | 0.66     | 0.66              | 100      | NA         |
| Benzo(g,h,i)perylene   | NS       | NŚ                | NS       | NA         |
| VOCs:                  |          |                   |          |            |
| Benzene                | 3        | 13                | 1        | ND         |
| Toluene                | 1000     | 1000              | 500      | ND         |

| Benzene                 | 3    | 13   | 1   | ND |
|-------------------------|------|------|-----|----|
| Toluene                 | 1000 | 1000 | 500 | ND |
| Ethylbenzene            | 1000 | 1000 | 100 | ND |
| Xylene                  | 410  | 1000 | 10  | ND |
| Styrene                 | 23   | 97   | 100 | ND |
| 1,1,1 - Trichloroethane | 210  | 1000 | 50  | ND |

#### Inorganic Elements:

| Silver    | 110   | 4100  | NS | NA |
|-----------|-------|-------|----|----|
| Arsenic   | 20    | 20    | NS | NA |
| Barium    | 700   | 47000 | NŜ | ŇA |
| Beryllium | 1     | 1     | NS | NA |
| Cadmium   | 39    | 100   | NS | NA |
| Chromium  | 78000 | 78000 | NS | NA |
| Copper    | 600   | 600   | NS | NA |
| Thallium  | 2     | 2     | NS | NA |
| Mercury   | 14    | 270   | NS | NA |
| Nickel    | 250   | 2400  | NS | NA |
| Lead      | 400   | 600   | NS | NA |
| Antimony  | 14    | 340   | NS | NA |
| Selenium  | 63    | 3100  | NS | NA |
| Vanadium  | 370   | 7100  | NS | NA |
| Zinc      | 1500  | 1500  | NS | NA |
| Cyanide   | 1100  | 21000 | NS | NA |

#### Notes:

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Public Service Electric and Gas Company Former Front Street Gas Works

#### Groundwater Sample Results

|                        | SAMPLE NO         | MW-1            | MW-1*    | MW-1A    | DUPE     | MW-1A*   | DUPE*                     | MW-2     | MW-2A    | MW-2A*   | MW-2     | MW-2*    | MW-3         | MW-3*                       | MW-3A    | MW-3A*   | MW-3BR   | MW-48R   | MW-5BR   | MW-6     |
|------------------------|-------------------|-----------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|----------|----------|--------------|-----------------------------|----------|----------|----------|----------|----------|----------|
| ANIAL VOIC.            |                   | ł               |          |          |          |          |                           |          |          |          |          |          |              |                             |          |          |          |          |          |          |
| ANALYSIS:              | DATE              | 09/16/98        | 09/16/98 | 09/16/98 | 09/16/98 | 09/16/98 | 09/16/98                  | 09/17/98 | 09/17/98 | 09/17/98 | 09/23/98 | 09/23/98 | 09/17/98     | 09/17/98                    | 09/17/98 | 09/17/98 | 09/17/98 | 09/17/98 | 09/17/98 | 09/17/98 |
|                        | Groundwater       |                 |          |          | (MW-1A)  |          | (MW-1A)                   |          |          |          |          |          |              |                             |          |          |          |          |          |          |
| VOLATILE ORGANICS:     | Quality Standards |                 |          |          |          |          |                           |          |          |          |          |          | 1            |                             |          |          |          |          |          |          |
| p                      | 1                 | 413             | NA       | 1340     | 1140     | NA       | NA                        | 10       | 580      | NA       | NA       |          |              |                             |          |          |          |          |          |          |
| Benzene                | 6                 | ND              | NA<br>NA | ND       | ND       | NA<br>NA | NA<br>NA                  | ND<br>ND | ND       | NA NA    | NA<br>NA | NA<br>NA | 72.1 ND      | NA                          | ND<br>ND | NA       | 21ago    | 1.4      | 449      | 0.55 J   |
| Chloroform             |                   |                 |          |          |          |          | L                         |          |          |          |          |          |              | NA                          |          | NA       | 1.7 J    | 1.0 J    | 18.4 J   | ND       |
| Toluene                | 1,000             | 3840            | NA       | 11.1 J   | ND       | NA       | NA                        | ND       | 4.8 J    | NA       | NA       | NA       | 0.48 J       | NA                          | ND       | NA       | 0.62 J   | ND       | ND       | ND       |
| Ethylbenzene           | 700               | 4390            | NA       | 991      | 857 🤄    | NA       | NA                        | ND       | 132      | NA       | NA       | NA       | 0.53 J       | NA                          | 0.65 J   | NA       | 23.6     | 0.55 J   | ND       | ND       |
| Xylena                 | 1,000             | 8870            | NA       | 450      | 369      | NA       | NA                        | ND       | 83.4     | NA       | NA       | NA       | 0.62 J       | NA                          | ND       | NA       | 7        | ND       | ND       | ND       |
| Styrene                | 100               | 2330 🔅          | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | ND       |
| Total TICs             | 500               | 11670           | NA       | 1719     | 1290     | NA       | NA                        | ND       | 907      | NA       | NA       | NA       | 141.1        | NA                          | 6.1      | NA       | 166.3    | ND       | ND       | 23.6     |
|                        |                   |                 |          |          |          |          |                           |          |          |          |          |          |              |                             |          |          |          |          |          |          |
| SEMI-VOLATILE ORGANICS |                   |                 |          |          |          |          |                           |          |          |          |          |          |              |                             |          |          | ·····    | *        |          | <b></b>  |
| Phenol                 | 4,000             | ND              | NA       | ND       | NO       | NA       | NA                        | ND       | 4.6 J    | NA       | NA       | NA       | ND           | NA                          | NO       | NA       | ND       | ND       | ND       | ND       |
| Acenaphthene           | 400               | 13.2            | NA       | 5.8      | 5.4      | NA       | NA                        | ND       | 171      | NA       | NA       | NA       | 10.7         | NA                          | 13.1     | NA       | 223      | 33.4     | ND       | ND       |
| Acenaphthylene         | NS                | 246 J           | NA       | ND       | ND       | NA       | NA                        | ND       | 9.7      | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | 6.2      | ND       | ND       | ND       |
| Anthracene             | 2,000             | 11.2            | NA       | ND       | NO       | NA       | NA                        | ND       | 16.8     | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | 11.6     | ND       | ND       | ND       |
| Benzo(a)anthracene     | NS                | 2.0 J           | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | ND       |
| Benzo(a)pyrene         | NS                | ND              | NA       | ND       | ND       | NA       | NÀ                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | ND       |
| Benzo(b)fluoranthene   | NS                | ND              | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | NO       | ND       |
| Benzo(g,h,i)perylene   | NS                | ND              | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | ND       |
| Benzo(k)fluoranthene   | NS                | ND              | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | NO       |
| Carbazole              | NS                | ND              | NA       | ND       | ND       | NA       | NA                        | ND       | 10.7     | NA       | NA       | NA       | 2.4 J        | NA                          | ND       | NA       | 10.6     | ND       | ND       | ND       |
| Chrysene               | NS                | 2.0 J           | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | ND       |
| Dibenz(a,h)anthracene  | NS                | ND              | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | ND       | ND       | ND       | ND ND    |
| Dibenzofuran           | NS                | 6.7             | NA       | ND       | ND       | NA       | NA                        | ND       | 17.4     | NA       | NA       | NA       | 0.71 J       | NA                          | NO       | NA       | 17.6     | ND       | ND       | ND       |
| Fluoranthene           | 300               | 5.5             | NA       | ND       | ND       | NA       | NA                        | ND       | 58       | NA       | NA       | NA       | <u>1.1 J</u> | NA                          | ND       | NA       | 13.7     | ND       | ND       | ND       |
| Fluorene               | 300               | 46              | NA       | ND       | ND       | NA       | NA                        | ND       | 77       | NA       | NA       | NA       | 4.8 J        | NA                          | ND       | NA       | 23       | 1.7 J    | ND       | ND       |
| Indeno(1,2,3-cd)pyrene | NS                | ND              | NA       | ND       | ND       | NA       | NA                        | ND       | ND       | NA       | NA       | NA       | NO           | NA                          | ND       | NA       | ND       | ND       | ND       | ND       |
| 2-Methylnaphthalene    | 100               | 530             | NA       | 16.4     | 17       | NA       | NA                        | ND       | 25.5     | NA       | NA       | NA       | ND           | NA                          | ND       | NA       | 8.4      | ND       | 0.17 J   | ND       |
| Naphthalene            | 300               | <b>9940</b> 😒   | NA       | . 1040   | 1090     | NA       | NA                        | ND       | 490      | NA       | NA       | NA       | ND           | NA                          | 1.7 J    | NA       | 40.4     | 2.1 J    | 1.4 J    | ND       |
| Phenanthrene           | NS                | 46.5            | NA       | NO       | ND       | NA       | NA                        | ND       | 90.7     | NA       | NA       | NA       | ND           | NA                          | 1.6 J    | NA       | 40.2     | ND       | 1.3 J    | ND       |
| Pyrene                 | 200               | 6.2             | NA       | ND       | ND       | NA       | NA                        | ND       | 4.8 J    | NA       | NA       | NA       | ND           | NA                          | 1.3 J    | NA       | 10.4     | ND       | ND       | ND       |
|                        |                   |                 |          |          |          |          |                           |          |          |          |          |          |              |                             |          |          |          |          |          |          |
| INORGANICS             |                   |                 |          |          |          |          |                           |          |          |          |          |          |              |                             |          |          |          |          |          |          |
| Aluminum               | 200               | 530             | <200     | <200     | <200     | <200     | <200                      | <200     | 505      | <200     | NA       | NA       | <200         | <200                        | 1100     | <200     | <200     | 361      | 2210     | 826      |
| Antimony               | 20                | <5.0            | <5.0     | <5.0     | <5.0     | <5.0     | <5.0                      | <5.0     | <5.0     | <5.0     | NA       | NA       | <5.0         | <5.0                        | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     |
| Arsenic                | 8                 | <5.0            | <5.0     | <5.0     | <5.0     | <5.0     | <5.0                      | <5.0     | <5.0     | <5.0     | NA       | NA       | <5.0         | <5.0                        | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     |
| Barium                 | 2,000             | 345             | 244      | 742      | 712      | 671      | 679                       | <200     | <200     | <200     | NA       | NA       | 452          | 297                         | 231      | <200     | <200     | 242      | <200     | <200     |
| Beryllium              | 20                | <5.0            | <5.0     | <5.0     | <5.0     | <5.0     | <5.0                      | <5.0     | <5.0     | <5.0     | NA       | NA       | <5.0         | <5.0                        | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     |
| Cadmium                | 4                 | <4.0            | <4.0     | <4.0     | <4.0     | <4.0     | <4.0                      | <4.0     | <4.0     | <4.0     | NA       | NA       | <4.0         | <4.0                        | <4.0     | <4.0     | <4.0     | <4.0     | <4.0     | <4.0     |
| Chromium               | 100               | <10             | <10      | <10      | <10      | <10      | <10                       | <10      | <10      | <10      | NA       | NA       | <10          | <10                         | <10      | <10      | <10      | <10      | <10      | <10      |
| Copper                 | 1,000             | <25             | <25      | <25      | <25      | <25      | <25                       | <25      | <25      | <25      | NA       | NA       | <25          | <25                         | <25      | <25      | <25      | <25      | <25      | <25      |
| Iron                   | 300               | 25300           | 10400    | 848      | 539      | <100     | <100                      | <100     | 12000    | 242      | 67100    | <100     | 5810         | 241                         | 2820     | <100     | 807      | <100     | 2170     | 1140     |
| Lead                   | 10                | <3.0            | <3.0     | <3.0     | <3.0     | <3.0     | <3.0                      | <3.0     | <3,0     | 4.1      | NA       | NA       | 4.6          | <3.0                        | 3.3      | <3.0     | 7        | <3.0     | <3.0     | 3.3      |
| Manganese              | 50                | 9480            | 9000     | 738      | 650      | 682      | 679                       | 320      | 6360     | 5970     | 11800    | 715      | 3580         | 3090                        | 1650     | 1410     | 1200     | 330      | 45       | 780      |
| Mercury                | 2                 | <0.20           | <0.20    | <0.20    | <0.20    | <0.20    | <0.20                     | <0.20    | <0.20    | <0.20    | NA       | NA       | <0.20        | <0.20                       | <0.20    | <0.20    | 0.56     | <0.20    | <0.20    | <0.20    |
| Nickel                 | 100               | <40             | <40      | <40      | <40      | <40      | <40                       | <40      | <40      | <40      | NA       | NA       | <40          | <40                         | <40      | <40      | <40      | <40      | <40      | <0.20    |
| Selenium               | 50                | <5.0            | <10      | <5.0     | <5.0     | <5.0     | <5.0                      | <5.0     | <5.0     | <5.0     | NA       | NA       | <5.0         | <5.0                        | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     | 6.6      |
| Silver                 | NS                | <10             | <10      | <10      | <10      | <10      | <10                       | <10      | <10      | <10      | NA       | NA       | <10          | <10                         | <10      | <10      | <10      | <10      | <10      |          |
| Sodium                 | 50.000            | 75800           | 72600    | 134000   | 121000   | 120000   | 124000                    | 2530000  | 266000   | 230000   | NA       | NA NA    | 224000       | 174000                      | 102000   | 85400    |          |          |          | <10      |
|                        |                   | Line a commence |          |          |          |          | frank and a second second |          |          |          |          |          |              | a contraction of the second |          |          | 134000   | 271000   | 104000   | 62500    |
| Thailium               | 10                | 8.6             | 11.9     | <5.0     | <5.0     | <5.0     | <5.0                      | <5.0     | <5.0     | 7.3      | NA       | NA       | <5.0         | <5.0                        | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     | <5.0     |
| Vanadium               | NS                | <50             | <50      | <50      | <50      | <50      | <50                       | <50      | <50      | <50      | NA       | NÁ       | <50          | <50                         | <50      | <50      | <50      | <50      | <50      | <50      |
| Zinc                   | 5,000             | <20             | <20      | <20      | <20      | <20      | <20                       | <20      | <20      | <20      | NA       | NA       | <20          | <20                         | <20      | <20      | <20      | <20      | 23.5     | 22.4     |
| Cvanide                | 200               | 23.0            | NA       | <10      | <10      | NA       | NA                        | 110      | 84.0     | NA       | NA       | NA       | 330          | NA                          | <10      | NA       | <10      | <10      | <10      | <10      |

Notes: All results are shown in ug/l. NA = Not analyzed for this parameter. ND = Not Detected

NS = No Groundwater Quality Standards. Shaded/bold = Parameter exceeds GWQS.

J = Indicates an estimated value

\* = Groundwater filtered for metals analysis.

Public Service Electric and Gas Company Former Front Street Gas Works

#### Groundwater Sample Results

|                        | SAMPLE NO         | MW-6*        | P-1                 | P-1A         | P-2          | P-2A     | P-3          | P-3A           | P-4A       | AW-45          | AW-107       | AW-140       | Field blank  | Field blank  | Trip blank | Trip blank |
|------------------------|-------------------|--------------|---------------------|--------------|--------------|----------|--------------|----------------|------------|----------------|--------------|--------------|--------------|--------------|------------|------------|
| ANALYSIS:              | DATE              | 09/17/98     | 09/16/98            | 09/16/98     | 09/16/98     | 09/16/98 | 09/17/98     | 09/17/98       | 09/17/98   | 09/17/98       | 09/17/98     | 09/17/98     | 09/16/98     | 1            | 1 -        |            |
| ANAL 1313.             | Groundwater       | 09/17/30     | 03/10/30            | 03/10/30     | 03/10/30     | 09/10/96 | 09/17/30     | 09/1//90       | 0311130    | 09/1/190       | 09/17/90     | 09/1/196     | 09(10/30     | 09/17/98     | 09/14/98   | 09/16/98   |
|                        | Quality Standards | Į            |                     |              |              |          |              |                |            |                |              |              |              |              |            |            |
| VOLATILE ORGANICS:     | Coarry Standards  |              |                     |              |              |          |              |                |            |                |              |              |              |              |            |            |
| Benzene                | 1                 | ŇA           | ND                  | 1210         | ND           | 13.3     | 148          | 1900           | 10800      | 50.8           | 31,2         | 28.8         | ND           | ND           | ND         | ND         |
| Chloroform             | 6                 | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | ND         | ND             | 0.27 J       | 0.37 J       | ND           | ND           | ND         | ND         |
| Toluene                | 1.000             | NA           | 644                 | 18 J         | ND           | ND       | 0.79 J       | ND             | 40.2 J     | ND             | ND           | ND           | ND           | ND           | ND         | ND         |
| Elhylbenzene           | 700               | NA           | 758                 | 600          | 92.6         | 5        | 11.3         | 99.9 1         | 1590       | 0.47 J         | 0.36 J       | ND           | ND           | ND           | NO         | ND         |
| Xylene                 | 1,000             | NA           | 1940                | 357          | 47.3         | ND       | 4.4 J        | 28.7 J         | 4010       | ND             | 1.2 J        | 1.2 J        | ND           | ND           | ND ND      |            |
| Styrene                | 100               | NA           | 658                 | ND           | ND           | ND       | ND           | ND             | ND         | ND             | ND           | ND ND        | ND           | ND           | ND ND      | ND         |
| Total TiCs             | 500               | NA           | 4280                | 2240         | 1738         | 48.5     | 1888         | 2790           | 7580       | ND             | ND           | ND           | ND           | ND           | ND<br>ND   | ND         |
| Total Hos              |                   | 1 1925       | 1 4200              | 1 8440 S     | 1.0011.00    | 40.0     | 1000         | Dian TLAN City | 1900       | 1 (10)         |              |              |              |              |            | LNU        |
| SEMI-VOLATILE ORGANIC  | ¢.                |              |                     |              |              |          |              |                |            |                |              |              |              |              |            |            |
| Phenol                 | 4,000             | NA           | ND                  | ND           | ND           | ND       | ND           | 21.2           | 25.5       | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Acenaphthene           | 400               | NA           | 5.7                 | ND           | 122          | ND       | 95.4         | 1.7 J          | 14.7       | ND             | 13.6         | 20.1         | ND           | ND           | NA         | NA         |
| Acenaphthylene         | NS                | NA           | 21.1                | ND           | 11.8         | ND       | ND           | ND             | 1.7 J      | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Anthracene             | 2,000             | NA           | 2.5 J               | ND           | 9.1          | ND       | 4.1 J        | ND             | 2.8 J      | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Benzo(a)anthracene     | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | ND         | NO             | ND           | ND           | NO           | ND           | NA         | NA         |
| Benzo(a)pyrene         | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | ND         | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Benzo(b)fluoranthene   | NS                | NA           | ND                  | ND           | ND           | NO       | ND           | ND             | ND         | NO             | NO           | ND           | ND           | ND           | NA         | NA         |
| Benzo(g.h,i)perylene   | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | ND         | ND             | ND           | ND           | NO           | ND           | NA         | NA         |
| Benzo(k)fluoranthene   | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | NĎ         | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Carbazole              | NS                | ŇĂ           | 3.0 J               | ND           | ND           | ND       | 4.9 J        | ND             | 36.1       | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Chrysene               | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | ND         | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Dibenz(a,h)anthracene  | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | NO             | ND         | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Dibenzofuran           | NS                | NA           | 6.1                 | ND           | 7.1          | ND       | 8.5          | ND             | 11.8       | ND             | ND           | 0.95 J       | ND           | ND           | NA         | NA         |
| Fluoranthene           | 300               | NA           | 22J                 | ND           | 2.5 J        | ND       | 0.89 J       | ND             | ND         | ND             | ND           | 1.3 J        | ND           | ND           | NA         | NA         |
| Fluorene               | 300               | NA           | 75                  | ND           | 38.5         | ND       | 53.2         | ND             | 24         | ND             | ND           | 1.4 J        | ND           | ND           | NA         | NA         |
| indeno(1,2,3-cd)pyrene | NS                | NA           | ND                  | ND           | ND           | ND       | ND           | ND             | ND         | NO             | ND           | ND           | ND           | ND           | NA         | NA         |
| 2-Methylnaphthalene    | 100               | NA           | Ep. 135             | 77.5         | 13.3         | ND       | 11.6         | 0.95 J         | 722        | ND             | ND           | ND           | ND           | ND           | NA         | NA         |
| Naphthalene            | 300               | NA           | 3810                | 3340         | * 385        | 11.1     | 6.4          | 33.7           | 11200      | 1.6 J          | ND           | ND           | ND           | ND           | NA         | NA.        |
| Phenanthrene           | NS                | NA           | 23.5                | 1.6 J        | 55.6         | ND       | 25.7         | NO             | 15         | NO             | ND           | ND           | ND           | ND           | NA         | NA         |
| Pyrene                 | 200               | NA           | 1.8 J               | ND           | 2.2 J        | ND       | ND           | NO             | ND         | ND             | ND           | 1.2 J        | ND           | ND           | NA         | NA         |
|                        |                   |              |                     |              |              |          |              |                |            |                |              |              |              |              |            |            |
| INORGANICS             |                   |              |                     | 000          | Loss new sec |          |              |                |            | Louis and Sola |              |              |              |              |            | ·····      |
| Aluminum               | 200               | <200         | <5.0                | <200<br><5.0 | 228          | <200     | <200<br><5.0 | 17000          | <5.0       | 421            | <200<br><5.0 | <200         | <200         | <200         | NÁ         | NA         |
| Antimony               | 20                |              | < <u>5.0</u><br>6.4 | <5.0         | <5.0         | <5.0     | <5.0         | <5.0<br>12.7   |            | <5.0           |              | <5.0         | <5.0         | <5.0         | NA         | NA         |
| Arsenic<br>Barium      | 8                 | <5.0<br><200 | 492                 | 305          | 506          | 300      | 578          | 944            | 7.2<br>326 | <5.0<br><200   | <5.0<br><200 | <5.0         | <5.0         | <5.0         | NÁ         | NA         |
|                        | 2,000             | <200         | 492<br><5.0         | <5.0         | <5.0         | <5.0     | <5.0         | <5.0           | <5.0       | <200           | <200         | <200<br><5.0 | <200<br><5.0 | <200<br><5.0 | NA<br>NA   | NA         |
| Beryllium<br>Cadmium   | 20                | <4.0         | <4.0                | <4.0         | <4.0         | <4.0     | <4.0         | <4.0           | <1.0       | <4.0           | <5.0         | <5.0         | <5.0         | <5.0         | NA<br>NA   | NA<br>NA   |
| Chromium               | 100               | <10          | <10                 | <10          | <10          | <10      | <10          | 70.7           | <10        | <10            | <10          | <10          | <10          | <10          | NA<br>NA   | NA<br>NA   |
| Copper                 | 1,000             | <25          | <25                 | <25          | <25          | <25      | <25          | 27.6           | <25        | <25            | <25          | <25          | <25          | <10          | NA<br>NA   | NA<br>NA   |
| kron                   | 300               | <100         | 7180                | 254          | 2200         | 378      | 19600        | 71700          | 21200      | 1340           | 1650         | 3090 20      | <100         | <100         | NA<br>NA   | NA<br>NA   |
| Lead                   | 10                | <3.0         | <3.0                | <3.0         | <3.0         | <3.0     | <3.0         | 36.7           | 4.7        | 43.4           | 49.4         | 21           | <100         | <100         | NA<br>NA   | NA<br>NA   |
| Leao<br>Manganese      | 50                | 53.0         | 1070                | 488          | 3680         | 186      | 5890         | 13800          | 4./        | 43:4           | 48.4         | 1270         | <3.0         | <15          | NA<br>NA   |            |
| Mercury                | 2                 | <0.20        | <0.20               | <0.20        | <0.20        | <0.20    | <0.20        | 0.21           | 0.79       | <0.20          | 1.4          | <0.20        | <0.20        | <0.20        | NA<br>NA   | NA         |
| Nickel                 | 100               | <40          | <40                 | <40          | <40          | <40      | <40          | 53             | <40        | <40            | <40          | <0.20        | <0.20        | <40          | NA<br>NA   | NA<br>NA   |
| Selenium               | 50                | 6.2          | <5.0                | <5.0         | <5.0         | <5.0     | <5.0         | <5.0           | <5.0       | <5.0           | <5.0         | <5.0         | <5.0         | <5.0         | NA<br>NA   | NA<br>NA   |
| Silver                 | NS                | <10          | <10                 | <10          | <10          | <10      | <10          | <10            | <10        | <10            | <10          | <10          | <10          | <10          | NA NA      | NA<br>NA   |
| Sodium                 | 50,000            | 61200        | 220000              | 76800        | 133000       | 62600    | 242000       | 281000         | 114000     | 79300          | 75900        | 99800        | <5000        | <5000        | NA NA      | NA<br>NA   |
| Thatlium               | 10                | <5.0         | 5.6                 | <5.0         | <5.0         | <5.0     | <5.0         | 17.8           | 13.6       | <5.0           | <5.0         | <5.0         | <5.0         | <5.0         | NA<br>NA   | NA<br>NA   |
| Vanadium               | NS                | <5.0         | <50                 | <50          | <50          | <50      | <5.0         | <50            | <50        | <50            | <50          | <50          | <50          | <5.0         | NA<br>NA   | NA<br>NA   |
| Zinc                   | 5,000             | <20          | <20                 | <20          | <20          | <20      | <20          | 114            | 21.4       | 21.6           | <20          | <20          | 22.7         | <20          | NA<br>NA   | NA<br>NA   |
| Cyanide                | 200               | NA NA        | 480                 | <10          | <10          | <10      | <10          | 75.0           | <10        | <10            | <10          | <10          | <10          | <10          | NA<br>NA   | NA         |
| -yanua                 | 200               |              | NEW COUNTER         | <u> </u>     | 1 -10        |          | L_~IV        | 10.0           | 1 10       | 1              | 510          | L <u> 10</u> | L <u>510</u> | 1 510        | I NA       | I NA       |

Notes:

All results are shown in ug/l. NA = Not analyzed for this parameter. ND = Not Detected

NS = No Groundwater Quality Standards. Shaded/bold = Parameter exceeds GWQS.

J = Indicates an estimated value \* 
© Groundwater filtered for metals analysis.

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Public Service Electric and Gas Co. Former Front Street Gas Works

## Permeability Test Summary

| <del>ا</del> |          |                                                                                 |
|--------------|----------|---------------------------------------------------------------------------------|
| Well         | к        |                                                                                 |
| No.          | (ft/day) | Description of Unit Tested                                                      |
| MW-1         | 2.5      | silty fine Sand (29.21' to 34')                                                 |
| MW-1A        | 0.57     | 11" Sand & Gravel (54' to 55') and clean, weathered siltstone (58' to 58.5')    |
| MW-2         | 144.3    | silty, sandy grave! (12' to 14')                                                |
| MW-2         | 0.00012  | grey slightly organic clay (16-18')                                             |
| MW-2A        | 38       | fine-medium-coarse Sand (20' to 28.5'), except clay (22' to 24')                |
| MW-3         | 0.36     | fine-medium-coarse Sand (8.05' to 12.25')                                       |
| MW-3A        | 45.9     | fine-medium-coarse Sand & Gravel (>9" thick in 23-25' spoon)                    |
| MW-3BR       | 15.3     | Bedrock aquifer (28' to 54') friable; minor blocky layers (thickest 39' to 43') |
| MW-4BR       | 13.8     | Bedrock aquifer (32' to 62'+)                                                   |
| MW-5BR       | 0.0144   | Bedrock aquifer (42' to 72'+)                                                   |
| MW-6         | N/A      |                                                                                 |
| P-1          | 2.73     | silty fine Sand (28' to 40')                                                    |
| P-1A         | 1.86     | coarse-fine Sand (43' to 58.7')                                                 |
| P-2          | 62       | medium-fine sand (30.5' to 32.5')                                               |
| P-2A         | 16.3     | coarse-fine sand (54' to 66')                                                   |
| P-3          | 7.85     | silty coarse-fine sand (5.91' to 13.5')                                         |
| P-3A         | N/A      |                                                                                 |
| P-4          | N/A      |                                                                                 |
| P-4A         | 0.15     | silty coarse-fine Sand (17' to 26')                                             |
| B-13         | 0.0002   | grey slightly organic clay (20-22')                                             |
| B-14         | 0.00045  | grey slightly organic clay (16-17')                                             |
| B-20         | 0.00964  | silt (38-39.5')                                                                 |
| Ge           | ometric  |                                                                                 |
| <u> </u>     | lean K   | Aquifer                                                                         |
| 7.4          | 6 ft/day | Unconfined Wells (MW-1, MW-2, MW-3, P-1, P-2, and P-3)                          |
| 4.0          | 7 ft/day | Semi-Confined Wells (MW-1A, MW-2A, MW-3A, P-1A, P-2A, and P-4A)                 |
| 1.4          | 5 ft/day | Bedrock Wells (MW-3BR, MW-4BR, and MW-5BR)                                      |

### Note:

- N/A = Result Not Available

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Public Service Electric and Gas Co. Former Front Street Gas Works

# Groundwater Sampling for Natural Attenuation

|                       |            | Hor       | izon A    |           |     |        | Horizon B |           |
|-----------------------|------------|-----------|-----------|-----------|-----|--------|-----------|-----------|
|                       | Upgradient | Source    | Downgra   | dient     | So  | urce   | Downgra   |           |
|                       | MW-6       | MW-1      | MW-2      | MW-3      | MV  | V-1A   | MW-2A     | MW-3A     |
|                       | 17-Sep-98  | 16-Sep-98 | 23-Sep-98 | 17-Sep-98 | 16- | Sep-98 | 16-Sep-98 | 17-Sep-98 |
| BTEX                  | ND         | 17.51     | ND        | 0.07      |     | 2.79   | 0.80      | ND        |
| Naphthalene           | ND         | 9.94      | ND        | ND        |     | 1.04   | 0.49      | 0.0017    |
| Dissolved Oxygen      | 4.6        | 0.43      | 2.52      | 0.37      |     | 0.81   | 0.42      | 0.26      |
| Nitrate               | 27.4       | < 0.11    | 0.58      | < 0.11    |     | < 0.11 | < 0.11    | < 0.11    |
| Sulfate               | 98         | 66.3      | 621       | 35.4      |     | 25.1   | < 10      | 44.5      |
| Iron - Dissolved      | < 0.10     | 10.4      | < 0.10    | 0.241     |     | < 0.10 | 0.242     | < 3.0     |
| Iron - Total          | 1.14       | 25.3      | 67.1      | 5.81      |     | 0.648  | 12        | 2.82      |
| Manganese - Dissolved | 0.686      | 9.00      | 0.715     | 3.09      |     | 0.682  | 5.97      | 1.41      |
| Manganese - Total     | 0.78       | 9.48      | 11.8      | 3.58      |     | 0.738  | 37        | 1.65      |
| Alkalinity, Total     | 66.2       | 483       | 155       | 316       |     | 491    | 543       | 172       |
| TOC                   | 1.7        | 14.2      | NS        | 6.4       |     | 41.1   | 7.9       | 1.2       |
| TDS                   | 564        | 564       | NS        | 1160      |     | 751    | 1020      |           |
| рН                    | 7.24       | 6.64      | 6.75      | 6.77      |     | 6.99   | 7.17      | 7.28      |
| Temperature (C)       | 17.85      | 18.9      | 22.68     | 20.12     |     | 18.97  | 17.12     | 15.99     |
| Conductivity (uS/cm)  | 430        |           | 11358     | 1684      |     | 1049   | 1524      | 8.24      |
| RedOx Potential (mV)  | -7.7       | 14.5      | 8.4       | 6.5       |     | -5.4   | -15       | -22.4     |

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Public Service Electric and Gas Co. Former Front Street Gas Works

# Expressed Assimilative Capacity

|                                                                                     | Upgradient                           | Source                                 |                          |                       |                                       |        |
|-------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------|--------------------------|-----------------------|---------------------------------------|--------|
| TEAP                                                                                | MW-6<br>17-Sep-98                    | MW-1<br>16-Sep-98                      | concentration<br>change  | Utilization<br>Factor | Expressed<br>Assimilative<br>Capacity | %      |
| Dissolved Oxygen<br>Nitrate<br>Sulfate<br>Iron - Dissolved<br>Manganese - Dissolved | 4.6<br>27.4<br>98<br>< 0.10<br>0.686 | 0.43<br>< 0.11<br>66.3<br>10.4<br>9.00 | 27.40<br>31.70<br>-10.40 | 4.86<br>4.71<br>21.9  | 6.73<br>0.47                          | 37.7%  |
| Total                                                                               |                                      |                                        | ·                        |                       | 14.94                                 | 100.0% |

NOTES: all results are in mg/l

**TEAP - Terminal Electron Acceptor Process** 

EAC - Expressed Assimilative Capacity

Utilization factors from Bioplume III User's Manual, version 1.0, EPA January 1998

## Public Service Electric and Gas Company Former Front Street Gas Works

## **Calibrated MODFLOW Ground Water Model Values**

| Layer | Zone | Horizontal<br>Hydraulic<br>Conductivity<br>(ft/day) | Vertical<br>Hydraulic<br>Conductivity<br>(ft/day) | Specific<br>Storage<br>(1/ft) | Specific<br>Yield | Layer<br>Type | Description                                           |
|-------|------|-----------------------------------------------------|---------------------------------------------------|-------------------------------|-------------------|---------------|-------------------------------------------------------|
| 1     | а    | 20                                                  | 20                                                | N/A                           | 0.25              | Unconfined    | Deltaic Deposits (western portion of site)            |
| 1     | b    | 10                                                  | 1                                                 | N/A                           | 0.25              | Unconfined    | Fill (eastern portion of site)                        |
| 2     | а    | 5E-04                                               | 5E-04                                             | 3E-06                         | 1E-04             | Confined      | Gray Clay (eastern portion of site)                   |
| 2     | b    | 5E-02                                               | 5E-03                                             | 1E-05                         | 1E-03             | Confined      | Brown Silt (western portion of site)                  |
| 3     | а    | 3.51                                                | 3.51                                              | 1E-05                         | 0.1               | Confined      | Glacial Till                                          |
| 3     | b    | 70                                                  | 0.175                                             | 1E-05                         | 0.1               | Confined      | Glacial Till (overlying Buried Valley Aquifer System) |
| 4     | а    | 2                                                   | 0.2                                               | 3E-07                         | 0.01              | Confined      | Bedrock                                               |
| 4     | b    | 2000                                                | 0.2                                               | 3E-07                         | 0.2               | Confined      | Buried Valley Aquifer                                 |

Note:

- N/A = Specific Storage Not Applicable in an Unconfined Layer

Public Service Electric and Gas Company Former Front Street Gas Works

#### UST Soil Sample Results

|                        | L.           | SAMPLE NO   |            | E3-1     | E3-2      | E3-3     | E3-4     | E3-5     | E4-1     | E4-2     | E4-3     | E4-4     | UST7-1      | UST7-2   | UST7-3       | UST7-4   | UST7-5   | UST8-1          | UST8-2           | UST8-3                                | UST8-4   | EXC-1    |
|------------------------|--------------|-------------|------------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|-------------|----------|--------------|----------|----------|-----------------|------------------|---------------------------------------|----------|----------|
|                        |              | DEPTH (FT B | BGS1       | 8        | 8         | 8        | 8        | 8        | 7'       | 7'       | 7        | 7        | 8           | 8        | 8            | 8        | 8'       | 8'              | 8                | 8                                     | 6'       | 10       |
| ANALYSIS:              |              | DATE        | ,          | 06/08/98 | ·····     | 06/08/98 | 06/08/98 | 06/08/98 | 06/05/98 | 06/05/98 | 06/05/98 | 06/05/98 | 06/05/98    | 06/05/98 | 06/05/98     | 06/05/98 | 06/05/98 | 06/05/98        | 06/05/98         | 06/05/98                              | 06/05/98 | 06/10/98 |
| ANALTSIS:              | RDC          | NRDC        | IGW        | 00/00/30 | 00/00/30  | 00/00/30 | 00/00/30 | 00/04/30 | 00/00/20 | 00100100 | 00/00/00 | 00/00/30 | 00/00/30    | 00/00/20 | 00/00/00     | 00/00/00 | 00/00/00 | 00100100        | 00/03/30         | 00/00/20                              | 00/03/30 | 00110100 |
| svoc:                  | Criteria     | Criteria    | Criteria   |          | <u> </u>  |          |          |          | <u> </u> |          |          |          |             |          |              |          |          |                 |                  | · · · · · · · · · · · · · · · · · · · |          |          |
| Naphthalene            | 230          | 4200        | 100        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 0.85     | NÄ       | NA          | NA       | NA           | NA       | NA       | NA              | NĂ               | NA                                    | NA       | ŇA       |
| Acenaphthene           | 3400         | 10000       | 100        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 0.23 J   | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Fluorene               | 2300         | 10000       | 100        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 0.65     | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Anthracene             | 10000        | 10000       | 100        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 2.1      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Fluoranthene           | 2300         | 10000       | 100        | NA       | NĂ        | NA       | NA       | NA       | NA       | NA       | 3.7      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Pyrene                 | 1700         | 10000       | 100        | NA       | NA        | NA       | NA       | NA       | NÀ       | NA       | 6.4      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Benzo(a)anthracene     | 0.9          | 4           | 500        |          | NA        | NA       | NA       | NA       | NA       | NA       | 3.2      | NA       | NA          | NĂ       | NA           | NÁ       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Chrysene               | 9            | 40          | 500        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 3.8      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Benzo(b)fluoranthene   | 0.9          | 4           | 50         |          | NA        | NA       | NA       | NA       | NA       | NA_      | 4.6      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Benzo(k)fluoranthene   | 0.9          | 4           | 500        |          | NA        | NA       | NA       | NA       | NA       | NA       | 1.7      | NĂ       | NA          | NA       | NA           | NĂ       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Benzo(a)pyrene         | 0.66         | 0.66        | 100        |          | NA        | NA       | NA       | NA       | NA       | NA       | 3.2      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Indeno(1,2,3-cd)pyrene | 0.9          | 4           | 500        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 4.7      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Dibenz(a,h)anthracene  | 0.66         | 0.66        | 100        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 1.3      | NA       | NA          | NA       | NA           | NÁ       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Nitrobenzene           | 28           | 520         | 10         |          | NA        | NA       | NA       | NA       | NA       | NA       | 1.2      | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| 2.4-dinitrotoluene     | 1            | 4           | 10         |          | NĀ        | NA       | NA_      | NÁ       | NA       | NA       | 0.32 J   | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| N-nitrosodiphenylamine | 140          | 600         | 100        | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 0.092 J  | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
|                        |              |             |            |          |           |          |          |          |          |          |          |          |             |          |              |          |          |                 |                  |                                       |          |          |
| VOCs:                  |              |             |            | 1 11     | 1 14 1    | 114      |          | 1        |          | NA       | 0.53 J   | NA       | ND          |          |              | ND       |          |                 | 0.06.1           |                                       |          | - 10     |
| Benzene                | 3            | 13          |            | NA       | NA NA     | NA<br>NA | NA<br>NA | NA<br>NA | NA       | NA       | 0.81     | NA       | ND<br>0.6 J | 0.2 J    | ND<br>0.18 J | 0.16 J   | ND<br>ND | 0.2 J<br>0.35 J | 0.35 J<br>0.42 J | ND<br>0.26 J                          | ND<br>ND | ND       |
| Toluene                | 1000         | 1000        | 500<br>100 | NA<br>NA | NA        | NA       | NA<br>NA |          | NA       | NA       | ND       | NA       | ND          | 0.64 J   | ND ND        | ND       | ND       | 0.35 J          | ND               | ND                                    | ND       | ND       |
| Ethylbenzene           | 1000]<br>410 | 1000        | 10         | <u> </u> | NA NA     | NA       | NA NA    | NA NA    | NA       | NA       | 0.95     | NÅ       | 1.9         | 8.7      | 0.16 J       | 0.24 J   | ND       | 0.55 J          | 0.53 J           | 0.26 J                                | ND       | ND ND    |
| Xylene                 | 210          | 1000        | 50         |          | NA NA     | NA       |          | NA       |          | NA       | ND       | NA       | 2.2         | 2.1      | 0.28 J       | ND       | ND       | 0.00            | 0.99             | 2.8                                   | ND       | ND       |
| 1,1,1-TCA<br>PCE       | - 210        | 6           |            | NA       | NA NA     | NA       | NA       | NA       | NA       | NA       | ND       | NA       | 0.19 J      | 0.17 J   | ND           | ND       | ND       | ND              | ND               | 0.43                                  | ND       | ND       |
| 1.1-DCA                | 570          | 1000        | 10         |          | NA        | NA       | NA       | NA       | NA       | NA       | ND       | NA       | ND          | 0.6 J    | ND           | ND       | ND       | ND              | ND               | 0.26 J                                | ND       | <u> </u> |
| 1,1-DQA                |              |             |            | 1        |           |          | L        | <u></u>  |          |          |          |          | L           |          | <u> </u>     | <u> </u> | <u> </u> |                 |                  | 1_7757-7                              |          |          |
| Inorganic Elements:    |              |             |            |          |           |          |          |          |          |          |          |          |             |          |              |          |          |                 |                  |                                       |          |          |
| Antimony               | 14           | 340         | NS         | NA       | NA        | NA       | NA       | NA       | NA       | NA       | ND       | NA       | NA          | NA       | NA           | NÀ       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Barium                 | 700          | 47000       | NS         |          | NA        | NA       | NA       | NA NA    | NA       | NA       | 82       | NA       | NA          | ŇA       | NA NA        | NA       | NĀ       | NA              | NA               | NA                                    | NA       | NA       |
| Beryllium              | 1            | 1           | NS         | NA       | NA        | NA       | NA       | NA       | NA       | NA       | 0.21 J   | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA NA            | NA                                    | NĂ       | NA       |
| Cadmium                | 39           | 100         | NS         | NA       | NA        | NA       | NA       | NA_      | NA       | NA       | ND       | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Chromium               | 78000        | 78000       | NS         |          | NA        | NA       | NA       | NA       | NA       | NA       | 8        | NA       | NA          | NA       | NA           | NA       | NA       | NA NA           | NA               | NA                                    | NA       | NA       |
| Copper                 | 600          | 600         | NS         |          | NA        | NA       | NA       | NA       | NA       | NA       | 33.3     | NA       | NA          | NA       | NA_          | NA       | NA       | NA              | NA NA            | NĂ                                    | NA       | NA       |
| Nickel                 | 250          | 2400        | NS         |          | NA        | NA       | NA       | NA_      | NA_      | NA       | 7        | NA       | NA          | NA       | NA NA        | NA.      | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Silver                 | 110          | 4100        | NS         |          | NA        | NA       | NA       | NA       | NA<br>NA | NA       | 1.8 J    | NA       | NA          | NA       | NA NA        | NA       | NA       | NA              | NA               | NA                                    | NA       | NA       |
| Vanadium               | 370          | 7100        | NS NS      | NA_      | NA        | NA       | NA       | NA       | NA NA    | NA       | 13.6     | NA       | NA          | NA       | NA           | NA NA    | NA       | NA              |                  | NA                                    | NA       | NA       |
| Zinc                   | 1500         | 1500        | NS         |          | NA<br>NA  | NA<br>NA | NA<br>NA | NA<br>NA | NA<br>NA | NA       | ND 10    | NA<br>NA | NA<br>NA    | NA<br>NA |              | NA<br>NA | NA<br>NA | NA<br>NA        | NA<br>NA         | NA<br>NA                              | NA<br>NA | NA<br>NA |
| Thallium               | 2            | 20          | NS         |          | NA<br>NA  | NA<br>NA | NA<br>NA | NA<br>NA | NA<br>NA | NA       | 6        | NA       | NA          |          | NA NA        | NA<br>NA | NA<br>NA | NA<br>NA        | NA<br>NA         |                                       | NA<br>NA | NA<br>NA |
| Arsenic                | 20           | 3100        | NS         |          | NA<br>NA  | NA       | NA<br>NA | NA       | NA<br>NA | NA NA    | ND       | NA       | NA NA       | NA NA    | NA NA        | NA -     | NA       | NA              | NA<br>NA         | NA<br>NA                              | NA       | NA<br>NA |
| Selenium               | 400          | 600         | NS<br>NS   |          | NA NA     | NA<br>NA | NA       | NA<br>NA | NA       | NA       | 401      | NA       | 222         | 141      | 113          | 128      | 63       | 143             | 98               | 78                                    | 19       | 73       |
| Lead                   | 400          | 270         | N3         |          | NA NA     | NA       | NA       | NA<br>NA | NA       | NA       | 3.3      | NA       | NA NA       | NA       | NA NA        | NA NA    | NA       | NA NA           | NĂ               | 10 NA                                 | NA       | NA NA    |
| Mercury                | 1100         | 21000       | NS<br>NS   |          | NA NA     | NA NA    | NA NA    | NA NA    | NA       | NA       | NA       | NA       | NA NA       | NA       | NA           | NA       | NA       | NA              | NA               | NA NA                                 | NA<br>NA | NA NA    |
| Cyanide                |              | 21000       | na         | 1.1      | 1 197     |          | 1        | 1        |          | 1 100    |          |          |             | 1 104    |              |          | 1        | 1_10            | 1. 110           | 1 100                                 |          |          |
| TPHC:                  | NSI          | NS          | NS         | 64       | 26 J      | 58       | 99       | ND       | 126      | 171      | 303      | 268      | I NA        | NA       | NA           | NA NA    | NA       | I NA            | T NA             | T NA                                  | NA       | NA       |
| PCBs:                  | 0.49         | 2           | 50         |          | NA        | NA       | NA       | NA       | NA       | NA       | ND       | NA       | NA          | NA       | NA           | NA       | NA       | NA              | NA NA            | NA                                    | NA       | NA       |
| [1 Gina;               | V.45[        | 4           |            | 1        | · · · · · |          |          |          |          |          |          |          |             | <u> </u> |              | · ····   |          | L               |                  |                                       |          | I        |

Notes:

Actes: All results are shown in mg/kg. FT BGS = Feet Below Ground Surface ND = Not Detected NS = No Soil Cleanup Criterion. NA = Not Analyzed For Shaded/bold = Parameter exceeds most stringent SCC.

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Public Service Electric and Gas Company Former Front Street Gas Works

#### **UST Soil Sample Results**

| [     | SAMPLE NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EXC-2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EXC-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EXC-4                                                                                                                          |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
|       | DEPTH (FT B                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BGS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 10'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10'                                                                                                                            |
|       | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 06/10/98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 06/10/98                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 06/10/98                                                                                                                       |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | IGW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <u> </u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
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|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <u>.</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | - NA                                                                                                                           |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NA<br>NA                                                                                                                       |
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|       | 520                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
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| 140   | 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
|       | ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ND                                                                                                                             |
| 210   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 50                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ND                                                                                                                             |
| 4     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ND_                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ND                                                                                                                             |
| 570   | 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                                                                                              |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
| 14    | 340                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 700   | 47000                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 1     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NÁ _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                                                                                                                             |
| 39    | 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 78000 | 78000                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 600   | 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 250   | 2400                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 110   | 4100                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 370   | 7100                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 5 NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 1500  | 1500                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 2     | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 20    | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 63    | 3100                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NÁ                                                                                                                             |
| 400   | 600                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 259                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 474                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.6 J                                                                                                                          |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
|       | 21000                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NA                                                                                                                             |
| 1     | 2,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                |
| NS    | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | SI NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | I NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | NA                                                                                                                             |
|       | RDC           Criteria           2300           10000           2300           10000           2300           10000           0.9           0.9           0.66           28           1           140           3           10000           10000           10000           10000           10000           10000           10000           10000           10000           10000           10000           110           39           780000           6000           2100 | DEPTH (FT E           RDC         NRDC           Criteria         Criteria           2300         10000           10000         10000           10000         10000           10000         10000           10000         10000           10000         10000           0.9         4           0.9         4           0.66         0.66           28         520           1         40           0.66         0.66           28         520           1         4           0.66         0.66           28         520           1         4           0.66         0.66           28         520           1         4           1400         1000           410         1000           410         1000           1         1           39         100           78000         78000           600         600           1500         1500           1500         1500           1500         1500 | RDC<br>Criteria         NRDC<br>Criteria         IGW<br>Criteria           230         4200         100           3400         10000         100           2300         10000         100           2300         10000         100           10000         1000         100           2300         10000         100           10000         1000         100           2300         10000         100           0.000         1000         100           0.9         4         500           0.9         4         500           0.9         4         500           0.9         4         500           0.9         4         500           0.66         0.66         100           28         520         100           1         4         10           140         600         1000           1000         1000         100           1000         1000         100           1000         1000         100           1000         1000         100           1000         1000         100           1000< | DEPTH (FT BGS)         10           DATE         06/10/98           RDC         NRDC           Criteria         Criteria           230         4200           10000         100           2300         10000           10000         100           2300         10000           10000         100           10000         100           10000         100           10000         100           10000         100           10000         100           10000         100           10000         100           10000         100           10000         100           10000         100           0.9         4           500         NA           0.9         4           0.9         4           0.00         NA           0.66         0.66           100         NA           14         10           140         600           1000         100           1000         100           1000         100           1000 | DEPTH (FT BGS)         10°         10°           DATE         06/10/98         06/10/98           RDC         NRDC         IGW |

.

Notes:

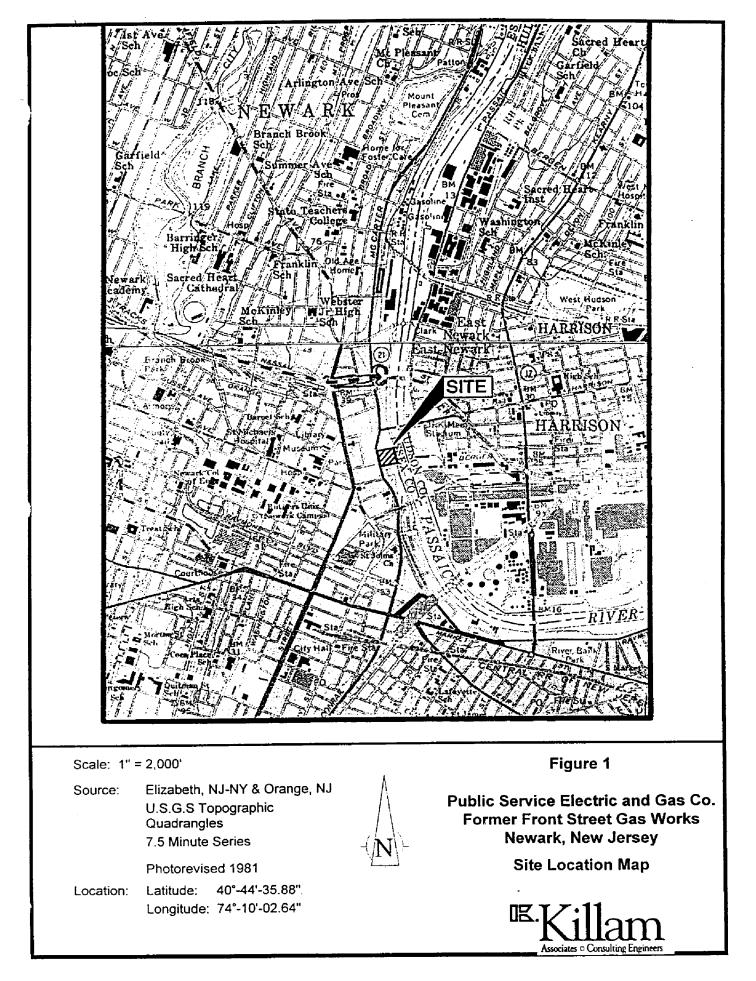
Notes: All results are shown in mg/kg. FT BGS = Feet Below Ground Surface ND = Not Detected NS = No Soil Cleanup Criterion. NA = Not Analyzed For Shaded/bold = Parameter exceeds most stringent SCC. k:\eng\263709\tables\ustsoils.wb3

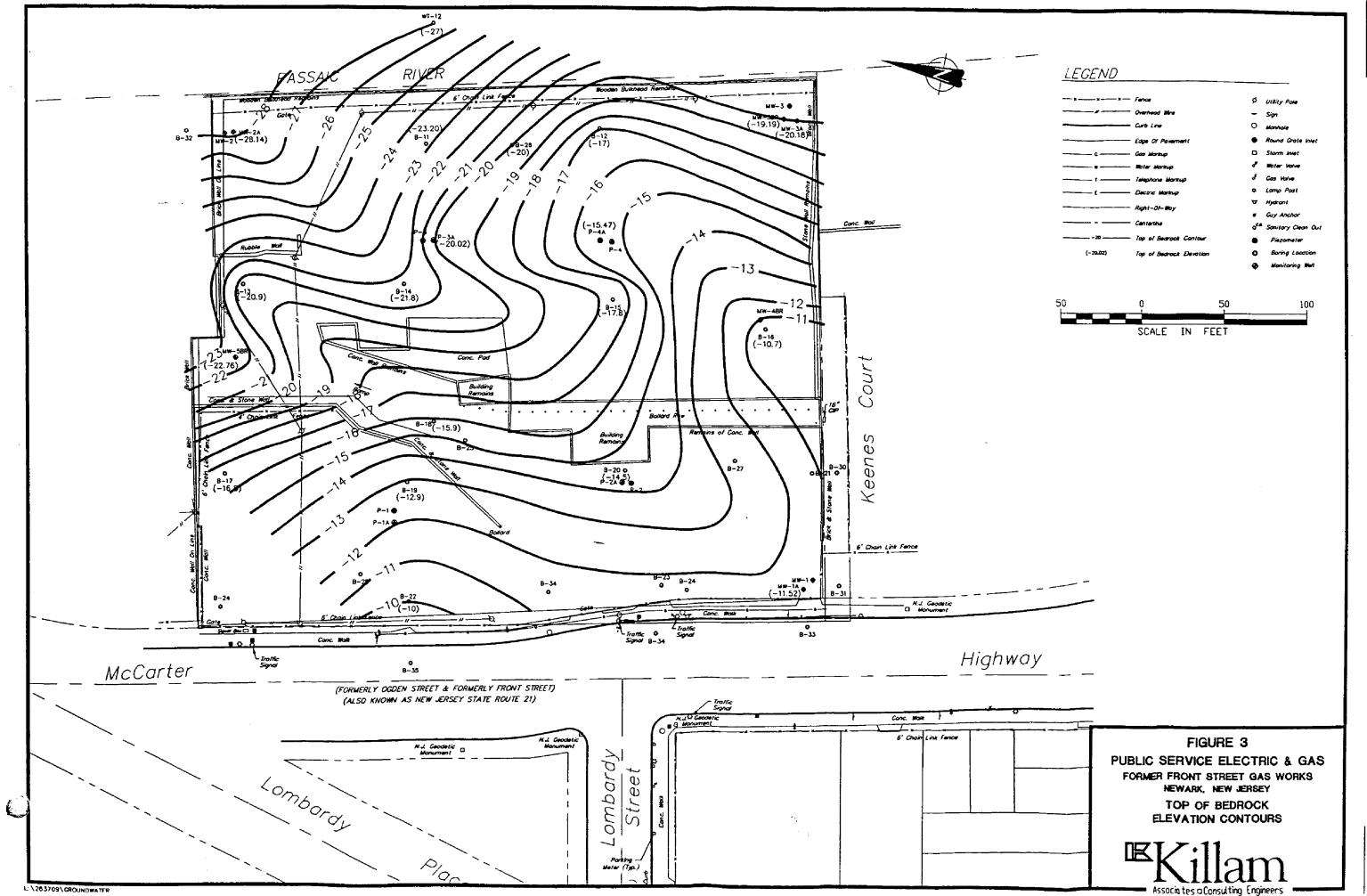
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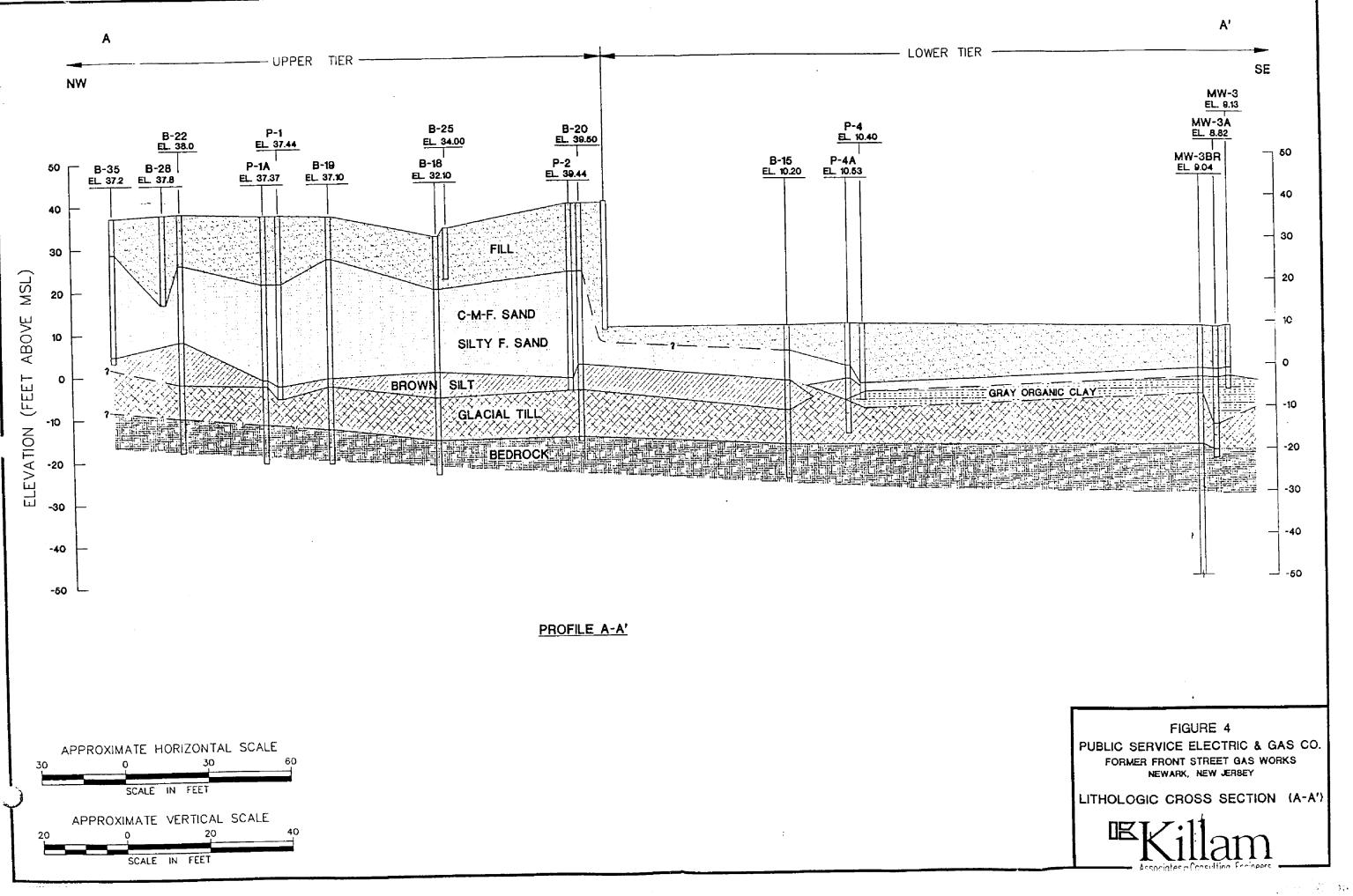
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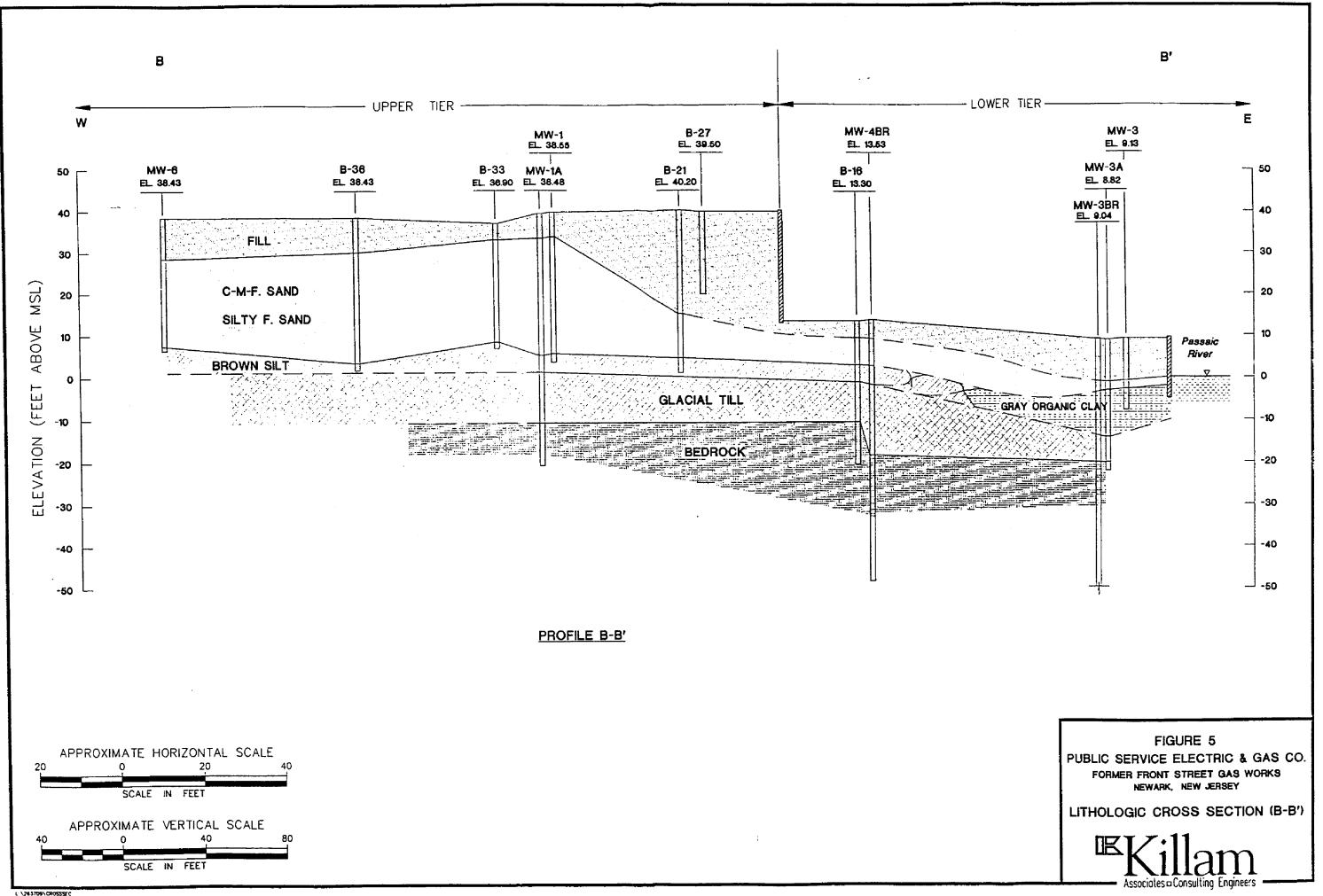
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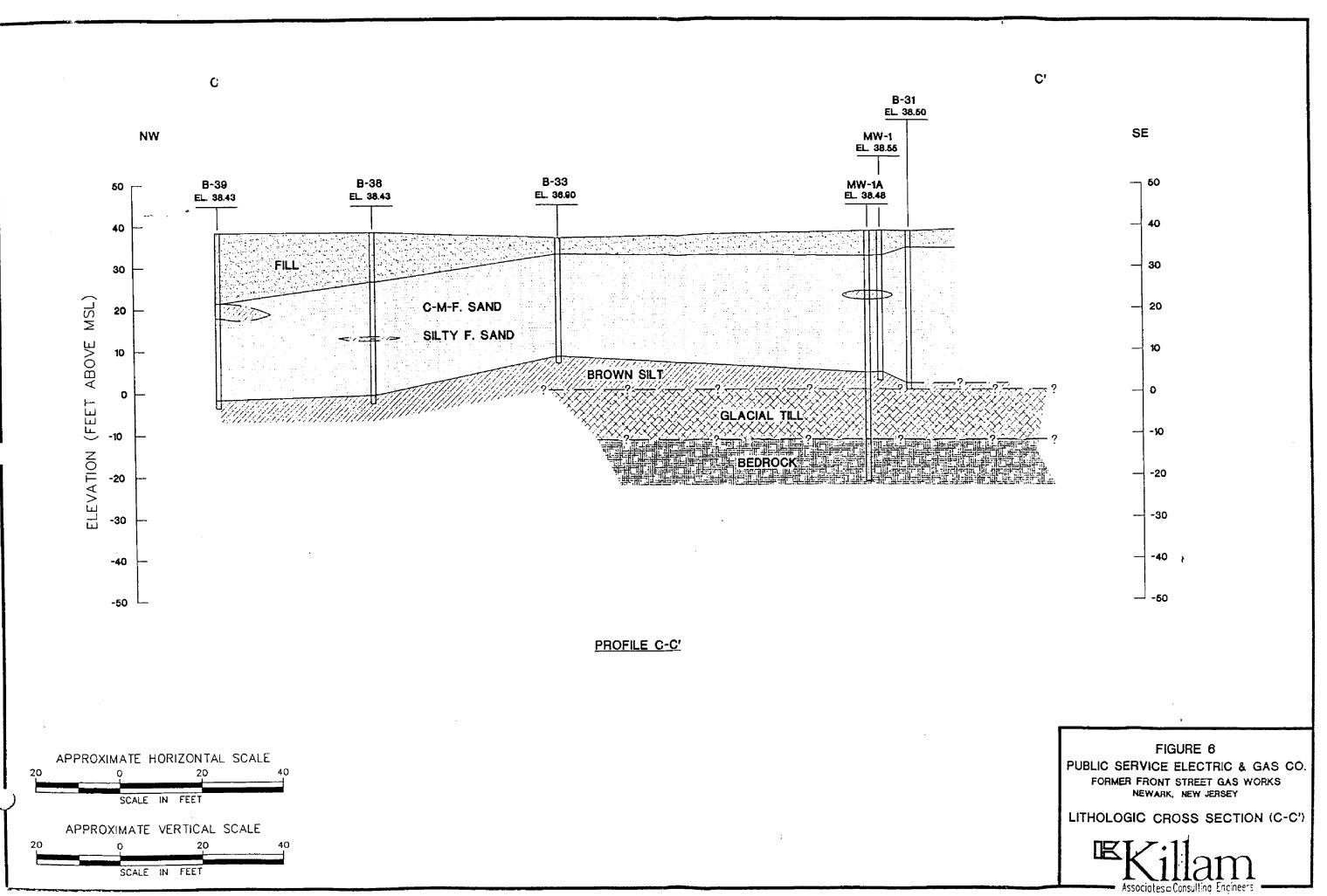


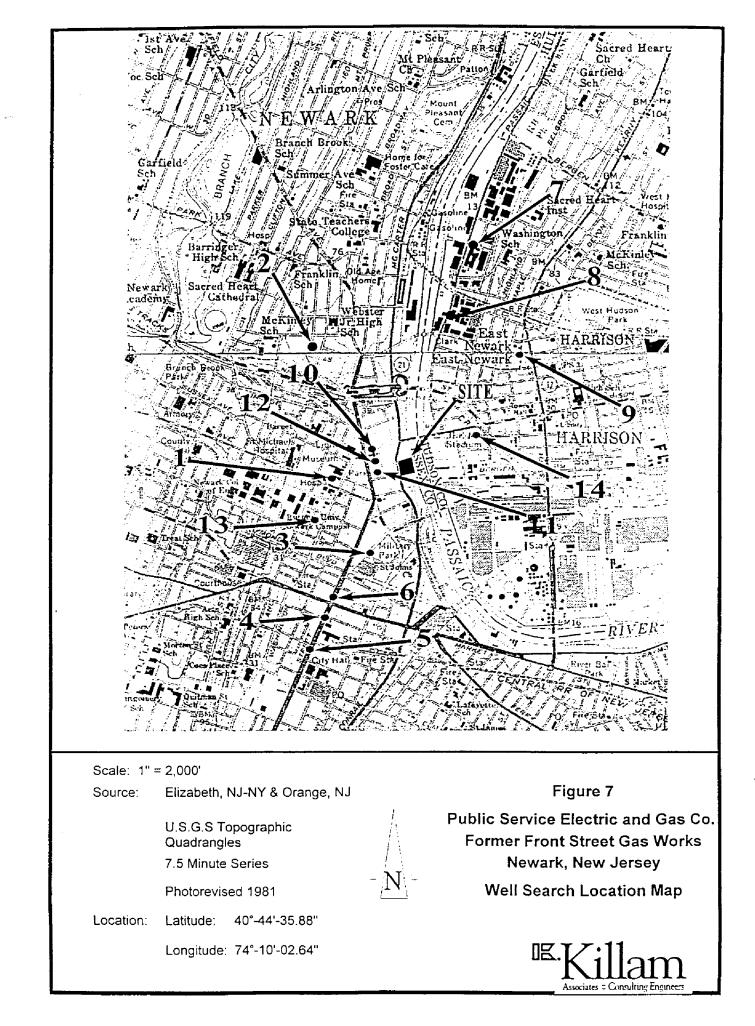


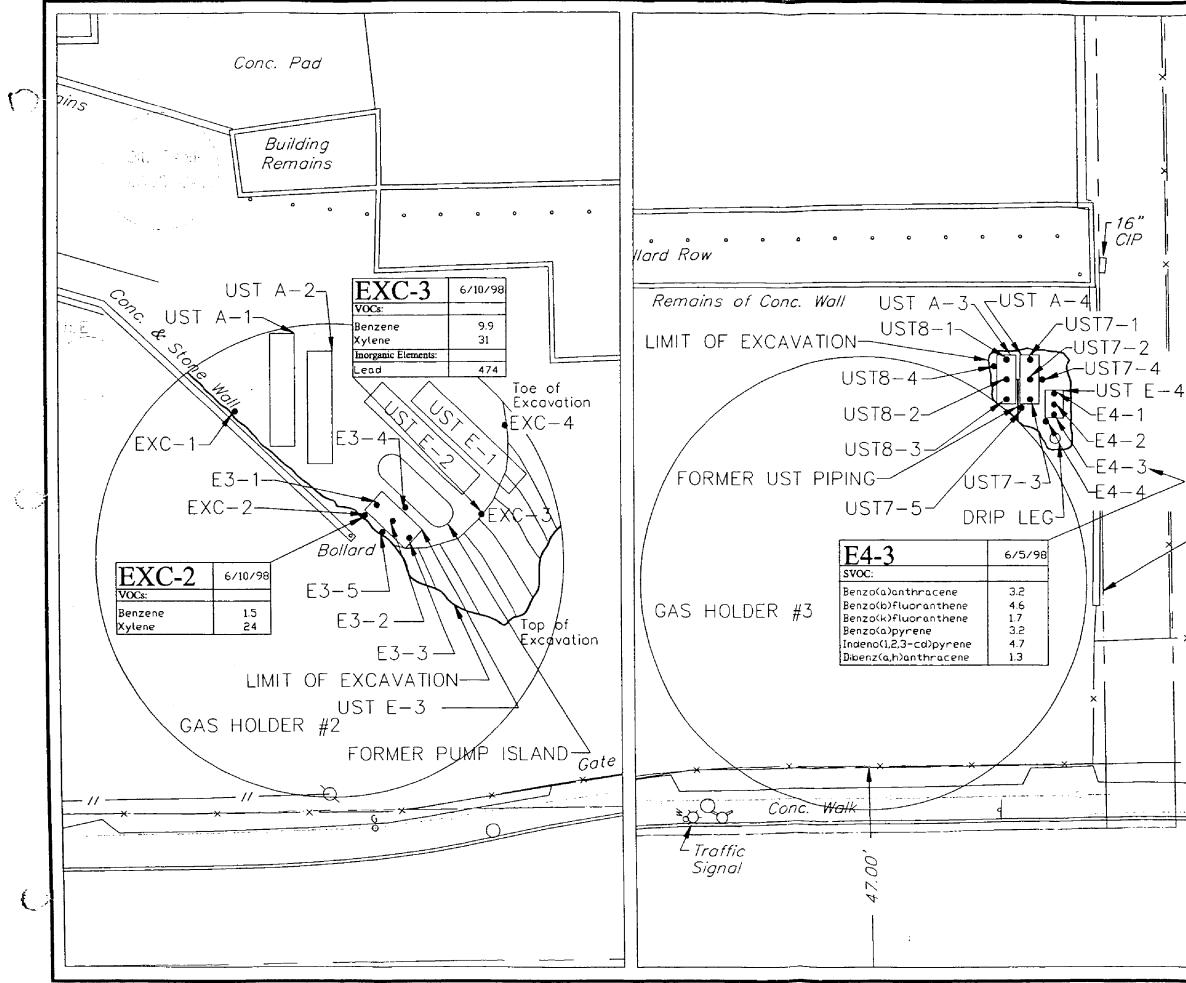
TIERRA-B-018140



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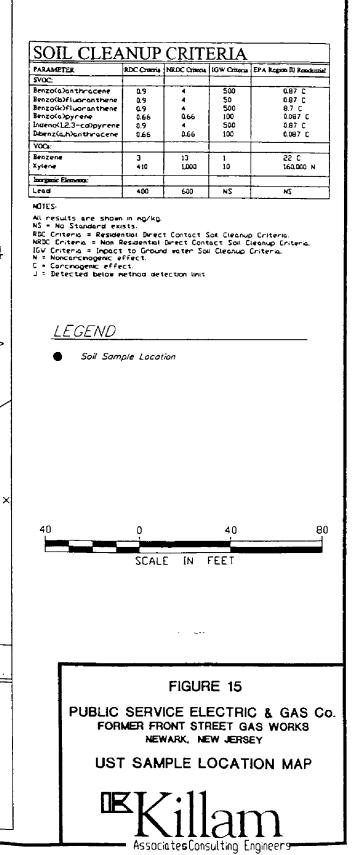


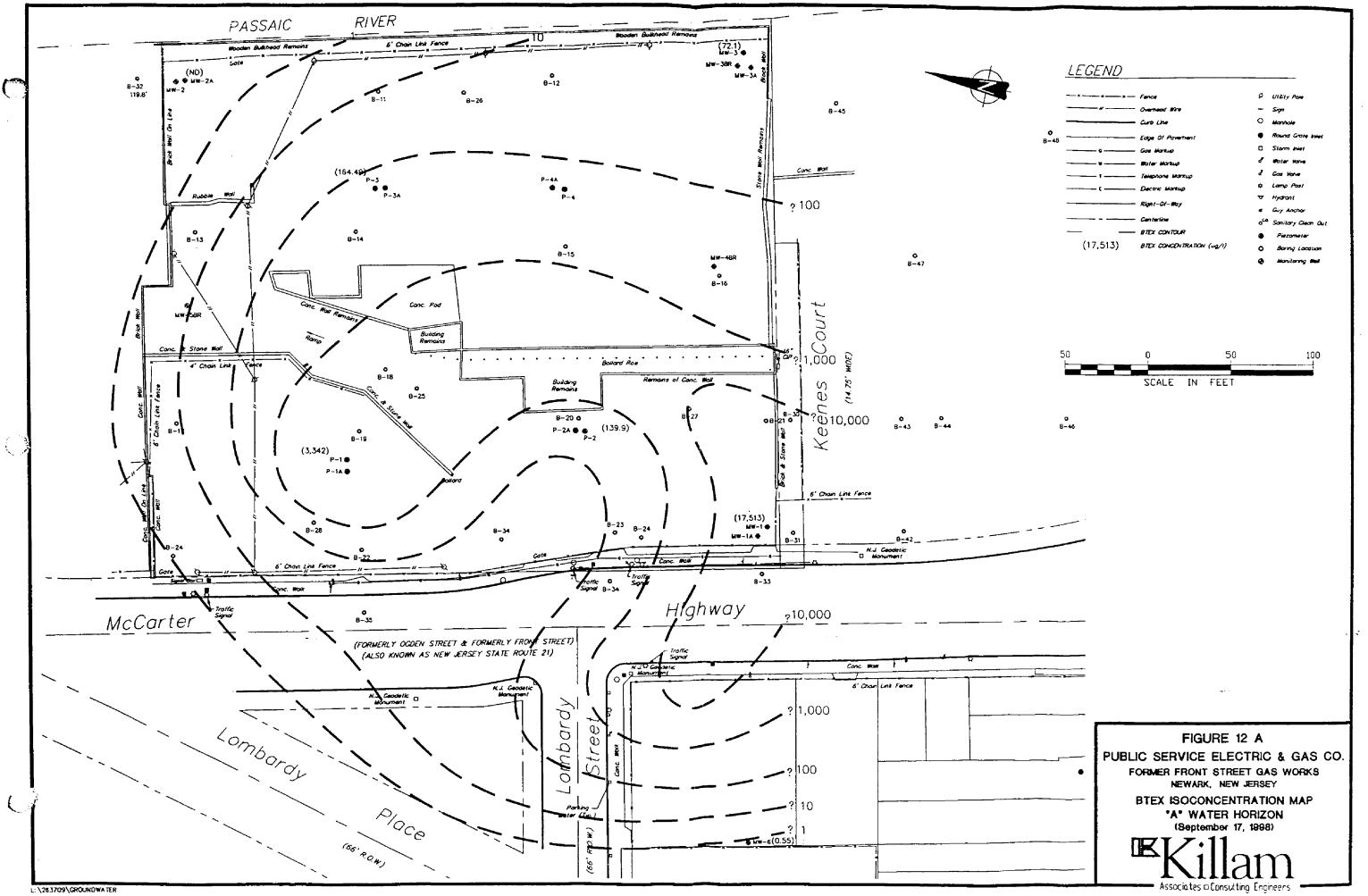


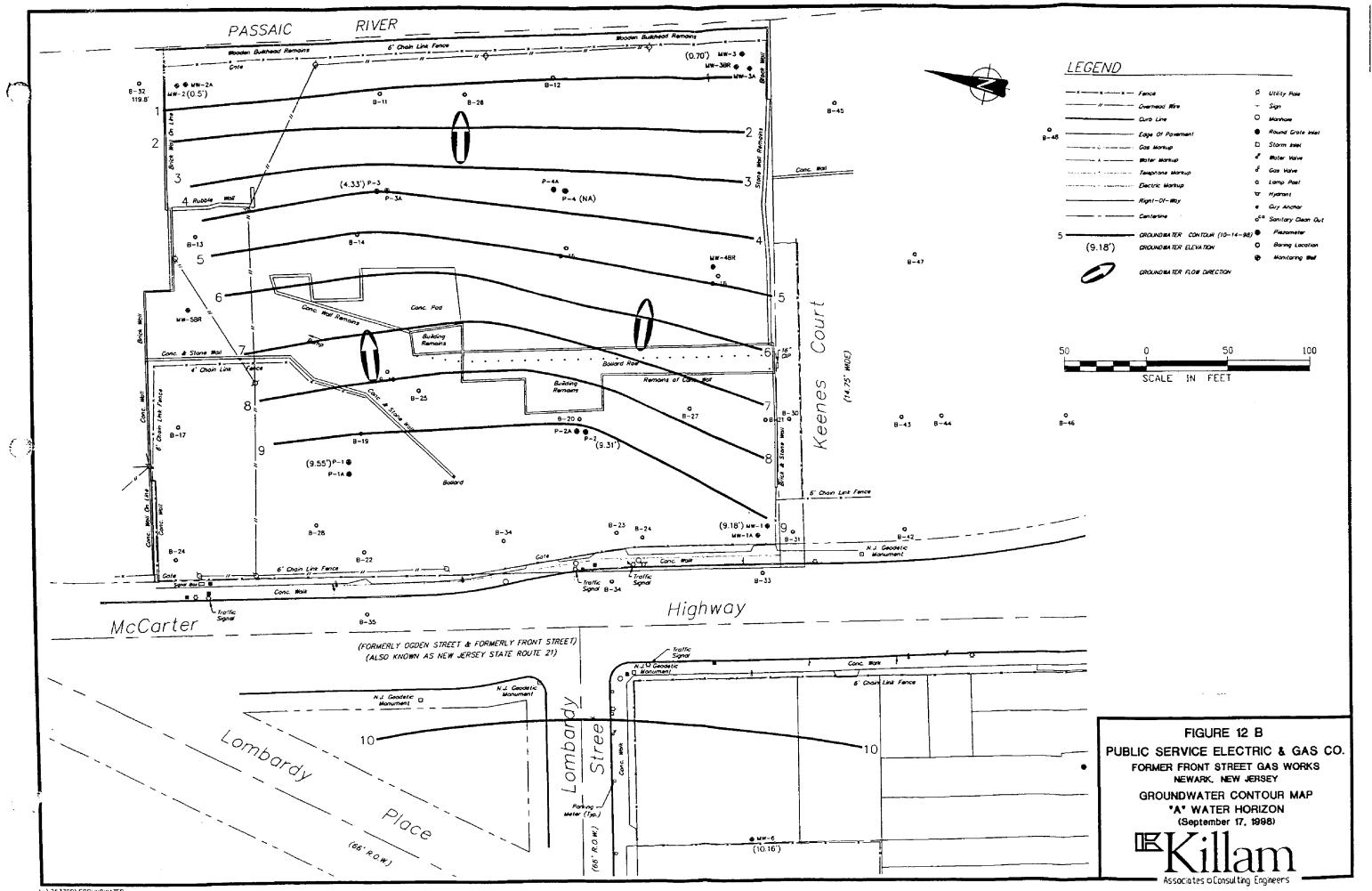


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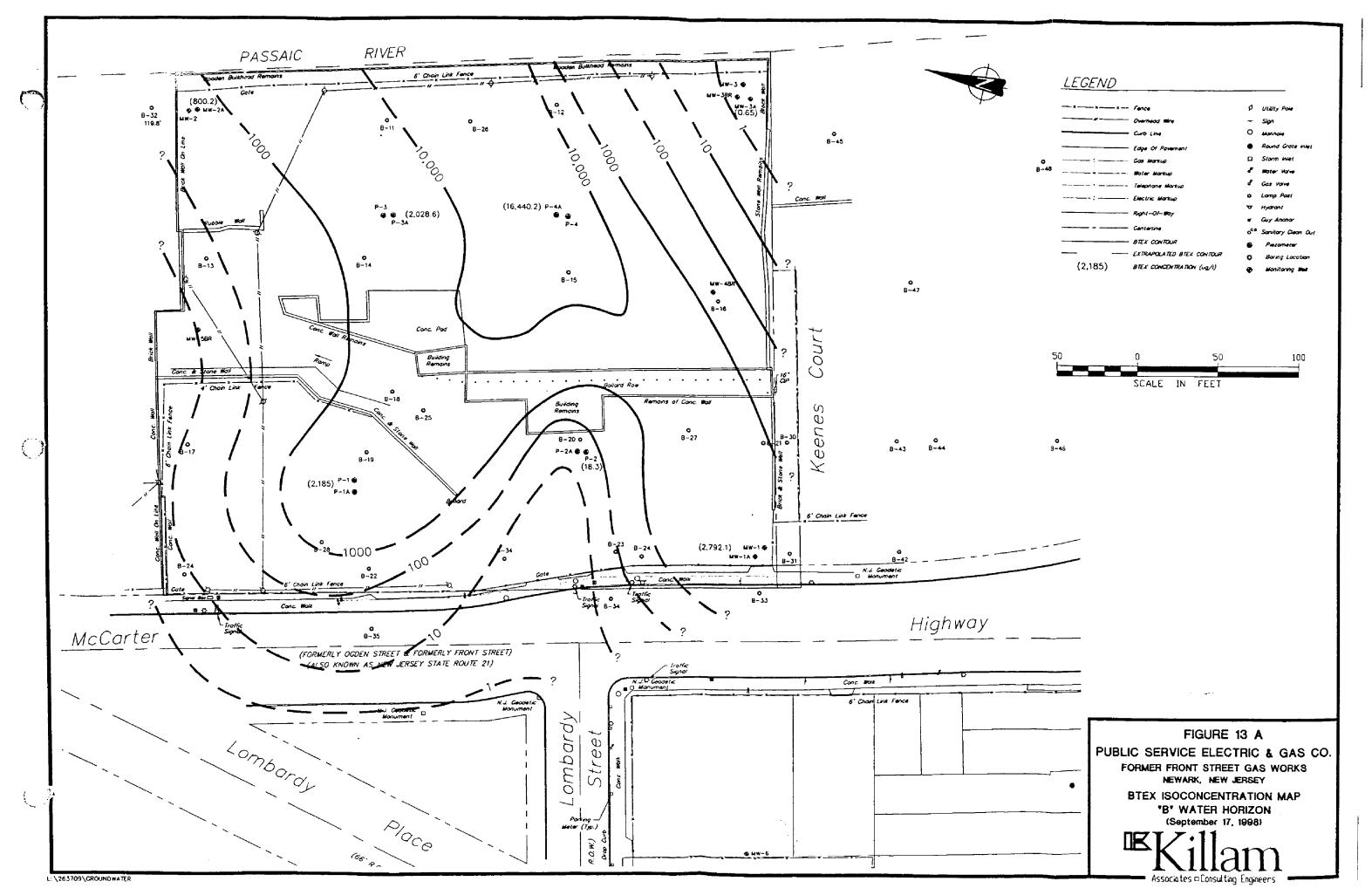


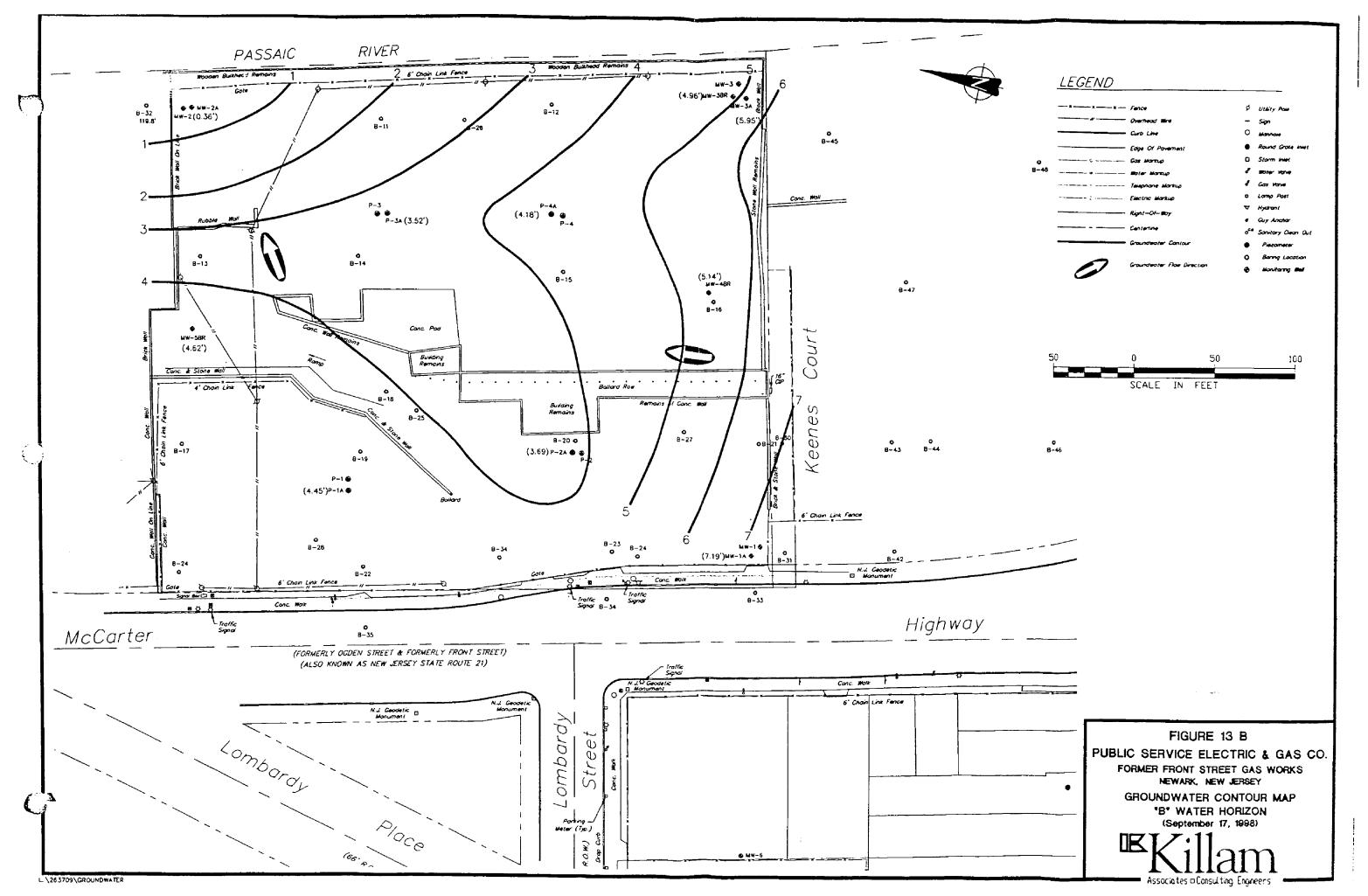


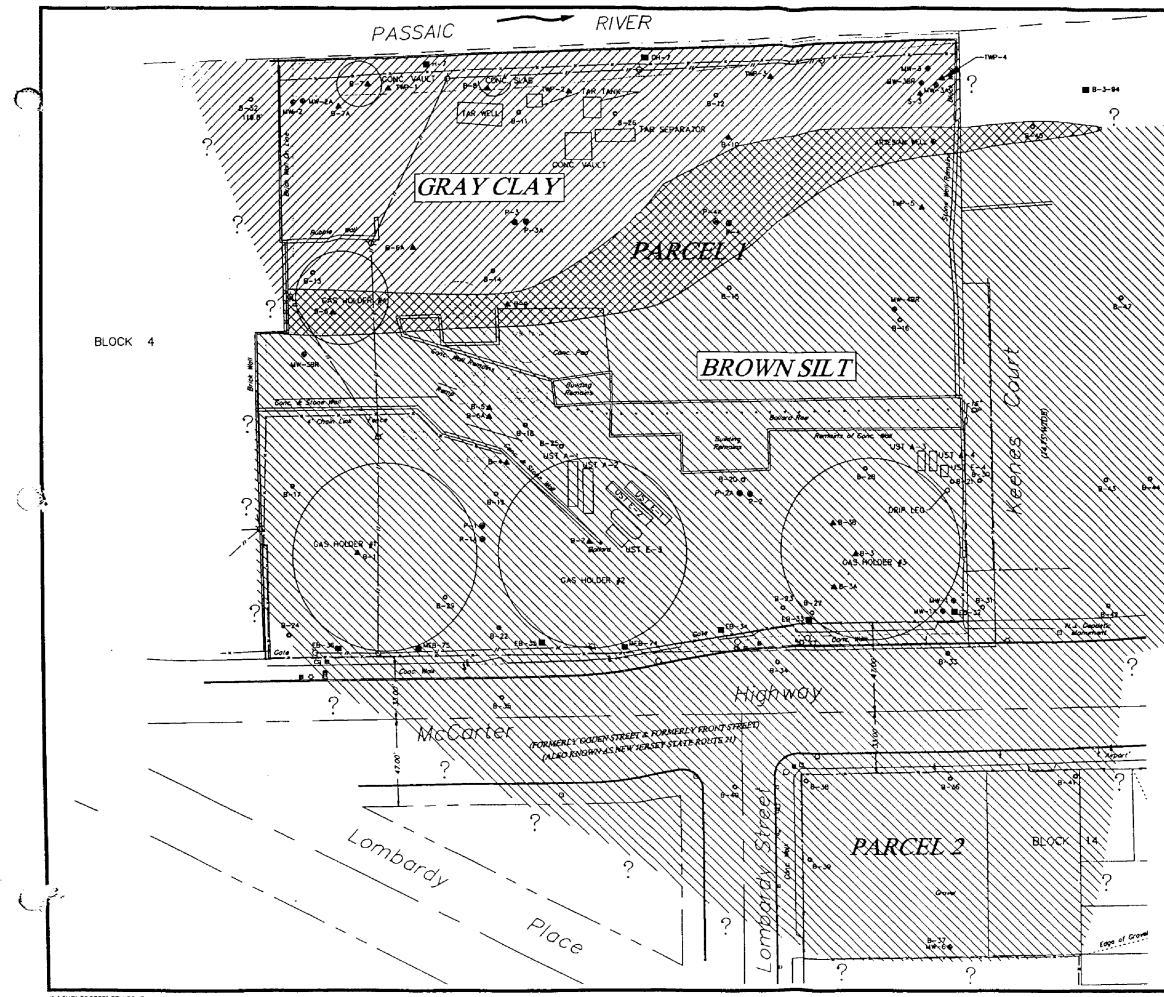




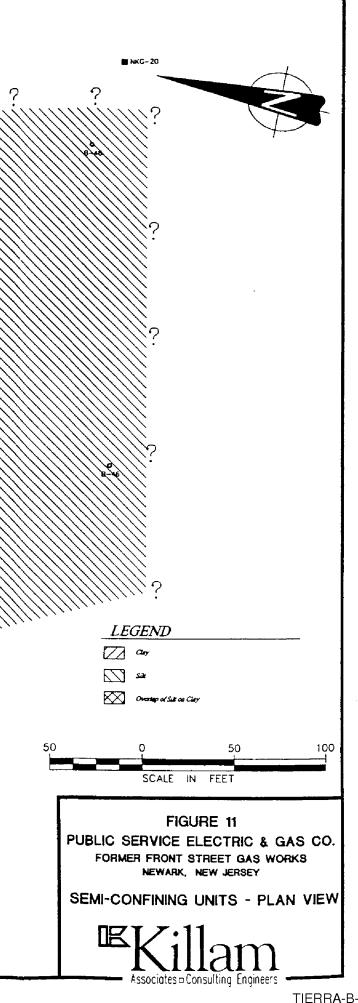
L: \263709\GROUNDWATER

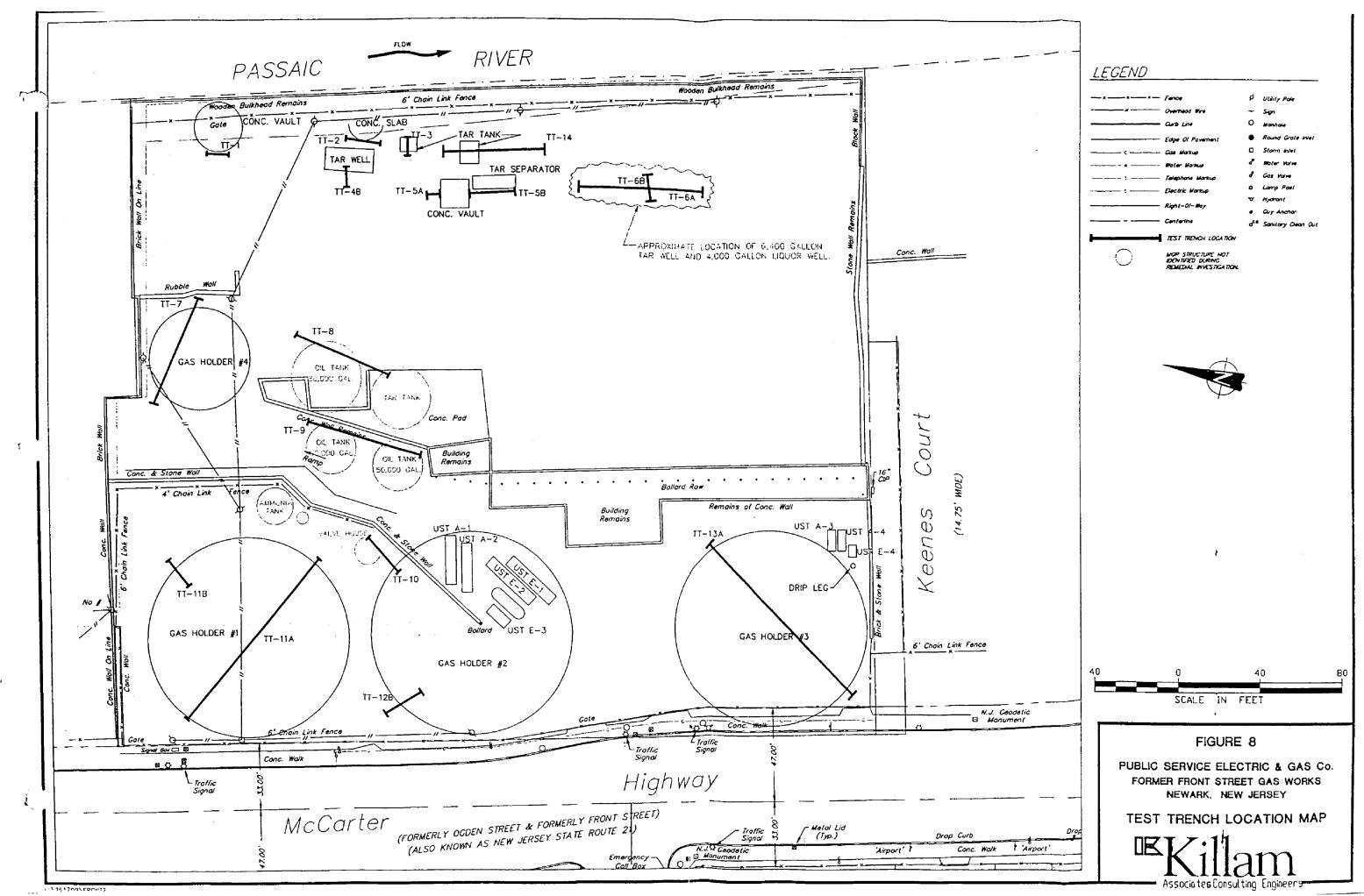






K \ENG\263709\SEMICONF





| ATE COMPLE | ETED: |                         | July 27, 19<br>Advanced | 998<br>Drilling Inc | internance.    | PROJECT: PSE&G: Former Front Str<br>LOCATION: Newark, New Jersey                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | eet Gas Works                 |
|------------|-------|-------------------------|-------------------------|---------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| SPECTOR:   |       |                         |                         | B. Secking          |                | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |
|            | 200   |                         | Hollow St               |                     | e              | KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
|            | nob   |                         | Hollow St               | en Adder            |                | LATITUDEA, ONGITUDE:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |
|            |       |                         |                         |                     |                | SURVEYED ELEVATION (ft MSL): 8.8 (Gr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ound)                         |
| DEPTH      | 504   | SAMPLES                 | BLOW                    | RECOVERY            | FELD           | VISUAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COMMENTS                      |
| (FT)       | CLASS | $\leftarrow$            | COUNTS                  | (N)<br>4            | SCREENING (ppr |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -0-        |       |                         | 100/6                   | $+$ $\cdot$ $+$     | 0              | Fill; Concrete 0.5-1' (10 YR 4/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |
| -1-        |       |                         | 8                       |                     | 0              | f-m Sd; Fill (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | B-11 (1-1.5')                 |
| 1          |       |                         | 12                      |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -2-        |       |                         | 9                       |                     |                | •                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                               |
| -3-        |       |                         | 8                       | 14                  | 0              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
|            |       |                         | 5                       | 1                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| +          |       |                         | 3                       | 10                  | C              | f-m Sd, I. Grv, t. Coal Fragments (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                               |
| -5-        |       |                         | 2                       | 1 1                 |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | B-11 (5-5.5')                 |
|            |       |                         | 3                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Wet at 5.5 F                  |
| -6-        |       | $\overline{\mathbb{N}}$ | 3                       | 9                   | ٥              | Grv, s. m-c Sd (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                               |
| .7.        |       |                         | 2                       | -                   |                | <b>5</b> 0.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |
| -7-        |       |                         | 1                       | 1 1                 |                | FILL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |
| -8-        |       | $\overline{\nabla}$     | 1                       | 12                  | 6.6            | <br>Grv, s. m-c Sd (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Visible Produ                 |
|            |       | $  \rangle$             | 1                       | 4                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -9-        |       |                         | 2                       | 4                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -10-       |       | $\overline{\mathbf{h}}$ | 1                       | 12                  | 6.3            | _/<br>  Grv, s. m-c Sd (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | B-11 (9.5-10<br>Visible Produ |
|            |       |                         | 2                       | ] [                 |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -11-       |       |                         | 1                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -12-       |       | $\vdash$                | 3                       | 16                  | 2.7            | 9" 'Grv, s. m-c Sd (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Visible Produ                 |
|            |       | $\left  \right\rangle$  | 1                       | 1 "                 | 6.5            | 7" Paper-like material (10 YR 2/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | VISIBLE PIDUU                 |
| -13-       |       |                         | 3                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -14        |       | <u> </u>                | 7                       | 18                  | 2.1            | CI (5 Y 4/1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |
|            |       |                         | 1                       | 1 10                | 2.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -15-       |       |                         | t                       | 1                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -16-       |       |                         | 1                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -10-       |       |                         | 1                       | 20                  | O              | CI (5 Y 4/1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |
| -17-       |       |                         | 1                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
|            |       | $ \rightarrow $         | 1                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -18-       |       | $\left  \right\rangle$  | N/R                     | N/R                 | N/R            | Shelby; No Recovery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| -19-       | CL    |                         |                         |                     |                | CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |
|            |       |                         |                         |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| •20-       |       |                         | 6                       | NR                  | N/R            | No Recovery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1                             |
| -21-       |       |                         | 8                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
|            |       |                         | 8                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -22-       |       | $  \setminus  $         | WOH                     | 18                  | 0              | 2" f-m Sd (N2); 14" Cl (slightly organic) (5Y 4/1)<br>2" f-m Sd (N2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |
| -23-       |       |                         | 2                       |                     |                | 2 (M2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
| L.         |       |                         | 2                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -24-       |       | $\backslash$            | 5                       | 16                  | 1.8            | 9" f-m Sd (N2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | B-11 (24.5-25                 |
| -25-       |       |                         | 6                       |                     | 0.4            | 9" f-m-c Sd (10 YR 4/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Visible Produ                 |
|            |       | $\square$               | 5                       |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -26-       |       | $[ \ ]$                 | 5                       | 16                  | 0              | f-m-c Sd (10 YR 4/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Visible Sheen                 |
| -27.       |       |                         | 6                       |                     |                | (Till) f-m-c Sd (cl matrix) (5 YR 4/4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
|            | SP-SC |                         | 9                       |                     |                | Poorly Graded SAND with CLAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                               |
| -26-       |       |                         | 16                      | 9                   | o              | (Till) f-m-c Sd, I. Grv (cl matrix) (5 YR 4/4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                               |
| -29-       |       | $  \setminus  $         | 13                      |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -23-       |       |                         | 14<br>21                |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -30-       |       |                         | 21                      | 14                  | 0              | -<br>f-m-c Sd, t. Weathered Siltstone (cl matrix) (5 YR 4/4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | B-11 (31.5-32                 |
|            |       |                         | 18                      |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -31-       |       |                         | 23 27                   |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -32-       |       |                         | 50/2                    | N/R                 | N/R            | Bedrock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -                             |
|            |       |                         |                         |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
| -33-       |       |                         |                         |                     |                | Bedrock - SILTSTONE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                               |
| -34_       |       |                         |                         |                     |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                               |
|            |       |                         |                         |                     |                | Bedrock at 32 leet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |
| -35-       |       | [                       |                         |                     |                | Steel casing set into the clay at 17 Feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| -36-       |       | [                       |                         | - I                 |                | I. Contraction of the second se |                               |

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| <sup>R</sup> Ki                                 | illan       | n                      |                                                     |                           |                 | BORING LOG                                                                 |              | LOG:       | B-12                                             |   |
|-------------------------------------------------|-------------|------------------------|-----------------------------------------------------|---------------------------|-----------------|----------------------------------------------------------------------------|--------------|------------|--------------------------------------------------|---|
| DATE COMP<br>DRILLER:<br>NSPECTOR<br>DRILLING M | Ŀ           |                        | July 17, 19<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling In<br>3. Secking | ger             | LOCATION:<br>KILLAM PROJECT NUM<br>STATE CASE NUMBER<br>LATITUDE/LONGITUDE | R: N/A       | sey        |                                                  |   |
| DEPTH                                           | SOL         | SAMFLES                | BLOW                                                | RECOVERY                  | FELD            |                                                                            | IN (IT MOLI. | 9.0 (Groun | COMMENTS                                         | 1 |
| (FT)                                            | CLASS       |                        | COLINTS                                             | (114)                     | SCREENING (pom) | DESCRIPTION                                                                |              |            |                                                  |   |
| -0-<br>-1-                                      |             | $\square$              | 11<br>16<br>11                                      | 8                         | Û               | Fill                                                                       |              |            | B-12 (0-0.5')                                    |   |
| -2.<br>-3-                                      |             |                        | 10<br>10<br>12<br>7                                 | 18                        | 15              | f-m-c Sd, I. Sit (N2)                                                      |              |            | Visible Product,<br>Strong Odor                  |   |
| .≁<br>.5-                                       |             |                        | 3<br>2<br>1                                         | 20                        | 6.5             | Ci, I, f-m Sd, t. Grv (N2)                                                 |              |            |                                                  |   |
| - <b>6</b> -<br>-7-                             |             | $\left  \right\rangle$ | 3<br>7<br>4<br>7                                    | 18                        | 5.4             | 12" Cl, I. f-m Sd (N1)<br>6" f-m Sd, L Grv, I. Slt                         |              |            | B-12 (5.5-6')<br>Product<br>Wet at 6 Feet        |   |
| یو.                                             |             | $\square$              | 10<br>7<br>10<br>14                                 | 18                        | 6.3             | I-m Sd, I. Sit, I. Grv (N1)                                                |              |            | Product                                          |   |
| -10-<br>-11-                                    |             |                        | 14<br>5<br>5<br>5                                   | 14                        | 5               | f-m Sd, I. Cl, t. Grv (5 YR 4/4)<br>FILL                                   |              |            | Product                                          |   |
| -12-<br>-13-                                    |             | $\square$              | 6<br>8<br>9                                         | 18                        | 4<br>0.5        | 15" f-m Sd, I, Sit (N1)<br>3" f-m Sd, I, Sit (5 YR 4/4)                    |              |            |                                                  |   |
| •14-<br>•15-                                    |             |                        | 11<br>4<br>3<br>4                                   | 2                         | 6.1             | Gravet (5 YR 3/2)                                                          |              |            | Product                                          |   |
| -16-                                            |             | $\square$              | 5<br>10<br>20<br>11                                 | 16                        | 20              | f-m Sd, I. Sit; wood in nose (N1)                                          |              |            | Product                                          |   |
| -18-                                            |             |                        | 10<br>9<br>4<br>4                                   | 12                        | 25              | I-m-c Sd a, Grv (N1)                                                       |              |            | Product                                          |   |
| -20-<br>-21-                                    | · · · · · · |                        | 3<br>2<br>1                                         | 18                        | 2.3             | Cl, f-m Sd in tip of spoon (5 Y 4/1)                                       |              |            | B-12 (19.5-20')                                  |   |
| -22.                                            | CL          |                        | 3<br>1<br>3<br>2                                    | 11                        | 54              | CI (5 Y 4/1)<br>CLAY                                                       |              |            |                                                  |   |
| -23-<br>-24-<br>-25-                            |             | $\left  \right\rangle$ | 4<br>11<br>6<br>4                                   | 18                        | N/R             | No Recovery                                                                |              |            | Shelby Sample to<br>bottom of Clay               |   |
| -26-<br>-27-                                    | ·           |                        | 3<br>11<br>16<br>28                                 | 2                         | 4.2             | Weathered Siltstone, I. Cl (matrix) (5 YR 4/4)<br>Weathered Bedrock        |              |            | B-12 (27.5-28)<br>Only VO+10<br>sample collected |   |
| -28-                                            |             |                        | 39<br>100/0                                         | NR                        | NR              | Bedrock<br>Bedrock - SILTSTONE                                             |              |            |                                                  |   |
| - 30-                                           |             |                        |                                                     | :                         |                 | Bedrock at 28 feet                                                         |              |            |                                                  |   |
| -31-                                            |             |                        |                                                     |                           |                 | Steel casing set into the clay at 20 Feet                                  |              |            |                                                  |   |
| -33-                                            |             |                        |                                                     |                           |                 |                                                                            |              |            |                                                  |   |
| -34-                                            |             |                        |                                                     |                           |                 |                                                                            |              |            |                                                  |   |
| -35-                                            |             |                        |                                                     |                           |                 |                                                                            |              |            |                                                  | 5 |
| -36-                                            |             |                        |                                                     |                           |                 |                                                                            |              |            |                                                  |   |

| <sup>⊯</sup> Ki                                      | uan   |                         |                                                    |                            |                     |                                                                                                                       |                             |
|------------------------------------------------------|-------|-------------------------|----------------------------------------------------|----------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------------------|
| DATE COMPLI<br>DRILLER:<br>NSPECTOR:<br>DRILLING MET | ETED: | I                       | June 19, 1<br>Advanced<br>Jonathan 6<br>Hollow Ste | Drilling Inc<br>3. Secking |                     | PROJECT: PSE&G: Former Fro<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A |                             |
|                                                      |       |                         |                                                    |                            |                     | LATTTUDE/LONGITUDE:                                                                                                   | 7 1 (Ground)                |
| DEPTH                                                | SOL   | SAMFLES                 | BLOW                                               | RECOVERY                   | FIELD               | VISUAL                                                                                                                | COMMENT                     |
| -0-                                                  | CLASS | $\overline{\mathbf{k}}$ | COUNTS<br>7                                        | (m)<br>10                  | SCREENING (por<br>0 | n) DESCRIPTION<br>[F-m Sd a. Sit, I. Grv (5 YR 3/4)                                                                   |                             |
| -1-                                                  |       |                         | <u>6</u><br>5                                      |                            |                     |                                                                                                                       | B-13 (0-0.5                 |
| -2-                                                  |       |                         | 6                                                  | N/R                        | 0                   | Nose Plugged with Rock                                                                                                |                             |
|                                                      |       | $\left  \right\rangle$  | 5                                                  |                            | -                   |                                                                                                                       |                             |
| -3-                                                  |       |                         | 9<br>10                                            |                            |                     |                                                                                                                       |                             |
| .4                                                   |       |                         | 5                                                  | 10                         | 0                   | f-m Sd, I. Sit, I. Grv, t. Coal Fragments (5 YR 3/4)                                                                  |                             |
| -5-                                                  |       |                         | 4                                                  |                            |                     |                                                                                                                       |                             |
| -6-                                                  |       |                         | 2                                                  | 8                          | 0                   | f-m-c Sd, t. Sit, t. Coal Fragments (10 YR 5/4)                                                                       |                             |
| -7-                                                  |       |                         | 4                                                  |                            |                     |                                                                                                                       |                             |
| -8-                                                  |       |                         | 4<br>50/4                                          | 4                          | 0                   | FILL FILL                                                                                                             |                             |
| -9-                                                  |       |                         | 50/2                                               |                            |                     | f-m Sd (10 YR 8/2)                                                                                                    | Wet                         |
| -10-                                                 |       |                         | 6                                                  | 3                          | 0                   |                                                                                                                       |                             |
|                                                      |       |                         | 3                                                  |                            | -                   |                                                                                                                       |                             |
| -11-                                                 |       | $\square$               | 2                                                  |                            |                     |                                                                                                                       |                             |
| -12-                                                 |       |                         | 6                                                  | N/R                        | 0                   | No Recovery                                                                                                           |                             |
| -13-                                                 |       |                         | 4                                                  |                            |                     |                                                                                                                       |                             |
| -14-                                                 |       | $\square$               | 3                                                  | 6                          | 0                   | f-m Sd a. Sit, t Cl, t Grv (5 YR 4/4)                                                                                 | Wet at Tip                  |
| -15-                                                 |       |                         | 3                                                  |                            |                     |                                                                                                                       | B-13 (15.5-1                |
| -16-                                                 |       |                         | 5                                                  | N/A                        | 0                   | f-m Sd, I. Grv, t. Cl, Brick Fragments (5 YR 3/2)                                                                     | Wet                         |
| -17-                                                 |       |                         | <b>4</b>                                           |                            |                     |                                                                                                                       |                             |
| -18-                                                 |       | $\sim$                  | <u>5</u><br>4                                      | 20                         | 0                   | 8" f-m-c Sd, I. Sit                                                                                                   |                             |
| -19-                                                 |       |                         | <u> </u>                                           |                            |                     | 12" CI (5 Y 4/1)                                                                                                      | B-13 (18.5-1                |
| -20-                                                 |       |                         | 3<br>N/A                                           | 24                         | N/A                 | Shelby Tube: Triaxial Permeability                                                                                    |                             |
|                                                      | CL    |                         |                                                    |                            | 120                 | CLAY                                                                                                                  |                             |
| -21-                                                 |       |                         |                                                    |                            |                     | -                                                                                                                     |                             |
| -22-                                                 |       |                         | 13                                                 | 20                         | 0                   | 15" CI, t. organic material (5 Y 4/1)<br>5" CI, s. f-m Sd (5 Y 4/1)                                                   |                             |
| -23-                                                 |       |                         | 4                                                  |                            |                     |                                                                                                                       |                             |
| -24-                                                 |       |                         | 10<br>14                                           | 20                         | 0                   | f-m-c Sd a. Grv (5 YR 3/2)                                                                                            | Faint Odor                  |
| -25-                                                 |       |                         | <u>11</u><br>12                                    |                            |                     |                                                                                                                       |                             |
| -26-                                                 |       |                         | 11                                                 | 18                         | ٥                   | mottied, f-m Sd a. Grv (5 YR 3/2)                                                                                     | B-13 (25.5-2)<br>Faint Odor |
| -27-                                                 | SP-SC |                         | 12<br>16                                           |                            |                     | Poorty Graded SAND with GRAVEL and CLAY                                                                               |                             |
| -28-                                                 |       |                         | <u>17</u><br>23                                    | 12                         | 0                   | 1-m-c Sd a. Grv, s Sit (5 YR 3/2)                                                                                     |                             |
| -29-                                                 |       |                         | 22                                                 |                            | 0                   | Cl, I. f. Sd at tip of spoon (5 YR 5/6)                                                                               |                             |
| Í                                                    |       |                         | 17                                                 |                            |                     |                                                                                                                       |                             |
| -30-                                                 |       | $\left  \right\rangle$  | 35<br>16                                           | 12                         | 0                   | f-m-c Sd, I. s. Cl, I. Grv, very tightly packed (5 YR 4/4)                                                            |                             |
| -31-                                                 |       |                         | 20<br>11                                           |                            |                     |                                                                                                                       |                             |
| -32-                                                 |       | $\left \right\rangle$   | 23                                                 | 12                         | 0                   | Cla 1-m-c Sd, t Grv (5 YR 4/4)                                                                                        |                             |
| -33-                                                 |       |                         | 17                                                 |                            |                     |                                                                                                                       |                             |
| -34                                                  |       | Ń                       | 43                                                 | 16                         | o                   | 1-m-c Sd a Grv. I. Sit, I. Cl (5 YR 4/4)                                                                              |                             |
| 1                                                    |       |                         | 38                                                 |                            |                     |                                                                                                                       | 1                           |

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| <sup>⊯</sup> Ki                                     | llan   | n             |                                                       |                           |                 | BORING LOG (continued)                                                                                                 | og: B-13        |
|-----------------------------------------------------|--------|---------------|-------------------------------------------------------|---------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------|-----------------|
| DATE COMPL<br>DRILLER:<br>INSPECTOR:<br>DRILLING ME |        |               | June 19, 19<br>Advanced I<br>Jonathan E<br>Hollow Ste | Drilling In<br>3. Secking |                 | PROJECT: PSE&G: Former Fron<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A |                 |
| DEPTH                                               | SOL    | SAMFLES       | BLOW                                                  | RECOVERY                  | FIELD           | VISLAL                                                                                                                 | COMMENTS        |
| (FT)                                                | CLASS. |               | COLINIS                                               | (84)                      | SCREENING (ppm) | DESCRIPTION                                                                                                            |                 |
| -36-                                                |        | $\square$     | 47<br>50/2                                            | 8                         | 0               | f-m-c Sd, I. Grv, I. Cl, t Sit (5 YR 4/4)                                                                              |                 |
| -37-                                                |        | $  \setminus$ |                                                       |                           |                 |                                                                                                                        |                 |
| -38-                                                | ·      |               | 32<br>40                                              | 16                        | 0               | f-m-c Sd, I. Weathered Bedrock (5 YR 4/4)                                                                              |                 |
| -39-                                                |        | $  \setminus$ | 50/3                                                  |                           |                 |                                                                                                                        |                 |
| -40-                                                |        | $\square$     | 22<br>16                                              | 18                        | 0               | Weathered Siltstone (5 YR 4/4)<br>Weathered Bedrock                                                                    |                 |
| -41-                                                |        |               | 47                                                    | 1                         |                 |                                                                                                                        |                 |
| -42-                                                |        | $\square$     | 38<br>50/2                                            | 6                         | 0               | Weathered Siltstone Bedrock (5 YR 4/4)                                                                                 | B-13 (42.5-43') |
| -43-                                                |        |               |                                                       |                           |                 |                                                                                                                        |                 |
| -44-                                                |        |               |                                                       |                           |                 | End of Boring at 44 Feet                                                                                               |                 |
| -45-                                                |        |               |                                                       |                           |                 |                                                                                                                        |                 |
| -46-                                                |        |               |                                                       |                           |                 |                                                                                                                        |                 |
| -47-                                                |        |               |                                                       |                           |                 |                                                                                                                        |                 |
| -48-                                                |        |               |                                                       |                           |                 |                                                                                                                        | 1               |

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| g Incoporated<br>kinger<br>der<br>PENV FELD<br>2 0<br>2 0<br>2 0<br>2 0<br>2 0<br>2 0<br>2 0<br>2 0<br>2 0<br>2 0                                                                                                       | PROJECT:     PSE&G: Former Front Street       LOCATION:     Newark, New Jersey       KILLAM PROJECT NUMBER:     263709       STATE CASE NUMBER:     NA       LATITUDE/LONGITUDE:     30200000000000000000000000000000000000                                                                                                                                                                               | und)<br>COMAR<br>B-14 (0-0.4<br>Moist<br>B-14 (4.5-4<br>Wet at 5 Fi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AFRY         FELD           )         SCREENAG (pom)           2         0           2         0           4         0           6         0           6.4         2.1           R         N/A           2         12.9 | LATTUDE/LONGITUDE:<br>SURVEYED ELEVATION (ft MSL): 10.2 (Gro<br>visue:<br>descrimition<br>1-m-c Sd a. Grv, s. Sit (10 YR 2/2)<br>1-m-c Sd a. Sit, I. Grv a. Brick Fragements (10 YR 2/2)<br>1-m-c Sd, s. Sit, Wood Fragments (10 YR 2/2)<br>No Recovery<br>FILL<br>Peat (10 YR 2/2)<br>1-m Sd a. Sit a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>CI, t. organic material , t. c Sd (5 Y 4/1)<br>CLAY   | E-14 (0-0.<br>Moist<br>B-14 (4.5-<br>Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| SCREENANC (pon           2         0           2         0           4         0           6         4           2         12.9                                                                                         | VISUAL<br>DESCRIPTION       I-m-c Sd a. Giv, s. Sit (10 YR 2/2)       I-m Sd a. Sit, I. Giv a. Brick Fragements (10 YR 2/2)       I-m-c Sd, s. Sit, Wood Fragments (10 YR 2/2)       No Recovery       FILL       Peat (10 YR 2/2)       I-m Sd a. Sit a. Wood Fragments (5 YR 4/4)       No Recovery       Cl, t. organic material , t. c Sd (5 Y 4/1)       Cl, t. organic material , t. c Sd (5 Y 4/1) | Come<br>B-14 (0-0.<br>Moist<br>B-14 (4.5-<br>Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2 0<br>2 0<br>4 0<br>R N/A<br>0 6.4<br>2.1<br>R N/A<br>2 12.9                                                                                                                                                           | I-m-c Sd a. Giv, s. Sit (10 YR 2/2)<br>I-m Sd a. Sit, I. Giv a. Brick Fragements (10 YR 2/2)<br>I-m-c Sd, s. Sit, Wood Fragments (10 YR 2/2)<br>No Recovery<br>FILL<br>Peat (10 YR 2/2)<br>I-m Sd a. Sit a. Wood Fragments (5 YR 4/4)<br>I-m Sd a. Sit a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Ci, t. organic material , t. c Sd (5 Y 4/1)<br>CLAY                                                 | Moist<br>B-14 (4.5-<br>Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 2 0<br>4 0<br>R N/A<br>0 6.4<br>2.1<br>R N/A<br>2 12.9                                                                                                                                                                  | I-m Sd a. Sit, I. Grv a. Brick Fragements (10 YR 2/2)         I-m-c Sd, s. Sit, Wood Fragments (10 YR 2/2)         No Recovery         FILL         Peat (10 YR 2/2)         f-m Sd a. Sit a. Wood Fragments (5 YR 4/4)         No Recovery         Ci, t. organic material , t. c. Sd (5 Y 4/1)         CLAY                                                                                             | Moist<br>B-14 (4.5-<br>Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| A 0<br>R N/A<br>0 6.4<br>2.1<br>R N/A<br>12.9                                                                                                                                                                           | I-m-c Sd, s. Sit. Wood Fragments (10 YR 2/2)<br>No Recovery<br>FILL<br>Peat (10 YR 2/2)<br>f-m Sd a. Sit a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl, t. organic material , t. c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                               | B-14 (4.5-<br>Wet at 5 Fi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| A 0<br>R N/A<br>0 6.4<br>2.1<br>R N/A<br>12.9                                                                                                                                                                           | I-m-c Sd, s. Sit. Wood Fragments (10 YR 2/2)<br>No Recovery<br>FILL<br>Peat (10 YR 2/2)<br>f-m Sd a. Sit a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl, t. organic material , t. c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                               | Moist<br>B-14 (4.5-3<br>Wet at 5 Fr<br>B-14 (9.5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| A         O           R         N/A           O         6.4           2.1         R           R         N/A           2         12.9                                                                                    | No Recovery       FILL         Peat (10 YR 2/2)       f.m Sd a. Sit a. Wood Fragments (5 YR 4/4)         f.m Sd a. Sit a. Wood Fragments (5 YR 4/4)       Cl. t. organic material , t. c. Sd (5 Y 4/1)         Cl, t. organic material , t. c. Sd (5 Y 4/1)       CLAY                                                                                                                                    | Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| R N/A<br>0 6.4<br>2.1<br>R N/A<br>12.9                                                                                                                                                                                  | No Recovery       FILL         Peat (10 YR 2/2)       f.m Sd a. Sit a. Wood Fragments (5 YR 4/4)         f.m Sd a. Sit a. Wood Fragments (5 YR 4/4)       Cl. t. organic material , t. c. Sd (5 Y 4/1)         Cl, t. organic material , t. c. Sd (5 Y 4/1)       CLAY                                                                                                                                    | Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| R N/A<br>0 6.4<br>2.1<br>R N/A<br>12.9                                                                                                                                                                                  | No Recovery       FILL         Peat (10 YR 2/2)       f.m Sd a. Sit a. Wood Fragments (5 YR 4/4)         f.m Sd a. Sit a. Wood Fragments (5 YR 4/4)       Cl. t. organic material , t. c. Sd (5 Y 4/1)         Cl, t. organic material , t. c. Sd (5 Y 4/1)       CLAY                                                                                                                                    | Wet at 5 F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| C C.4<br>C.1<br>R N/A<br>2.1<br>12.9                                                                                                                                                                                    | FILL<br>Peat (10 YR 2/2)<br>f-m Sd a. Slt a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl. t. organic material , t. c. Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| C C.4<br>C.1<br>R N/A<br>2.1<br>12.9                                                                                                                                                                                    | FILL<br>Peat (10 YR 2/2)<br>f-m Sd a. Slt a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl. t. organic material , t. c. Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                             | B-14 (9.5-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2.1<br>R N/A<br>2.12.9                                                                                                                                                                                                  | Peat (10 YR 2/2)<br>f-m Sd a. Sit a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl. t. organic material , t c Sd (5 Y 4/1)<br><i>CLAY</i>                                                                                                                                                                                                                                                                | B-14 (9.5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.1<br>R N/A<br>2.12.9                                                                                                                                                                                                  | f-m Sd a. Slt a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl. t. organic material , t c Sd (5 Y 4/1)<br><i>CLAY</i>                                                                                                                                                                                                                                                                                    | B-14 (9.5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2.1<br>R N/A<br>2.12.9                                                                                                                                                                                                  | f-m Sd a. Slt a. Wood Fragments (5 YR 4/4)<br>No Recovery<br>Cl. t. organic material , t c Sd (5 Y 4/1)<br><i>CLAY</i>                                                                                                                                                                                                                                                                                    | B-14 (9.5-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| R N/A                                                                                                                                                                                                                   | No Recovery<br>Cl. t. organic material , L c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                                                                                                         | B-14 (9.5-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| R N/A                                                                                                                                                                                                                   | No Recovery<br>Cl. t. organic material , L c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2 12.9                                                                                                                                                                                                                  | CI, t. organic material , L c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2 12.9                                                                                                                                                                                                                  | CI, t. organic material , L c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 2 12.9                                                                                                                                                                                                                  | CI, t. organic material , L c Sd (5 Y 4/1)<br>CLAY                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         | CLAY                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         | CLAY                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| s N/A                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| N/A                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 1                                                                                                                                                                                                                       | analy rate interesting                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10.7                                                                                                                                                                                                                    | 1-m-c Sd a. Grv, I. Slt (5 YR 3/4)                                                                                                                                                                                                                                                                                                                                                                        | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8.6                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                           | B-14 (17.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         | _                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 0                                                                                                                                                                                                                       | SIL I CI, t I Sd (5 YR 4/4)                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 6.4                                                                                                                                                                                                                     | 1-m Sd. 1, Sit (5 YR 3/2)                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 0                                                                                                                                                                                                                       | f-m Sd a. Cl, t c Sd (5 YR 5/6)<br>Poorly Graded SAND with CLAY and GRAVEL                                                                                                                                                                                                                                                                                                                                | Ì                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 0                                                                                                                                                                                                                       | I-m Sd a. Cl. t c Sd (5 YR 5/6)                                                                                                                                                                                                                                                                                                                                                                           | Tight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 0                                                                                                                                                                                                                       | f-m-c Sd (5 YR 3/4)<br>f-m Sd a Cl (5 YR 5/6)                                                                                                                                                                                                                                                                                                                                                             | Very Wet<br>Tight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         | Lean Gra, Pin 30, F.C.30, C.Silstone Fragments (G.TR. 4/4)                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 0                                                                                                                                                                                                                       | Lean CI a. f-m Sd, I. c. Sd, t. Siltstone Fragments (5 YR 4/4)                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| i 2.1                                                                                                                                                                                                                   | Weathered Siltstone, CI, I, f-m Sd matrix (5 YR 4/4)                                                                                                                                                                                                                                                                                                                                                      | -{                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         | Weathered Bedrock                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 0                                                                                                                                                                                                                       | Weathred Siltstone, CI, I f-m Sd matrix(5 YR 4/4)                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                                                                                                                                         | 0<br>0<br>0<br>0<br>0<br>2.1                                                                                                                                                                                                                                                                                                                                                                              | 6.4       f-m Sd. 1. Sit (5 YR 3/2)         0       f-m Sd.a. Cl, t. c Sd (5 YR 5/6)         0       f-m Sd.a. Cl, t. c Sd (5 YR 5/6)         0       f-m-c Sd (5 YR 3/4)         0       f-m Sd.a. Cl (5 YR 5/6)         0       f-m Sd.a. Cl (5 YR 5/6)         0       f-m-c Sd (5 YR 5/6)         0       Lean Cl (5 YR 5/6)         1       Weathered Siltstone, Cl (1 From Sd matrix (5 YR 4/4)         Weathered Bedrock |

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|                                                    | illar        | 11      |                                                    |                                        |                 | BORING LOG (continued)                                                                                                       | B-14         |
|----------------------------------------------------|--------------|---------|----------------------------------------------------|----------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------|--------------|
| DATE COMPI<br>DRILLER:<br>NSPECTOR:<br>DRILLING ME | THOD         | ,       | June 22, 1<br>Advanced<br>Jonathan E<br>Hollow Ste | Drilling Inc<br>B. Secking<br>em Auger | ger             | PROJECT: PSE&G. Former Front Stre<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A | et Gas Works |
| DEPTH<br>(FT)                                      | SOL<br>CLASS | SAMFLES | BLOW                                               | RECOVERY                               |                 | VISUAL                                                                                                                       | COMMENTS     |
| -36-                                               | CLASS        | +       | COUNTS 100/1                                       | (IN)<br>N/R                            | SCREENING (ppm) |                                                                                                                              | 20112        |
| -37-                                               |              |         |                                                    |                                        | N/A             | Bedrock at 36 Feet<br>Bedrock - SILTSTONE                                                                                    |              |
| -38-                                               |              | 1       |                                                    | 1-1                                    |                 |                                                                                                                              |              |
| -39-                                               |              | 1       |                                                    |                                        | 1               | End of Boring at 38 Feet                                                                                                     |              |
| -40-                                               |              |         | 1                                                  |                                        | l               |                                                                                                                              |              |
| -41-                                               |              |         |                                                    |                                        | 1               |                                                                                                                              |              |
| -42-                                               |              |         | i<br>i                                             |                                        | 1               |                                                                                                                              |              |
| -43-                                               |              |         | ļ                                                  |                                        | 1               |                                                                                                                              |              |
| -44-                                               |              |         | ;                                                  |                                        | 1               |                                                                                                                              |              |
| -45-                                               |              |         |                                                    |                                        | , ļ             |                                                                                                                              |              |
| -46-                                               |              |         |                                                    |                                        |                 |                                                                                                                              |              |
| -47-                                               |              |         |                                                    |                                        |                 |                                                                                                                              |              |
| -48-                                               |              |         | ļ                                                  | 1                                      | ]               |                                                                                                                              |              |

K VENG1263709/LOGS18-14

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| ≊Kill                                               | lam   |                                              |                      |                              |                 | BORING LOG                                                                                                                                | : B-15                          |
|-----------------------------------------------------|-------|----------------------------------------------|----------------------|------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| ATE COMPLET<br>RILLER:<br>NSPECTOR:<br>RILLING METH | TED:  |                                              |                      | Drilling Inco<br>B. Seckinge |                 | PROJECT: PSE&G: Former Front SI<br>LOCATION: Front Street<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATTUDELONGITUDE: | reet Gas Works                  |
| DEPTH                                               | SOL   | SAMPLES                                      | BLDW                 | RECOVERY                     |                 | SURVEYED ELEVATION (# MSL): 10.2                                                                                                          | (Ground)                        |
| (FT)                                                |       |                                              | COLNTS               |                              | SCREENING (ppm) | n] DESCRIPTION                                                                                                                            |                                 |
| -0-                                                 | !     | 1'                                           | l                    |                              |                 | Asphait/Concrete                                                                                                                          |                                 |
| -1-<br>-2-                                          |       | $\square$                                    | 9<br>10<br>10        | 18                           | 0               | 1-m-c Sd, t Cl, 1, Sit, I, Grv (5 YR 4/4)                                                                                                 | B-15 (1-1.5')                   |
| -3-                                                 |       | $\sim$                                       | 9                    | N/R                          | N/A             | No Recovery                                                                                                                               |                                 |
| 4                                                   |       | $\bigtriangledown$                           | 16<br>2<br>4         | 3                            | 0               | <br>G∾ (5 YR 4/2)                                                                                                                         | Wet at 4 Feet                   |
| -5-                                                 |       | $\mid \geq$                                  | 7                    | 1                            |                 |                                                                                                                                           |                                 |
| -6-                                                 |       | $\square$                                    | 5<br>7<br>9          | - 12                         | 2.1<br>0        | 6" Peat (5 YR 3/4)<br>6" 1-m Sd, I. Sit (5 YR 3/4)                                                                                        |                                 |
| -6-                                                 | }     |                                              | 9                    | 20                           | 2.1             | f Sd a. Sit, I. c Sd (10 YR 2/2)                                                                                                          |                                 |
| .g.                                                 | SP-SM | $_{1}$ $^{\prime}$                           | 8                    |                              |                 | Poorty Graded SAND with SILT and GRAVEL                                                                                                   |                                 |
| -10-                                                | ļ     | <u>↓</u>                                     | 9                    | 15                           | 51              | 8" f-m Sd, I. Grv, s. Sit (N4)                                                                                                            | Strong Odor,                    |
| -11-                                                |       |                                              | 18<br>22<br>20       |                              | 0               | 7" f-m Sd a. Grv, t. Slt (5 YR 4/4)                                                                                                       | Visible Product<br>Sheen        |
| -12-                                                | ļ     | $\overline{\nabla}$                          | 18<br>22             | - 24                         | 153<br>4.4      | 1-m Sd a. Grv (N4)<br>1-m Sd (5 YR 4/4)                                                                                                   | Strong Odor,<br>Visible Product |
| -13-                                                |       | $ $ $\backslash$                             | 32                   | 1                            | 0               | Sit (5 YR 4/4)                                                                                                                            | Sheen                           |
| -14-                                                |       | K                                            | 37                   | 15                           | 4.3             |                                                                                                                                           | B-15 (12-12.5'<br>Duplicate #2  |
| -15-                                                |       |                                              | 16<br>16<br>19       |                              |                 |                                                                                                                                           |                                 |
| -15-                                                | ML    | $\square$                                    | 19<br>19<br>20<br>22 | 16                           | 4.3             | Sit, I. f-m Sd, L CI (5 YR 5/6)<br>SILT WITH SAND                                                                                         |                                 |
| -18-                                                | SM    | <u>الا</u>                                   | 22                   | 12                           | 4.3             | 6" f-m Sd, L Sit (5 YR 5/6)                                                                                                               | $\dashv$                        |
| -19-                                                | ML    |                                              | 23<br>39<br>50/2     | -                            | 4.3<br>0        | 6" SII (5 YR 5/6)<br>SILT                                                                                                                 |                                 |
| -20-                                                |       |                                              | 22                   | 10                           | 8.6             | Siltstone Fragments with Sit, I. f Sd matrix (5 YR 5/6)                                                                                   | -                               |
| -21-                                                |       |                                              | 37                   | $\left\{ \right\}$           |                 |                                                                                                                                           |                                 |
|                                                     | ļ     | <del>ر</del> ک                               |                      | <u>↓</u>                     |                 |                                                                                                                                           | B-15 (21.5-22                   |
| -22-                                                |       | 1 /                                          | 7                    | 16                           | 0               | f-m-c Sd a. Slt, I. Grv (5 YR 5/6)                                                                                                        |                                 |
| -23-                                                |       |                                              | 10<br>25             |                              |                 |                                                                                                                                           |                                 |
| -24-                                                | ĺ     | $\overline{\langle \cdot \rangle}$           | 20<br>21             | 16                           | 4.3             | CI, I. 1-C Sd, I. SII (5 YR 5/6)<br>GLACIAL TILL                                                                                          |                                 |
| ·25-                                                |       | , <u> </u>                                   | 29                   | 4                            |                 |                                                                                                                                           |                                 |
| -26-                                                | t     | $\overline{1}$                               | 23<br>39             | 6                            | 0               | Cl, s. m-c Sd, I. Siltstone Fragments (5 YR 5/6)                                                                                          |                                 |
| -27.                                                | 1     | $( \setminus )$                              | 50/2                 | 1                            |                 |                                                                                                                                           |                                 |
| -28-                                                |       | $\sim$                                       | 48                   | 1,                           | 0               | Weathered Siltstone a. Cl.   1 Sd matrix (5 YR 5/6)                                                                                       |                                 |
|                                                     |       | 1 / 1                                        | 48<br>50/3           | 1 1                          | v               | Weathered Sittstone a. U, 1.1 So that its or the over                                                                                     |                                 |
| -29.                                                | ļ     |                                              | [ <sup> </sup>       |                              |                 |                                                                                                                                           |                                 |
| -30-                                                |       |                                              | 30<br>50<br>50/2     | 12                           | 0               | Weathered Siltstone s. Cl, I. I Sd, t. c Sd (5 YR 5/6)<br>Weathered Bedrock                                                               |                                 |
| -32-                                                | -     | <u> </u>                                     | 41                   | 12                           | 0               | Weathered Siltstone I. CI, I. 1 Sd. matrix (S.Y.R. 5/6)                                                                                   |                                 |
| -33.                                                |       | `/ t                                         | 43                   |                              | v               | Weathered Sitistone For, it is a manage the area                                                                                          |                                 |
|                                                     |       | <u>بــــــــــــــــــــــــــــــــــــ</u> |                      | +                            |                 |                                                                                                                                           | B-15 (33.5-34                   |
| -34-<br>-35-                                        |       | , <b>†</b>                                   | 18<br>50/1           | 3                            | o               | Siltstone (5 YR 5/6)<br>Bedrock at 34.5 Feet<br>Bedrock - Sil TSTONE                                                                      |                                 |
| -36-                                                |       | Ì                                            | !                    | <b>↓</b>                     |                 | Bedrock - SILTSTONE                                                                                                                       |                                 |
| - 36-                                               |       | . 1                                          | 1 2                  | 1                            |                 | End of Boring at 36 Feet                                                                                                                  |                                 |

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| ĭ≊Κ                                             | illan        | n                       |                                   |                 |                     | BORING LOG                                                                                                                | 5: B-16          |
|-------------------------------------------------|--------------|-------------------------|-----------------------------------|-----------------|---------------------|---------------------------------------------------------------------------------------------------------------------------|------------------|
| DATE COM<br>DRILLER:<br>INSPECTOR<br>DRILLING N | <b>२</b> :   |                         | Jonathar                          |                 |                     | PROJECT: PSE&G: Former Front S<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A | Street Gas Works |
|                                                 |              |                         |                                   |                 |                     | LATTTUDE/LONGITUDE:                                                                                                       |                  |
| DEPTH                                           | SOL<br>CLASS | SAME                    |                                   | RECOVER         |                     | VISUAL                                                                                                                    | COMMENTS         |
| -0-                                             |              |                         | 6                                 | 7               | SCREENING (ppm<br>0 | DESCRPINON                                                                                                                | B-16 (0-0,5')    |
| -1-                                             |              |                         | 50/4                              | -               |                     | FILL                                                                                                                      |                  |
| -2-<br>-3-                                      |              |                         | <u>11</u><br><u>8</u><br><u>6</u> | - <sup>16</sup> | 0<br>2.1            | f Sd (5 YR 4/4)<br>Cl, t. Sit (5 YR 4/4)                                                                                  |                  |
| -+                                              |              |                         | 3                                 | 18              | 2.1                 | 1 Sd a. Sh (5 YR 4/4)                                                                                                     | B-16 (3.5-4')    |
| -5-                                             |              |                         |                                   |                 | 2.1                 | 1-m Sd, L Sh (5 YR 3/4)                                                                                                   |                  |
| -6-<br>.7.                                      | SP-SM        | $\square$               | 4                                 | 16              | 2.1                 | 1-m Sd, L Sh (5 YR 3/4)                                                                                                   |                  |
|                                                 | SP-SM        |                         | 5                                 | -               |                     | Poorly Graded SAND with SILT                                                                                              |                  |
| -8-<br>-9-                                      |              |                         | 8<br>10<br>13                     | 22              | 2.1                 | 1-m Sd, L Sk (5 YR 3/4)                                                                                                   |                  |
| -10-                                            |              |                         | 13                                | 18              | 4.3                 | 12* 1 Sd a_Sit (5 YR 3/4)                                                                                                 |                  |
| -11-                                            |              |                         | 8                                 | - "<br>-<br>-   | 0                   | 6" Sit (5 YR 3/4)                                                                                                         | B-16 (11-11.5')  |
| -12-                                            | ML           |                         | 10<br>15<br>17                    | 15              | 2.1                 | SH (5 YR 3/4)<br>SILT                                                                                                     |                  |
| ·13-                                            |              |                         | 18<br>20                          | -               |                     |                                                                                                                           |                  |
| -14-                                            |              | $\overline{\mathbf{n}}$ | 10                                | 16              |                     | 14" SH (5 YR 4/4)                                                                                                         |                  |
| -15-                                            |              |                         | 21<br>30<br>22                    | _               |                     | 2* f Sd a. Sit (5 YR 4/4)                                                                                                 |                  |
| - <b>16</b> -<br>-17-                           |              | $\square$               | 22<br>28<br>35                    | 14              | 4.3                 | f Sd a. Sh (5 YR 4/4)                                                                                                     | B-16 (17-17.5')  |
| -18-                                            |              |                         | 40<br>13<br>25                    | 16              | 0                   | 1-m-c Sd, s. Grv, I. Sit, t Ci (5 YR 4/4)                                                                                 |                  |
| •19-                                            |              |                         | 45                                | -               |                     | GLACIAL TILL                                                                                                              |                  |
| -20-<br>-21-                                    |              | $\square$               | 46                                | 15              | 0                   | Till; Siltstone a. f-m-c Sd, t. Cl (5 YR 5/6)                                                                             |                  |
| -22-                                            |              |                         | 15                                | 9               | 2.1                 | ]<br>I-m Sd, I. Cl, L c Sd (5 YR 5/6)                                                                                     |                  |
| -23-                                            |              |                         | 50/3                              | -               |                     |                                                                                                                           |                  |
| -24-                                            |              | $\left \right\rangle$   | 26<br>50/6                        | 6               | 2.1                 | Cl. I. m Sd. I. Weathered Siltstone (5 YR 5/6)                                                                            |                  |
| -25-                                            |              |                         |                                   |                 |                     |                                                                                                                           |                  |
| -26-<br>-27-                                    |              |                         | 39<br>44<br>48                    | 9               | C                   | Weathered Siltstone; CI, I. m Sd matrix (5 YR 4/4)                                                                        |                  |
| -28-                                            |              |                         | 50<br>38                          | 12              | 0                   | Weathered Sillstone; CI, I. I-m Sd matrix (5 YR 4/4)                                                                      |                  |
| -29-                                            |              |                         | 50/2                              |                 |                     | Weathered Bedrock                                                                                                         |                  |
| -30-                                            |              |                         | 100/5                             | N/R             | N/A                 | No Recovery, Silistone in tip of spoon                                                                                    | 8-16 (29.5-30')  |
| -31-<br>-32-                                    |              |                         | 19                                | N/R             | N/A                 |                                                                                                                           |                  |
|                                                 |              |                         | 100/4                             |                 | N/A                 | No Recovery                                                                                                               |                  |
| -33-<br>-34-                                    |              |                         | 100/0                             | N/R             | N/A                 | Bedrock at 33 Feet Bedrock - SILTSTONE                                                                                    |                  |
| -35-                                            |              |                         | 1                                 |                 |                     |                                                                                                                           | _                |
| -36-                                            |              |                         |                                   |                 |                     | End of Boring at 33 Feet                                                                                                  |                  |

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| <sup>⊯</sup> Ki                                     | llan         | 1                       |                |                              |                         | BORING LOG                                                                                                                            | LOG:        | B-17                   |
|-----------------------------------------------------|--------------|-------------------------|----------------|------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------|------------------------|
| DATE COMPL<br>DRILLER:<br>INSPECTOR:<br>DRILLING ME | ETED:        |                         |                | Drilling Inc.<br>B. Seckinge |                         | PROJECT: PSE&G: Former F<br>LOCATION: Newark, New Jen<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATTUDE/LONGTUDE: |             | ð <b>as</b> Works      |
|                                                     |              |                         |                |                              |                         | SURVEYED ELEVATION (R MSL)                                                                                                            | 37.2 (Grour | id)                    |
| DEPTH                                               | SOL<br>CLASS | SAMPLES                 | BLOW<br>COLNTS | RECOVERY                     | FIELD<br>SCREENING (ppm | VISUAL<br>DESCRIPTION                                                                                                                 |             | COMMENTS               |
| (FT)<br>-Q-                                         |              | $\overline{\mathbf{N}}$ | 8<br>7         | 10                           | 0                       | f-m Sd, I. Cl, I. Sit, I. Grv (5 YR 4/4)                                                                                              |             | B-17 (0-0.5')          |
| -1-                                                 |              |                         | 6              |                              |                         |                                                                                                                                       |             |                        |
| -2-                                                 |              | $\square$               | 4<br>33        | 10                           | 0                       | f-m Sd, I. Stt, I. Grv; Brick Fragments (5 YR 4/4)                                                                                    |             |                        |
|                                                     |              |                         | 2              |                              |                         |                                                                                                                                       |             |                        |
| -4                                                  |              | $\backslash$            | 4              |                              | 0                       | f Sd a. Sit (5 YR 5/6)                                                                                                                |             |                        |
| -5-                                                 |              |                         | 2              |                              |                         |                                                                                                                                       |             |                        |
| -6-                                                 |              |                         | 3              | 4                            | 0                       | f-m-c Sd, s. Sit, s. Giv, Glass (5 YR 4/4)                                                                                            |             |                        |
| -7-                                                 |              |                         | 2              | 1                            |                         |                                                                                                                                       |             |                        |
| *                                                   |              | $\vdash$                | 2              | 9                            | 0                       | m-c Sd, I SIL cbls (5 YR 4/4)                                                                                                         |             |                        |
| .9-                                                 |              |                         | 8              |                              |                         | FILL                                                                                                                                  |             |                        |
| -10-                                                |              | $\geq$                  | 30<br>18       | 12                           | 0                       |                                                                                                                                       |             |                        |
|                                                     |              |                         | 17             |                              | Ū                       |                                                                                                                                       |             |                        |
| -11-                                                |              |                         | 26<br>47       |                              |                         |                                                                                                                                       |             |                        |
| -12-                                                |              | $\left \right\rangle$   | 50/2           | 0                            | N/A                     | Refusal                                                                                                                               |             |                        |
| -13-                                                |              |                         |                | 1                            |                         |                                                                                                                                       |             |                        |
| -14-                                                |              |                         | 23             | 14                           | 0                       | m-c Sd, I, Sit, cbls (5 YR 4/4)                                                                                                       |             |                        |
| -15-                                                |              |                         | 19<br>13       |                              |                         |                                                                                                                                       |             |                        |
| -16-                                                |              |                         | 22<br>19       | 17                           | 0                       | 1 Sd a. Sit (5 YR 4/4)                                                                                                                |             | Moist                  |
| -17-                                                |              |                         | 9<br>8         |                              |                         |                                                                                                                                       |             |                        |
| -18-                                                |              |                         | 7.8            | 22                           | ٥                       |                                                                                                                                       |             |                        |
|                                                     |              |                         | 6              | <i>4</i>                     | U                       | If Sd a. Sit (5 YR 4/4)                                                                                                               |             | Moist<br>B-17 (18.5-1) |
| -19-                                                |              |                         | 7              |                              |                         |                                                                                                                                       |             | Wet                    |
| -20-                                                |              |                         | 7              | 20                           | D                       | f. Sd a Sit, L Grv (5 YR 4/4)                                                                                                         |             | Moist                  |
| -21-                                                |              |                         | <u>8</u>       |                              |                         |                                                                                                                                       |             |                        |
| -22-                                                |              |                         | 8              | 18                           | 0                       | f. Sd (5 YR 4/4)                                                                                                                      |             | Moist                  |
| -23-                                                | SW-SM        |                         | 9<br>14        |                              |                         | Weil Graded SAND with SILT                                                                                                            |             |                        |
| -24-                                                |              | $\vdash$                | 17<br>13       | 18                           | 0                       | 1. Sd, s. Sit (5 YR 4/4)                                                                                                              |             | Moist                  |
| -25-                                                |              | $\backslash$            | 14<br>9        |                              |                         |                                                                                                                                       |             | B-17 (25.5-2           |
|                                                     |              |                         | 14             |                              |                         |                                                                                                                                       |             |                        |
| -26-                                                |              | $\mathbf{n}$            | 9<br>10        | 16                           | 0                       | f. Sd, s. Sit (5 YR 4/4)                                                                                                              |             | Wet                    |
| -27-                                                |              |                         | 12<br>15       |                              |                         |                                                                                                                                       |             |                        |
| -28-                                                |              |                         | <u>8</u><br>9  | 16                           | 0                       | f Sd a Sit (5 YR 4/4)                                                                                                                 |             | Wet                    |
| -29.                                                |              |                         | 12             |                              |                         |                                                                                                                                       |             |                        |
| -30-                                                |              |                         | 14<br>5        | 12                           | 0                       | 1 Sd a Sit (5 YR 4/4)                                                                                                                 |             | Wet                    |
| -31-                                                |              |                         | 6<br>6         |                              |                         |                                                                                                                                       |             |                        |
| -32-                                                |              |                         | 13             | 16                           | 0                       |                                                                                                                                       |             | A/_+                   |
|                                                     |              | $\left  \right\rangle$  | 12             | 10                           | U                       | f Sd a. Sit (5 YR 4/4)                                                                                                                |             | Wet                    |
| -33-                                                |              |                         | 13<br>17       |                              |                         |                                                                                                                                       |             |                        |
| -34-                                                |              | $\mathbf{X}$            | 27<br>38       | 16                           | 0                       | / Sd a Sk (5 YR 4/4)                                                                                                                  | 1           | Wet                    |
|                                                     |              |                         | 43             |                              |                         | 1                                                                                                                                     | 1           |                        |

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|--------------------------------------------------|-------|----------|----------------------------------------------------|---------------------------------------|---------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------|
| DATE COMP<br>DRILLER:<br>NSPECTOR<br>DRILLING MI |       |          | June 9, 19<br>Advanced<br>Jonathan &<br>Hollow Ste | Drilling Ind<br>B. Secking<br>m Auger | er                        |                                                                                       | PROJECT: PSE&G: Former F<br>LOCATION: Newark, New Jen<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A | Front Street Gas Works<br>sey |
| DEPTH<br>(FT)                                    | SOL   | SAMPLES  | BLOW<br>COLNTS                                     | RECOVERY                              | FIELD<br>SCREENING (perm) |                                                                                       | VISUAL                                                                                                           | COMMENTS                      |
| -36-                                             | 1     |          | 38                                                 | 24                                    | O CHEENING (perty)        | f. Sd a. Sit, t. Grv, Sandstone Pebbles (5 YR 4/4                                     | ESCRIPTION                                                                                                       |                               |
| -37-                                             | SW-SM |          | 57<br>42<br>37                                     |                                       |                           |                                                                                       | d SAND with SILT                                                                                                 | Wet                           |
| -38-                                             |       |          | 17                                                 | 22                                    | 0                         | Sit, s. Ci (5 YR 4/4)                                                                 |                                                                                                                  | Wet                           |
| -39-                                             | ML    |          | 28<br>44<br>48                                     |                                       |                           |                                                                                       | SILT                                                                                                             |                               |
| -40-                                             |       |          | 45                                                 | 20                                    | 0                         | 10" Sit, I. Cl; 10" f. Sd, s. Sit, s. Grv; Glacial Till (                             | (5 YR 4/4)                                                                                                       | Wet                           |
| -41-                                             |       |          | 50/3                                               |                                       |                           |                                                                                       |                                                                                                                  | B-17 (41-41.5                 |
| -42-                                             |       |          | 45<br>50/2                                         | 6                                     | 0                         | f Sd a. Grv (sub-angular SYR 4/4 & 10YR 4/2),<br>s. Slt; Glacial Till                 |                                                                                                                  | Wet                           |
| -43-                                             |       |          | <u> </u>                                           |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -44-                                             |       |          | 37<br>45                                           | 14                                    | 0                         | Sit a. Grv, I. L. Sd; Glacial Till (S YR 4/4)                                         |                                                                                                                  | Wet                           |
| -45-                                             |       |          | 50/3                                               |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -46-                                             |       |          | 14<br>29<br>33                                     | 6                                     | 0                         | GLA<br>Slt a. Grv, I. f. Sd; Glacial Till (5 YR 4/4)                                  | ICIAL TILL                                                                                                       | Wet                           |
| -47-                                             |       |          | 38<br>50/3                                         |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -48-                                             |       |          | 42<br>100/4                                        | 10                                    | 0                         | First attempt: Break 2" spoon;<br>Second attempt: Glacial Till, Slt a. Grv (5 YR 4/4) | )                                                                                                                | Wet                           |
| -49-                                             |       |          |                                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -50-                                             |       |          | 27<br>36                                           | 22                                    | 0                         | Glacial Till; Slt a. Grv (10YR 4/2)                                                   |                                                                                                                  | Wet                           |
| -51-                                             |       |          | <u>48</u><br>55                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -52-                                             |       |          | 47<br>50/2                                         | 10                                    | 0                         | Glacial Till; Slt a. Grv (10YR 4/2)                                                   |                                                                                                                  | Wet<br>B-17 (53.5-54)         |
| -53-                                             |       |          |                                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -54-                                             |       |          | 100/1                                              | 2                                     | o                         | Sit s. Grv; Weathered Bedrock (5 YR 4/4)                                              |                                                                                                                  | Wet                           |
| -55-                                             |       |          | 50/0                                               | 0                                     | N/A                       | Weathered Bedrock (5 YR 4/4)<br>Weather                                               | red Bedrock                                                                                                      |                               |
| -56-                                             |       |          |                                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -57-                                             |       |          |                                                    |                                       |                           | End of Bor                                                                            | ring at 57 Feet                                                                                                  |                               |
| -58-                                             |       |          |                                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -59-                                             |       |          |                                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |
| -60-                                             |       |          |                                                    |                                       |                           |                                                                                       |                                                                                                                  |                               |

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| ¤Kill         | lam           | 1                                                |                                                    |                                              |                         | BORING LOG                                                                                                                              | LOG:       | B-18                            |
|---------------|---------------|--------------------------------------------------|----------------------------------------------------|----------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------|
| ATE COMPLET   | ED:           | <u> </u>                                         | June 30, 1<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling Inc<br>3. Seckinge                  |                         | PROJECT: PSE&G: Former A<br>LOCATION: Newark, New Jen<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATITUDE/LONGITUDE: |            | Gas Works                       |
|               |               |                                                  |                                                    |                                              |                         | SURVEYED ELEVATION (# MSL)                                                                                                              | 32.1 (Grou | ind)                            |
| DEPTH<br>(F7) | SOR.<br>CLASS | SAMPLES                                          | BLOW<br>COUNTS                                     | RECOVERY<br>(IN )                            | FIELD<br>SCREENING (por | VISUAL<br>DESCRIPTION                                                                                                                   |            | COMMENTS                        |
| -0-           |               |                                                  |                                                    |                                              |                         | Asphalt and Concrete (0-1')                                                                                                             |            | <u>+</u>                        |
| -1-           |               | <u></u>                                          | 10                                                 | 10                                           | 0                       | f-m-c Sd a. Grv, I. Slt; Fill (5 YR 4/4)                                                                                                |            | 8-18 (1-1.5')                   |
| -2-           |               |                                                  | 9<br>5<br>4                                        |                                              |                         |                                                                                                                                         |            |                                 |
| -3-           |               | $\sim$                                           | 7                                                  | 3                                            | 0                       | f-m-c Sd, I. Grv, I. Sit (5 YR 4/4)                                                                                                     |            |                                 |
| -             |               |                                                  | 6<br>7<br>7                                        | 9                                            | 0                       | f-m-c Sd, I. Grv, I. Sit (5 YR 3/4)<br>Asphalt in tip of spoon (N1)                                                                     |            |                                 |
| -5-           |               |                                                  | 8                                                  |                                              |                         |                                                                                                                                         |            |                                 |
| -6-           |               |                                                  | 4                                                  | 11                                           | 0                       | f-m-c Sd, I. Grv, t. Sit (S YR 3/4)                                                                                                     |            |                                 |
| -7-           |               |                                                  | 3                                                  | 1                                            |                         | FILL                                                                                                                                    |            |                                 |
| -8-           |               | $ \longrightarrow $                              | 2                                                  | 13                                           | 0                       | I-m Sd, s. Grv, t. Sit (5 YR 3/4)                                                                                                       |            |                                 |
|               |               |                                                  | 2                                                  |                                              |                         |                                                                                                                                         |            |                                 |
|               |               |                                                  | 1                                                  | <u>                                     </u> |                         |                                                                                                                                         |            |                                 |
| -10-          |               | $\mathbf{i}$                                     | _2<br>2                                            | 13                                           | 2.1                     | f-m Sd, t coarse Sd, t Grv (5 YR 3/4)                                                                                                   |            |                                 |
| -11-          |               |                                                  | 3                                                  |                                              |                         |                                                                                                                                         |            |                                 |
| -12-          |               |                                                  | 9                                                  | 18                                           | 0                       | 11" f-m-c Sd a. Grv, t. Sit (5 YR 4/4)                                                                                                  |            | B-18 (11.5-12                   |
| -13-          |               |                                                  | 11<br>13                                           |                                              |                         | 7" f Sd, I. Stt (5 YR 6/4)                                                                                                              |            | -                               |
| -14-          | }             | <u> </u>                                         | <u>11</u>                                          | 18                                           | 0                       | 5" Sit, I. I Sd (5 YR 4/4)                                                                                                              |            |                                 |
|               | Ì             | $\mathbf{i}$                                     | 4                                                  |                                              | Ŭ                       | 4" Sit (5 YR 4/4)                                                                                                                       |            | Moist,                          |
| -15-          |               |                                                  | 7                                                  |                                              |                         | 9" f Sd, I. Sit (5 YR 4/4)                                                                                                              |            | holding water                   |
| -16-          |               |                                                  | 13<br>13                                           | 18                                           | o                       | 7" f-m-c Sd a. Grv, t Sit (5 YR 4/4)<br>11" f Sd, t Sit (5 YR 6/4)                                                                      |            |                                 |
| -17-          |               |                                                  | 12                                                 |                                              |                         |                                                                                                                                         |            |                                 |
| -18-          | ľ             |                                                  | 14                                                 | 16                                           | D                       |                                                                                                                                         |            |                                 |
| -19-          |               |                                                  | 11<br>12                                           |                                              |                         | 3" Sht (5 YR 4/4)<br>6" f Sd, I. Sht (5 YR 6/4)                                                                                         |            |                                 |
|               |               | $ \rightarrow $                                  | 15                                                 |                                              |                         |                                                                                                                                         |            |                                 |
| -20-          |               | $\mathbf{X}$                                     | 20<br>14                                           | 20                                           | 0                       | 8" Sit, I, f Sd (5 YR 4/4)<br>12" f Sd a. Sit (5 YR 4/4)                                                                                |            |                                 |
| -21-<br>S     | W-SM          |                                                  | 14<br>13                                           |                                              |                         | Well Graded SAND with SILT                                                                                                              |            | B-18 (21-21.5<br>Wet at 21.5 Fe |
| -22-          |               |                                                  | 4                                                  | 20                                           | 0                       | 18" / 5d, L Sit (5 YR 3/4)                                                                                                              |            |                                 |
| -23-          |               |                                                  | 8                                                  |                                              |                         | 2" SIL L I Sd (5 YR 3/4)                                                                                                                |            |                                 |
| ·24-          | Ļ             | <del>.                                    </del> | 9<br>10                                            | 14                                           | 0                       | SIL L 1 Sd (5 YR 4/4)                                                                                                                   |            |                                 |
| -25-          |               |                                                  | 17<br>17                                           |                                              |                         |                                                                                                                                         |            | 1                               |
|               |               |                                                  | 20                                                 |                                              |                         |                                                                                                                                         |            |                                 |
| -26-          |               | $\setminus$ [                                    | 23<br>50/3                                         | 9                                            | 2.1                     | Sh, L f Sd (5 YR 4/4)                                                                                                                   |            |                                 |
| -27.          |               |                                                  |                                                    |                                              |                         |                                                                                                                                         |            |                                 |
| -28-          | ł             |                                                  | 16                                                 | 20                                           | 0                       | 8" Sit, I. f Sd (5 YR 4/4)                                                                                                              |            |                                 |
| -29-          |               |                                                  | 23<br>38                                           |                                              |                         | 12" f Sd, t Sit (5 YR 3/4)                                                                                                              |            |                                 |
| -30-          | +             | $ \rightarrow $                                  | 48<br>38                                           | 7                                            | 2.1                     | 1 Sd, I. Sit (10 YR 4/2)                                                                                                                |            |                                 |
|               | 1             | $\searrow$                                       | 50/4                                               |                                              | <b>.</b>                |                                                                                                                                         |            |                                 |
| -31-          |               |                                                  |                                                    |                                              |                         |                                                                                                                                         |            | B-18 (31.5-32                   |
| -32-          |               | $\overline{\}$                                   | 58<br>50/4                                         | 12                                           | 0                       | Sit, t 1 Sd (5 YR 4/4)                                                                                                                  |            |                                 |
| -33-          |               |                                                  |                                                    |                                              |                         |                                                                                                                                         |            |                                 |
| -34-          | ML ,          | <del>)</del>                                     | 32                                                 | 13                                           | 0                       |                                                                                                                                         |            |                                 |
| -35-          |               | l 🔨 F                                            | <u>34</u><br>50/4                                  |                                              |                         |                                                                                                                                         |            |                                 |
|               |               |                                                  | 30/4                                               |                                              |                         |                                                                                                                                         |            |                                 |

K VENGLOGSTOPLOGSTEL 18 SHEET 1 OF 2

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|                                                        | llan          | <u> </u>                |                                                    |                                       |                 | IG LOG (continued)                                                                                                           | B-18            |
|--------------------------------------------------------|---------------|-------------------------|----------------------------------------------------|---------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------|-----------------|
| ATE COMPL<br>RILLER:<br>ISPECTOR:<br><u>RILLING ME</u> |               |                         | June 30, 1<br>Advanced<br>Jonathan 8<br>Hollow Ste | Drilling Ind<br>3. Secking<br>m Auger |                 | PROJECT: PSE&G: Former Front Stri<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A | eet Gas Works   |
| DEPTH<br>(FT)                                          | SOIL<br>CLASS | SAMFLES                 | BLOW<br>COLNTS                                     | RECOVERY                              | FIELD           | VISUAL                                                                                                                       | COMMENTS        |
| -36-                                                   |               | $\overline{\mathbf{N}}$ | 16                                                 | 14                                    | SCREENING (ppm) | Sit (5 YR 4/4)                                                                                                               |                 |
| -37-                                                   | ML.           |                         | 32<br>50/5                                         |                                       |                 | SILT                                                                                                                         |                 |
| -38-                                                   |               |                         | 7                                                  | 13                                    | 0               | 11" I Sd a. Sit (5 YR 4/4)<br>2" Sit, t. f Sd (5 YR 4/4)                                                                     |                 |
| -40-                                                   |               |                         | 50/5<br>37                                         | 6                                     | C               | Sit a. f-m-c Sd; Till (5 YR 4/4)                                                                                             |                 |
| -41-                                                   |               |                         | 50/1                                               |                                       |                 |                                                                                                                              |                 |
| -42-                                                   |               |                         | 27<br>34                                           | 12                                    | 0               | Cl matrix; f-m-c Sd (5 YR 5/6)                                                                                               |                 |
| -43-                                                   |               |                         | 50/6                                               |                                       |                 | GLACIAL TILL                                                                                                                 |                 |
| -44.                                                   |               |                         | 50/1                                               | N/R                                   | N/R             | 44-45' Boulder; No Recovery                                                                                                  |                 |
| -45-                                                   |               |                         |                                                    |                                       |                 |                                                                                                                              |                 |
| -46-                                                   |               |                         | 46<br>50/6                                         | 11                                    | 0               | T-m-c Sd, I. Sit, I. Ci (5 YR 4/4)                                                                                           |                 |
| -48-                                                   |               |                         | 46                                                 | 9                                     | 0.7             | Weathered Siltstone s. Cl. I. Sit, I. f-m-c Sd matrix (5 YR 4/4)                                                             |                 |
| -49-                                                   |               |                         | 50/3                                               |                                       |                 |                                                                                                                              |                 |
| -50-                                                   |               |                         | 100/6                                              | 11                                    | 0.4             | Weathered Siltstone I. Cl. J. Sit matrix (5 YR 4/4)                                                                          | 1               |
| -51-                                                   |               | $\sim$                  |                                                    |                                       |                 | Weathered Bedrock                                                                                                            |                 |
| -52-                                                   | ĺ             |                         | 25                                                 | 12                                    | 0               | Weathered Siltstone I. CI mathx (5 YR 4/4)                                                                                   |                 |
| -53-                                                   |               |                         | 32<br>50/3                                         |                                       |                 |                                                                                                                              | B-18 (52,5-53') |
| -54-                                                   |               |                         | 100/0                                              | N/R                                   | N/R             | Bedrock at 54 Feet                                                                                                           |                 |
| -55-                                                   |               |                         |                                                    |                                       |                 | Bedrock - SILTSTONE                                                                                                          |                 |
| -56-                                                   |               |                         |                                                    |                                       |                 | End of Boring at 56 Feet                                                                                                     |                 |
| 57-                                                    |               |                         |                                                    |                                       |                 |                                                                                                                              |                 |
| -58-                                                   |               |                         |                                                    |                                       |                 |                                                                                                                              |                 |
| .60-                                                   |               |                         |                                                    |                                       |                 |                                                                                                                              |                 |

K VENGLISSTOPLOGSVE IN

SHEET 2 OF 2

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| -K1        | illan | <b>n</b>               |                 |                                               |                 | BORING LOG                                                                   | LOG:                     | B-19                 |
|------------|-------|------------------------|-----------------|-----------------------------------------------|-----------------|------------------------------------------------------------------------------|--------------------------|----------------------|
| ATE COMPL  |       |                        | June 15, 1      | 998                                           |                 | PROJECT: PSE&G: Former Fro                                                   | nt Street                | Sas Works            |
| RILLER:    |       |                        | Advanced        |                                               | coporated       | LOCATION: Newark, New Jersey                                                 |                          | Gea WUIKS            |
| SPECTOR:   |       |                        | Jonathan I      | B. Secking                                    | ter             | KILLAM PROJECT NUMBER: 263709                                                | •                        |                      |
| RILLING ME | THOD  |                        | Hollow Ste      | m Auger                                       |                 | STATE CASE NUMBER N/A                                                        |                          |                      |
|            |       |                        |                 |                                               |                 | LATITUDE/LONGITUDE:                                                          |                          |                      |
| DEPTH      | SOL   | SAMFLES                | BLOW            | RECOVERY                                      | FIELD           | SURVEYED ELEVATION (ft MSL): 3                                               | 7 1 (Grou                | nd)<br>comen         |
| (FT)       | CLASS |                        | COLNTS .        |                                               | SCREENING (ppm) | DESCRIPTION                                                                  | <b>-</b> · · · · · · · · |                      |
| -0-        |       |                        |                 | 1                                             |                 |                                                                              |                          | B-19 (0-0.5          |
| -1-        | [     |                        | 16              | - 9                                           | 0               | 1" Asphalt sub-base (N2), 1" Brick (10 YR 4/0)                               |                          | MGP Odor             |
| -2-        |       | $\vdash$               | <u>11</u><br>5  | 12                                            | 1.5<br>1.6      | f-m Sd, s. Coal Fragments (5 YR 7/2)<br>f-m Sd, I. Coal Fragments (5 YR 7/2) |                          |                      |
|            | 1     | $  \rangle$            | 4               | ] -                                           |                 |                                                                              |                          | l                    |
| -3-        | 1     |                        | 3               | 1 I                                           | ł               | FILL                                                                         |                          |                      |
| -4-        | 1     | $\square$              | 4               | 9                                             | 1.6             | f-m Sd, I. Sit, s. Coal Fragments (10 YR 6/2)                                |                          |                      |
| -5-        | 1     |                        | 3               |                                               |                 | Brick in nose of spoon (10 YR 5/4)                                           | ]                        | l                    |
| ~          | ł     |                        | 12              | 11                                            |                 |                                                                              |                          |                      |
| -6-        |       |                        | 5               | 6                                             | 1.6             | f-m Sd, I. c Sd, s. Grv (5 YR 3/4)                                           |                          | 1                    |
| -7-        |       |                        | 5               | 1                                             | I               |                                                                              |                          | 1                    |
|            |       | $\vdash$               | 7               | <u>                                      </u> | · · · ·         |                                                                              |                          |                      |
| -8-        |       |                        | 8               | 12                                            | 1.6             | Weathered Shale; f-m Sd a. Sit matrix (5 YR 3/4)                             |                          | I                    |
| -9-        |       |                        | 8               | 1                                             |                 |                                                                              |                          |                      |
| -10-       |       | $ \vdash $             | 8               | 13                                            | 1.6             | f-m Sd. I, c Sd, t Grv (5 YR 3/4)                                            |                          |                      |
|            |       |                        | 8               |                                               | Ì               |                                                                              |                          | -                    |
| -11-       |       |                        | 7               |                                               |                 |                                                                              |                          |                      |
| -12-       |       |                        | 7               | 18                                            | 0               | f-m Sd, t Sit, t Grv (5 YR 5/2)                                              |                          |                      |
| - 13-      |       | $  \rangle  $          | 8               |                                               |                 |                                                                              |                          |                      |
| -          |       |                        | 9               | ┝┈┼                                           |                 |                                                                              | ļ                        |                      |
| -14-       |       | $  \setminus  $        | 8               | 16                                            | 1.6             | f-m Sd, I. Sit, I. Grv (5 YR 5/2)                                            |                          |                      |
| -15-       |       | $  \setminus  $        | 11              |                                               |                 | 1                                                                            | ł                        |                      |
| ·16-       |       | $ \vdash  $            | 15<br>11        | 19                                            | 0               | 1-m-c Sd, s. Sit, s. Grv (5 YR 4/4)                                          |                          |                      |
|            |       | $  \rangle  $          | 11              |                                               | -               | · · · · · · · · · · · · · · · · · · ·                                        |                          |                      |
| -17-       | SP/SM | $\lfloor \ \setminus $ | <u>13</u><br>14 |                                               |                 | Poorly Graded SAND with SILT                                                 |                          |                      |
| -18-       |       |                        | 9               | 18                                            |                 | Sit I. f. Sd (5 YR 4/4)                                                      |                          |                      |
| -19-       |       | $  \setminus  $        | 6<br>5          | 1                                             | 27              | 1 Sd a. Stt (N3)                                                             |                          |                      |
| Í          |       | <u> </u>               | 9               |                                               | ]               |                                                                              |                          |                      |
| -20-       |       | $  \setminus  $        | 5               | 15                                            |                 | 6" I-m-c Sd, s. Grv (5 YR 4/4)<br>9" I Sd, s. Str (5 YR 4/4)                 |                          | Maist                |
| -21-       | i     | $ $ $\setminus$ $ $    | 12              |                                               |                 | 9" f Sd, s. Sit (5 YR 4/4)                                                   |                          | Moist                |
| -22-       |       | $\vdash$               | 12<br>13        | 20                                            |                 | ton Salt SH (SYD A/A)                                                        |                          | 14-1 F               |
|            |       |                        | 19              | 20                                            | U               | f-m Sd, t. Slt (S YR 4/4)                                                    |                          | Moist                |
| -23-       |       |                        | 20              |                                               | 1               |                                                                              | 1                        |                      |
| -24-       |       |                        | 22<br>14        | 15                                            | 50              | f Sd, s. Sh (5 YR 4/4)                                                       | {                        | Moist                |
| -25-       | ł     | ' ∕ I                  | 17              |                                               |                 |                                                                              |                          |                      |
|            |       | <u> </u>               | 20<br>21        |                                               |                 |                                                                              | ·                        | B-19 (25.5-26        |
| -26-       | Ì     |                        | 16              | 20                                            | 4               | f Sd, s. Sit (5 YR 4/4)                                                      |                          | Moist                |
| -27-       |       | ! ∖ ŀ                  | <u>16</u><br>13 |                                               |                 |                                                                              |                          |                      |
|            |       | $\overline{}$          | 17              |                                               |                 |                                                                              |                          | B-19 (27.5-28        |
| -23-       |       | 1 🔨 - F                | 15<br>16        | 24                                            | 16              | f Sd, s. Sit (5 YR 4/4)                                                      |                          | Net                  |
| -29-       | SM-SM |                        | 27              |                                               |                 | Well Graded SAND with SILT                                                   | 1                        |                      |
| -30-       |       | <u> </u>               | 29<br>15        | 24                                            | 18 :            | Sit. s f Sd (5 YR 4/4)                                                       |                          | Vet                  |
|            |       |                        | 16              |                                               |                 | · x- ··· · · · ·                                                             | ľ                        | Net                  |
| •31-       |       |                        | 26<br>27        |                                               |                 |                                                                              |                          | 1 40                 |
| -32-       | •     |                        | 34              | 24                                            | 13 :            | Sit, s. f. Sd (5 YR 4/4)                                                     |                          | 3-19 (31.5-32<br>Wet |
| -33-       |       | _ \  -                 | 56<br>50/2      |                                               |                 |                                                                              | ľ                        |                      |
|            |       |                        |                 |                                               |                 |                                                                              |                          |                      |
| -34-       | ľ     |                        | 22              | 20                                            | 1 (             | f. Sd, s. Slt, s. Grv, s. c Sd (5 YR 4/4)                                    | l •                      | Vet                  |
| -35-       |       | - ` <b>\</b>  -        | 38<br>50/2      |                                               |                 |                                                                              |                          |                      |
| f          | 1     |                        |                 |                                               | 1               |                                                                              | *                        |                      |

| <u>^Кı</u>                                    | llan         | ר.                      |                                                    |                                       |                          | BORING LOG (continued)                                                                                                | .og: B-19       |
|-----------------------------------------------|--------------|-------------------------|----------------------------------------------------|---------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------|
| TE COMPL<br>RILLER:<br>SPECTOR:<br>RILLING ME |              |                         | June 15, 1<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling In<br>B. Secking<br>em Auger | ger                      | PROJECT: PSE&G: Former Fro<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A |                 |
| DEPTH                                         | SOL<br>CLASS | SAMPLES                 | BLOW                                               | RECOVERY                              | FIELD<br>SCREENING (ppm) | VISIAL                                                                                                                | COMMENTS        |
| -36-                                          | CLASS        | $\overline{\mathbf{k}}$ | 42                                                 | 20                                    |                          | DESCRIPTION                                                                                                           | Wet             |
| -37-                                          | SW-SM        | $\left  \right\rangle$  | 50/5                                               |                                       |                          | WELL GRADED SAND WITH SILT                                                                                            |                 |
| -38-                                          |              | $\overline{\nabla}$     | 26                                                 | 20                                    | 0                        | Sit, L Ci (5 YR 4/4)                                                                                                  | Wet             |
| -39-                                          | ML           |                         | 29<br>32<br>30                                     | -                                     |                          | SILT                                                                                                                  |                 |
| -40-                                          | -            | K`                      | 7                                                  | 20                                    | 0                        | Sit, t Cl, t Grv; Glacial Till (5 YR 4/4)                                                                             | Wet             |
| -41-                                          |              |                         | 9<br>22<br>32                                      | -                                     |                          |                                                                                                                       |                 |
| -42-                                          |              | $\square$               | 27<br>38                                           | 20                                    | 0                        | Sit, t. Grv; Glacial Till (S YR 4/4)                                                                                  | Wet             |
| -43-                                          |              | $  \setminus$           | 50/2                                               | -                                     |                          |                                                                                                                       |                 |
| -44-                                          |              |                         | 22<br>27                                           | 8                                     | 0                        | Sit a. Grv; Glacial Till (5 YR 4/4)<br>GLACIAL TILL                                                                   | Wet             |
| -45-                                          |              |                         | 30<br>33                                           | -                                     |                          |                                                                                                                       |                 |
| -46-                                          |              |                         | 48<br>50/4                                         | 10                                    | 0                        | Sit a. Grv; Glacial Till (5 YR 4/4)                                                                                   | Wet             |
| -47-                                          |              |                         |                                                    |                                       |                          |                                                                                                                       | ł               |
| -48-                                          |              |                         | 100/6                                              | 6                                     | o                        | Sit a. Grv; Glaciai Till (5 YR 4/4)                                                                                   | Wet             |
| -49-                                          |              |                         |                                                    |                                       |                          |                                                                                                                       |                 |
| -50-                                          |              |                         | <u>1</u> 00/4                                      | 6                                     | 0                        | Sit a. Grv, s. Weathered Bedrock, s. Siltstone (5 YR 4/4)                                                             | Wet             |
| -51-                                          |              | $\square$               |                                                    |                                       |                          |                                                                                                                       |                 |
| -52-                                          |              |                         | 100/4                                              | 12                                    | 1                        | Sit a. Weathered Bedrock (5 YR 4/4)                                                                                   | Wet             |
| -53-                                          |              |                         |                                                    |                                       |                          |                                                                                                                       |                 |
| -54                                           |              | $ \rightarrow $         | 100/6                                              | 12                                    |                          | Weathered Bedrock                                                                                                     |                 |
| [                                             |              |                         |                                                    | 14                                    | •                        | Sit a. Weathered Bedrock (5 YR 4/4)                                                                                   | Wet             |
| -55-                                          |              |                         |                                                    |                                       |                          |                                                                                                                       |                 |
| -56-                                          |              |                         | 100/4                                              | 12                                    | 5                        | Sit a. Weathered Bedrock (5 YR 4/4)                                                                                   | Wet             |
| -57-                                          |              |                         |                                                    |                                       |                          |                                                                                                                       | B-19 (57.5-58') |
| -58-                                          |              |                         | 100/1                                              | 2                                     | o                        | Bedrock at 58 Feet                                                                                                    |                 |
| -59-                                          |              |                         |                                                    |                                       |                          | Bedrock - SILTSTONE                                                                                                   |                 |
| -60-                                          |              |                         |                                                    |                                       |                          | End of Boring at 58 Feet                                                                                              |                 |

\* VETAGLISSTOOLOGSVELIS

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| ¤Kill                                                    | am       |                      |                                      |                            |                 | BORING LOG                              |                                                                               | LOG: B-20          |
|----------------------------------------------------------|----------|----------------------|--------------------------------------|----------------------------|-----------------|-----------------------------------------|-------------------------------------------------------------------------------|--------------------|
| DATE COMPLETE<br>DRILLER:<br>NSPECTOR:<br>DRILLING METHO | D:       | <u> </u>             | June 11, 1<br>Advanced<br>Jonathan f | Drilling Inc<br>3. Secking |                 |                                         | LOCATION: Newark, New<br>KILLÄM PROJECT NUMBER: 263<br>STATE CASE NUMBER: N/A |                    |
|                                                          |          |                      |                                      |                            |                 |                                         | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (/t MSL):                           | 39.5 (Ground)      |
| DEPTH                                                    | 501.     | SAMPLES              | BLOW                                 | RECOVERY                   | FIELD           |                                         | VISUAL                                                                        | CONST              |
| -0-                                                      | CLASS    |                      | COLNTS                               | <u> _(∾)</u>               | SCREENING (ppm) |                                         | Descherton                                                                    |                    |
| -1-                                                      |          |                      | 11                                   | 20                         | 0               | f-m-c Sd, s. Grv, I. Sit (5 YR 3/4)     |                                                                               | Dry                |
| -2-                                                      |          | $\sim$               | 12<br>7                              | 12                         | 0               |                                         |                                                                               | B-20 (1.5<br>Dry   |
|                                                          |          | $\mathbf{i}$         | 7                                    |                            | 5               |                                         |                                                                               |                    |
| -3-                                                      |          |                      | <u>8</u><br>11                       |                            |                 |                                         |                                                                               |                    |
| -4                                                       |          |                      | 12                                   | 12                         | 0               | f-m-c Sd, s. Grv, large cobbles (5 )    | (R 4/4)                                                                       | Dry                |
| -5-                                                      |          |                      | 12<br>12                             | 1                          |                 |                                         |                                                                               |                    |
| -6-                                                      |          | <u> </u>             | 8                                    | 10                         | 0               | f-m-c Sd, s. Grv, large cobbles (5 )    | (R 4/4)                                                                       | Dry                |
| -7-                                                      |          |                      | 7                                    |                            |                 |                                         |                                                                               |                    |
| -8-                                                      |          |                      | 8<br>6                               | 12                         | 0               | <br>f-m-c Sd, s. Grv, I. Sit (5 YR 4/4) |                                                                               | Dry                |
|                                                          |          | $\mathbf{i}$         | 8                                    |                            | -               |                                         | FILL                                                                          | - ,                |
| -9-                                                      |          |                      | 6<br>10                              |                            |                 |                                         |                                                                               |                    |
| -10-                                                     |          | $\overline{\}$       | 20                                   | 12                         | 0               | m-c Sd, s. Grv, I. Sit (5 YR 4/4)       |                                                                               | Moist              |
| -11-                                                     |          |                      | <u>6</u><br>5                        |                            |                 |                                         |                                                                               |                    |
| -12-                                                     |          | <u> </u>             | 7                                    | 20                         | 0               | m-c Sd, s. Grv, I. Sit (5 YR 4/4)       |                                                                               | Moist              |
| -13-                                                     |          |                      | 8                                    | 1                          |                 |                                         |                                                                               |                    |
| - 14-                                                    |          | $\rightarrow$        | 7                                    | 20                         | 0               | m-c Sd, s. Grv (5 YR 4/4)               |                                                                               | Dry                |
| -15-                                                     |          |                      | 14<br>10                             |                            |                 |                                         |                                                                               |                    |
|                                                          |          | <u> </u>             | 8                                    |                            |                 |                                         |                                                                               |                    |
| -16-                                                     |          | $\mathbf{i}$         | 10<br>9                              | 22                         | 0               | f-m Sd, s. Sit (5 YR 4/4)               |                                                                               | Moist              |
| -17-                                                     |          |                      | <u>8</u><br>9                        |                            |                 |                                         |                                                                               |                    |
| -18-                                                     |          |                      | 9<br>8                               | 22                         | 0               | f-m Sd, I, Sit (5 YR 4/4)               |                                                                               | Moist              |
| -19-                                                     |          |                      | 7                                    |                            |                 |                                         |                                                                               | B 20 (40           |
| -20-                                                     | ļ        |                      | 8<br>5                               | 20                         | 0               | f-m Sd, s. Sit (5 YR 4/4)               |                                                                               | 8-20 (19.<br>Moist |
| -21-                                                     | SP-SM    |                      | 6                                    | -                          |                 |                                         | Poorty Graded SAND with SILT                                                  |                    |
| •22•                                                     |          |                      | 7<br>7                               | 22                         | 0               | f-m-c Sd, s. Grv, I. Sit (5 YR 4/4)     |                                                                               | Moist              |
|                                                          |          | $\mathbf{i}$         | 6                                    |                            | Ū               |                                         |                                                                               |                    |
| -23-                                                     |          |                      | 9<br>14                              |                            |                 |                                         |                                                                               |                    |
| -24-                                                     |          | $\mathbf{i}$         | 5<br>6                               | 20                         | 0               | f-m Sd, s. Sit (5 YR 4/4)               |                                                                               | Moist              |
| -25-                                                     |          |                      | 9                                    |                            |                 |                                         |                                                                               |                    |
| ·26-                                                     |          | $\overline{}$        | 10<br>16                             | 22                         | 0               | f. Sd. I. Sit (5 YR 4/4)                |                                                                               | Moist              |
| -27-                                                     |          | $\mathbf{i}$         | 16<br>17                             |                            |                 |                                         |                                                                               |                    |
| -28-                                                     | ł        |                      | 28<br>10                             | 22                         | 0               | f. Sd, I. Sit (5 YR 4/4)                |                                                                               | Very Mois          |
|                                                          | SW-SM    | $\mathbf{X}$         | 9                                    | -                          | ·               |                                         | Well Graded SAND with SILT                                                    | ,                  |
|                                                          | 277 - 3M |                      | 12                                   | ┆                          |                 |                                         | THE GIBLES ON AD WILL OF I                                                    | B-20 (29.          |
| -30-                                                     |          | $\mathbf{X}$         | 5<br>5                               | 20                         | 1               | f-m Sd, I. Sit (5 YR 4/4)               |                                                                               | Wet, MG            |
| -31-                                                     |          |                      | 6                                    |                            |                 |                                         |                                                                               |                    |
| -32-                                                     |          | $\overline{\langle}$ | 6                                    | 24                         | 1               | f-m Sd, s. Sit (5 YR 4/4)               |                                                                               | Wet; MGI           |
| -33-                                                     | SP-SM    |                      | 10<br>15                             | 1                          |                 | 1                                       | Poorty Graded SAND with SILT                                                  | MGP Visi           |
| -34.                                                     |          | <u> </u>             | 10<br>10                             | 22                         | 1               | f Sd, I. Sit (5 YR 3/4)                 |                                                                               | Wet: MGI           |
|                                                          |          | $\mathbf{X}$         | 13                                   | 1 -                        |                 |                                         |                                                                               |                    |
| -35- 5                                                   | SW-SM    |                      | 16<br>22                             |                            |                 |                                         | Well Graded SAND with SILT                                                    |                    |

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| ⁼Ki                                                  | llam         |               |                                                    |                            |                      | BORING LOG (continued)                                                                                                          | B-20                   |
|------------------------------------------------------|--------------|---------------|----------------------------------------------------|----------------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------|------------------------|
| DATE COMPLI<br>DRILLER:<br>NSPECTOR:<br>DRILLING MET |              |               | June 11, 1<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling Inc<br>B. Secking |                      | PROJECT: PSE&G: Former Front Street<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE: NUMBER: N/A | Gas Works              |
| DEPTH<br>(FT)                                        | SON<br>CLASS | SAMPLES       | BLOW<br>COLNTS                                     | RECOVERY                   | FIELD                | VISUAL                                                                                                                          | COMMENTS               |
| -36-                                                 |              | <u></u>       | 13                                                 | (N)<br>24                  | SCREENING (ppm)<br>2 | f. Sd, s. Sit, t. Cl (5 YR 3/4)                                                                                                 |                        |
| -37-                                                 | SW-SM        | $\backslash$  | 25<br>28<br>33                                     |                            |                      | Well Graded SAND with SILT                                                                                                      | Wet, MGP Odd           |
| -38-                                                 |              | <u> </u>      | N/A                                                | 18                         | N/A                  | Shelby Tube; Sit in the nose of the tube                                                                                        | -                      |
| -39-                                                 |              | $\backslash$  |                                                    |                            |                      |                                                                                                                                 |                        |
| -40-                                                 | t.           | <u>`</u>      | 13                                                 | 22                         | 4                    | Sit, t. CI (5 YR 4/4)                                                                                                           | Wet                    |
| -41-                                                 | ML           |               | 11<br>11<br>14                                     |                            |                      | SILT                                                                                                                            |                        |
| -42-                                                 | 7            | ,             | 13                                                 | 24                         | 1                    | -<br>Sit, L Ci (5 YR 4/4)                                                                                                       | B-20 (41.5-42')<br>Wet |
| -43-                                                 |              |               | 13<br>15<br>7                                      |                            |                      |                                                                                                                                 |                        |
| -44                                                  |              |               | 25                                                 | 20                         | C                    | Sit, L Grv; Glacial Till (5 YR 4/4)                                                                                             | Wet                    |
| -45-                                                 |              |               | 38<br>38<br>50/2                                   |                            |                      |                                                                                                                                 |                        |
| -46-                                                 | k            |               | 42                                                 | 20                         | 0                    | Sit, s. Grv, s. c Sd; Glacial Till (5 YR 4/4)                                                                                   | Wet                    |
| -47-                                                 |              |               | 50/2                                               |                            |                      |                                                                                                                                 |                        |
| -48-                                                 |              |               | 16                                                 | 15                         | 0                    | SIt, s. Grv, s. c Sd; Glacial Till (5 YR 4/4)                                                                                   | Wet                    |
| -49-                                                 |              |               | 23<br>50/5                                         |                            |                      | GLACIAL TILL                                                                                                                    |                        |
| -50-                                                 | 1            |               | 23                                                 | 15                         | 1                    | Sit, s. c Sd (5 YR 4/4)                                                                                                         | Wet                    |
| -51-                                                 |              |               | 45<br>50/2                                         |                            |                      |                                                                                                                                 |                        |
| -52-                                                 |              |               | 51                                                 | 8                          | 0                    | Sit, I. c Sd, t. Cl                                                                                                             | Wet                    |
| -53-                                                 |              |               | 50/2                                               |                            |                      |                                                                                                                                 |                        |
| -54-                                                 |              |               | 42                                                 | 15                         | 1                    | Weathered Bedrock a. Slt. f. Sd matrix                                                                                          | 1                      |
| -55-                                                 |              | $\rightarrow$ | 100/5<br>50/0                                      | N/R                        | N/A                  | Bedrock at 55'                                                                                                                  | B-20 (54.5-55')        |
| -56-                                                 |              |               |                                                    |                            | 17/4                 | Bedrock at 55<br>Bedrock - SILTSTONE                                                                                            |                        |
| -30-                                                 |              | $\sim$        |                                                    |                            |                      |                                                                                                                                 |                        |
| -57-                                                 | Ĩ            | T             |                                                    |                            |                      |                                                                                                                                 |                        |
| -58-                                                 |              |               |                                                    |                            |                      | End of Boring at 56 Feet                                                                                                        |                        |
| -59-                                                 |              |               |                                                    |                            |                      |                                                                                                                                 |                        |
| -60-                                                 |              |               |                                                    |                            |                      |                                                                                                                                 |                        |

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| DATE COMPL<br>DRILLER:<br>NSPECTOR:<br>DRILLING ME |       |                         | June 18, 1<br>Advanced<br>Jonathan<br><u>Hollow Ste</u> | Drilling Ind<br>B. Secking |                 | PROJECT: PSE&G: Former From<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATITUDEA,ONGITUDE:<br>ELEVATION: | t Street Gas Works   |
| DEPTH                                              | SON   | SAMFLES                 | BLOW                                                    | RECOVERY                   | FIELD           | VISUAL                                                                                                                                                      | COMMENTS             |
| (편)<br>-0-                                         | CLASS |                         | COUNTS                                                  | 1101                       | SCREENING (pom) | DESCRIPTION                                                                                                                                                 |                      |
| -1-                                                |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -2-                                                |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -3-                                                |       |                         |                                                         |                            |                 | Crushed Stone (Backfil) from 0-7                                                                                                                            |                      |
|                                                    |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -4                                                 |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -5-                                                |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -6-                                                |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -7-                                                |       | $\overline{\mathbf{N}}$ | 4                                                       | 20                         | 2.1             | m-c Sd, s. Grv, t Sit (5 YR 4/4)                                                                                                                            | Dry                  |
| -8-                                                |       |                         | 6                                                       |                            |                 |                                                                                                                                                             |                      |
| .e.                                                |       |                         | 5                                                       | 8                          | 2.1             | m-c Sd, s. Grv, Cobbles (5 YR 4/4)                                                                                                                          | 8-21 (8.5-9')<br>Dry |
| -10-                                               |       |                         | 7                                                       |                            |                 |                                                                                                                                                             |                      |
| -11-                                               |       |                         | 7                                                       | 15                         | 2.1             | m-c Sd, s. Grv, Cabbles, t. Sit (5 YR 4/4)                                                                                                                  | Dry                  |
| -12-                                               |       |                         | 10<br>8                                                 |                            |                 |                                                                                                                                                             |                      |
| -13-                                               |       |                         | 16<br>27                                                | 10                         | 2.1             | m-c Sd, s. Grv, s. grysh Cobbles (5 YR 4/4)                                                                                                                 | 8-21 (12.5-1         |
|                                                    |       |                         | 30                                                      | 10                         | 2.1             | 11-C 30, S. SIV, S. GIVSH CODDIES (3 17 4/4)                                                                                                                | Dry                  |
| -14-                                               |       |                         | 33<br>29                                                |                            |                 |                                                                                                                                                             |                      |
| -15-                                               |       |                         | 48                                                      | 8                          | 2.1             | m-c Sd, s. Grv, s. Cobbies (5 YR 4/4)                                                                                                                       | Dry                  |
| -16-                                               |       |                         |                                                         |                            |                 |                                                                                                                                                             |                      |
| -17-                                               |       |                         | 36<br>38                                                | 10                         | 2.1             | m-c Sd, s. Grv, large Cobbles (5 YR 4/4)                                                                                                                    | Dry                  |
| -18-                                               |       |                         | 45                                                      |                            |                 | FILL                                                                                                                                                        |                      |
| •19-                                               |       |                         | <u>55</u><br>27                                         | 10                         | 2.1             | m-c Sd, s. Grv, large Cobbles (S YR 4/4)                                                                                                                    | Dry                  |
| -20-                                               |       |                         | 39<br>17                                                |                            |                 |                                                                                                                                                             |                      |
| -21-                                               |       |                         | 18<br>29                                                | 12                         | 2.1             | m-c Sd, s. Grv, large Cobbles (5 YR 4/4)                                                                                                                    | Dry                  |
| -22-                                               |       |                         | 41<br>14                                                |                            |                 |                                                                                                                                                             |                      |
|                                                    |       |                         | 14                                                      |                            |                 |                                                                                                                                                             |                      |
| -23-                                               |       |                         | 31<br>18                                                | 10                         | 2.1             | m-c Sd, s. Grv, Cobbles (5 YR 4/4)                                                                                                                          | Dry                  |
| -24-                                               |       |                         | 27<br>21                                                |                            |                 |                                                                                                                                                             |                      |
| -25-                                               |       |                         | <u>42</u><br>10                                         | 19                         | 16<br>133       | 13" 1 Sd a. Slt (5 YR 4/4)<br>6" 1 Sd a. Slt (5 YR 3/4)                                                                                                     | Moist                |
| •26-                                               |       |                         | 8<br>10                                                 |                            |                 |                                                                                                                                                             | B-21 (26.5-2)        |
| •27-                                               |       |                         | . 12                                                    | 24                         | 22              | 6" f Sd a. Sit (5 YR 3/4)                                                                                                                                   | Wet                  |
| -28-                                               |       |                         | 18<br>22                                                |                            | 153<br>140      | 6" f Sd s. Slt (5 YR 3/4)<br>12" f Sd s. Slt (5 YR 3/4)                                                                                                     | Product Visib        |
| -29-                                               |       |                         | 29<br>7                                                 | 18                         | 857             | 1 Sd s. Slt (5 YR 3/4)                                                                                                                                      | Product Visib        |
| -30-                                               | SW-SM |                         | 9<br>13                                                 |                            |                 | Weil Graded SAND with SILT                                                                                                                                  |                      |
| -31-                                               |       |                         | <u>14</u><br>5                                          | 22                         | 33              | f Sd s Sk (S YR 3/4)                                                                                                                                        | 8-21 (30-30.5        |
| -32-                                               |       | $  \rangle  $           | 5                                                       | -                          | ÷               |                                                                                                                                                             |                      |
|                                                    |       | $\left  \right\rangle$  | 7 7                                                     |                            |                 |                                                                                                                                                             |                      |
| -33-                                               |       |                         | 4                                                       | 12                         | 605             | f Sd s. Sit (5 YR 3/2)                                                                                                                                      |                      |
| -34-                                               |       |                         | 4 8                                                     |                            |                 |                                                                                                                                                             |                      |
| -35-                                               | ML    | $\square$               | 8                                                       | 11                         | 758<br>18       | 3*15d s Stt (5 YR 3/2)<br>8* Sit (5 YR 4/4) SILT                                                                                                            |                      |

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|-----------------------------------------------------|--------|------------------------|----------------------------------------------------|----------------------------|-----------------|----------------------------------------|-----|----------|--|
| DATE COMPL<br>DRILLER:<br>INSPECTOR:<br>DRILLING ME | LETED: |                        | June 18, 1<br>Advanced<br>Jonathan E<br>Hollow Ste | Drilling Ind<br>3. Secking |                 | LOCATION: Nev<br>KILLAM PROJECT NUMBE: |     |          |  |
| DEPTH                                               | \$0L   | SAMPLES                | BLOW                                               | RECOVERY                   |                 | VISUAL                                 |     | COMMENTS |  |
| -36-                                                | CLASS. | <u>k</u>               | COLNTS                                             | (IN)                       | SCREENING (ppm) | DESCRIPTION                            |     |          |  |
| -37-                                                |        | $\left  \right\rangle$ | <u>5</u><br>8                                      |                            |                 |                                        |     |          |  |
| -3/-                                                | ML     | $\backslash$           | 10                                                 | 16                         | 4.1             | Sit (5 YR 4/4)                         |     |          |  |
| -38-                                                |        |                        | 13                                                 |                            |                 | SILT                                   |     |          |  |
| -39-                                                |        |                        |                                                    |                            |                 |                                        |     |          |  |
| -40-                                                |        |                        |                                                    |                            |                 | End of Boring at 39 Feet               |     |          |  |
| -41-                                                |        |                        |                                                    |                            |                 |                                        |     |          |  |
| -42-                                                |        |                        |                                                    |                            |                 |                                        |     |          |  |
| -43-                                                |        |                        |                                                    |                            |                 |                                        |     |          |  |
| -44-                                                |        |                        |                                                    |                            |                 |                                        |     |          |  |

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| <sup>⊯</sup> Ki                                     | llan  | n                      |                 |                            |               | BORING LOG                                 |                                                                                                                                                                   | LOG:      | B-23                 |
|-----------------------------------------------------|-------|------------------------|-----------------|----------------------------|---------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------|
| DATE COMPL<br>DRILLER:<br>NSPECTOR:<br>DRILLING MET | ETED: | I                      |                 | Drilling Ind<br>B. Secking |               | ······                                     | PROJECT:     PSE&G: Former Front Street Gas Works       LOCATION:     Newark, New Jersey       KILLAM PROJECT NUMBER:     263709       STATE CASE NUMBER:     N/A |           |                      |
|                                                     |       |                        |                 |                            |               |                                            | LATTUDE/LONGITUDE:<br>SURVEYED ELEVATION (R MSL):                                                                                                                 | 38.9 (Gro | und)                 |
| DEPTH                                               | 504.  | SAMPLES                | a.ow            | RECOVERY                   | rielo         |                                            | VISLAL                                                                                                                                                            |           | COMMENTS             |
| -0                                                  | CLASS | <u> </u>               | 2               | (m)<br>2                   | SCREEMING (pp | Asphalt, Topsoil (5 YR 2/2)                | DESCRIPTION                                                                                                                                                       |           | Moist                |
|                                                     |       |                        | 3               |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -1-                                                 |       |                        | <u>4</u><br>5   |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -2-                                                 |       |                        | 4               | 10                         | 0             | m-c Sd, s. Grv, t. Slt (5 YR 3/4)          |                                                                                                                                                                   |           | Moist                |
| -3-                                                 |       |                        | 5               | -                          |               |                                            |                                                                                                                                                                   |           |                      |
| ~                                                   |       |                        | 5               |                            |               |                                            |                                                                                                                                                                   |           | B-23 (3.5-4')        |
| -4-                                                 |       |                        | 4               | 10                         | a             | m-c Sd, s. Grv, s. Asphalt (5 YR 3/4)      |                                                                                                                                                                   |           | Moist                |
| -5-                                                 |       |                        | 6               | ]                          |               |                                            |                                                                                                                                                                   |           |                      |
|                                                     |       |                        | 5               |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -6-                                                 |       | $\left  \right\rangle$ | 8               | 8                          | ٥             | m-c Sd, s. Grv, t. Asphalt (S YR 4/4)      |                                                                                                                                                                   |           | Moist                |
| -7-                                                 |       |                        | 6               | ]                          |               |                                            |                                                                                                                                                                   |           |                      |
| -8-                                                 |       | $ \rightarrow $        | 9               | 6                          | 0             |                                            |                                                                                                                                                                   |           | Moist                |
|                                                     |       |                        | 5               |                            | •             |                                            |                                                                                                                                                                   |           | IN OLS C             |
| -9-                                                 |       | $  \setminus$          | 7               |                            |               |                                            | FILL                                                                                                                                                              |           |                      |
| -10-                                                |       | $\square$              | 5               | 12                         | 0             | m-c Sd, s. Grv, s. Shale, t Sit (5 YR 4/4) |                                                                                                                                                                   |           | Moist                |
| -11-                                                |       |                        | 6<br>16         |                            |               |                                            |                                                                                                                                                                   |           |                      |
|                                                     |       |                        | 17              |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -12-                                                |       |                        | <u>14</u><br>10 | 10                         | ٥             | m-c Sd, s. Grv, s. Shale (5 YR 4/4)        |                                                                                                                                                                   |           | Moist                |
| -13-                                                |       |                        | 8               |                            |               |                                            |                                                                                                                                                                   |           | 1                    |
| -14-                                                |       | <u> </u>               | <u>8</u><br>6   | 12                         | 0             |                                            |                                                                                                                                                                   |           |                      |
| - 14-                                               |       |                        | 6               | 1 14                       | U             | m-c Sd, s. Grv, t. Shale (5 YR 4/4)        |                                                                                                                                                                   |           | Moist                |
| -15-                                                |       |                        | 8               |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -16-                                                |       |                        | 10              | 8                          | ٥             |                                            |                                                                                                                                                                   |           | Dry                  |
|                                                     |       |                        | 10              |                            |               |                                            |                                                                                                                                                                   |           | _                    |
| -17-                                                |       |                        | 13              |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -18-                                                |       |                        | 11              | 10                         | O             | m-c Sd, s. Grv (5 YR 4/4)                  |                                                                                                                                                                   |           | Dry                  |
| -19-                                                |       |                        | 13              |                            |               |                                            |                                                                                                                                                                   |           |                      |
| Ļ                                                   |       |                        | 12              | I                          | . <u> </u>    |                                            |                                                                                                                                                                   |           |                      |
| -20-                                                |       |                        | 7               | 20                         | 0             | f-m Sd. s. Sit (5 YR 4/4)                  |                                                                                                                                                                   |           | Maist                |
| -21-                                                |       |                        | 8               |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -22-                                                |       | $ \rightarrow $        | <u>12</u><br>14 | 22                         | D             |                                            |                                                                                                                                                                   |           |                      |
|                                                     |       |                        | 16              |                            | U             |                                            |                                                                                                                                                                   |           | Moist                |
| -23-                                                |       |                        | 22<br>13        |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -24-                                                |       |                        | 8               | 20                         | 34.4          |                                            |                                                                                                                                                                   |           | Moist                |
| -25-                                                |       |                        | 9<br>16         |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -2.5                                                |       |                        | 13              |                            |               |                                            |                                                                                                                                                                   |           | B-23 (25.5-26        |
| -26-                                                |       |                        | 12              | 22                         | 22.7          | f-m Sd, s. Sit (5 YR 4/4)                  |                                                                                                                                                                   |           | Moist                |
| -27-                                                | SP-SM |                        | 13<br>17        |                            |               | Poortv Grad                                | led SAND with SILT                                                                                                                                                |           |                      |
|                                                     |       | $\vdash \downarrow$    | 16              | <u> </u>                   |               | _                                          |                                                                                                                                                                   |           | B-23 (27.5-26        |
| -28-                                                |       |                        | 13<br>13        | 22                         | 2.2           | f-m Sd, s. Sit (5 YR 4/4)                  |                                                                                                                                                                   |           | Wet                  |
| -29-                                                |       |                        | 17              |                            |               |                                            |                                                                                                                                                                   |           |                      |
| -30-                                                |       |                        | 18<br>3         | 22                         | 10.7          | f-m Sd, s. Sit (5 YR 4/4)                  |                                                                                                                                                                   |           | Wet                  |
| 1                                                   |       |                        | 6               |                            |               |                                            |                                                                                                                                                                   |           | Product Visibi       |
| -31-                                                |       |                        | 9<br>13         |                            |               |                                            |                                                                                                                                                                   |           | Sheen: Odor          |
| -32-                                                | i     |                        | 22              | 24                         | 10.2          | I-m Sd, s. Sit (5 YR 4/4)                  |                                                                                                                                                                   |           | B-23 (31.5-32<br>Wet |
| -33-                                                |       |                        | 24<br>31        | 1                          |               |                                            |                                                                                                                                                                   |           | No Product           |
|                                                     |       |                        | 31              |                            |               |                                            |                                                                                                                                                                   |           | Sheen; Odor          |
| -34-                                                | ML    |                        | 15              | 20                         | 0             | Silt (5 YR 4/4)                            | C# 7                                                                                                                                                              |           | Wet                  |
|                                                     | m L   |                        | 39              |                            |               | 1                                          | SILT                                                                                                                                                              |           | ł                    |

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|-------------------------------------------------|--------------|-------------------------|----------------------------------------------------|----------------------------|--------------------------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------|----|
| ATE COMPI<br>RILLER:<br>ISPECTOR:<br>RILLING ME |              |                         | June 16, 1<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling Ind<br>B. Secking |                          |                                                         | OJECT: PSE&G: Forme<br>CATION: Newark, New J<br>LAM PROJECT NUMBER: 26370<br>ATE CASE NUMBER: N/A | •                    | (  |
| DEPTH<br>(FT)                                   | SOL<br>CLASS | SAMPLES                 | BLOW<br>COUNTS                                     | RECOVERY                   | FIELD<br>SCREENING (pom) | VISU                                                    |                                                                                                   | COMMENT              | s  |
| -36-                                            |              | $\overline{\mathbf{N}}$ | 53<br>50/3                                         | 12                         | 1,1                      | I Sit, L Giv (5 YR 4/4)                                 |                                                                                                   | Wet                  |    |
| -37-<br>-38-                                    |              |                         | 29                                                 | 10                         | 0                        | Sit, t. Ci (5 YR 4/4)                                   |                                                                                                   | 147-5                |    |
| -39-                                            | ML           | $\left  \right\rangle$  | 35<br>50/4                                         |                            |                          | SIL                                                     | τ                                                                                                 | Wet                  |    |
| -40-                                            |              |                         | 27                                                 | 15                         | 0                        | Sh (5 YR 4/4)                                           |                                                                                                   | Wet                  |    |
| -41-                                            |              |                         | 50/5                                               |                            |                          |                                                         |                                                                                                   |                      |    |
| -42-                                            |              |                         | 37<br>40                                           | 15                         | 0                        | f-m-c Sd, s. Sit, s. Grv; Glacial Till (S YR 4/4)       | · · · · · · · · · · · · · · · · · · ·                                                             | Wet                  |    |
| -43-                                            |              | $\vdash$                | 50/3<br>100/0                                      | 0                          | 0                        | Boulder                                                 |                                                                                                   |                      |    |
| -45-                                            |              |                         |                                                    |                            |                          |                                                         |                                                                                                   |                      |    |
| -46-                                            |              |                         | 16<br>23                                           | 20                         | 0                        | GLACIAL<br>Sit, s. Grv, Glacial Till (5 YR 4/4)         | L TILL                                                                                            | Wet                  |    |
| -47-                                            |              |                         | 33<br>37                                           |                            |                          |                                                         |                                                                                                   |                      |    |
| -48-                                            |              |                         | 100/6                                              | 24                         | 0.1                      | m-c Sd, s. Slt Glacial Till (5 YR 4/4)                  |                                                                                                   | Wet                  |    |
| -49-                                            | •            |                         | 39                                                 | 8                          | 0                        | Sit, s. m-c Sd, s. Weathered Bedrock; Glacial Till (5 Y | VD 4/4)                                                                                           |                      |    |
| -51-                                            |              |                         | 100/5                                              | Ű                          | ·                        |                                                         | ((, ,,,,,))                                                                                       | Wet                  |    |
| -52-                                            |              |                         | 100/6                                              | 2                          | D                        | Sit, s. Grv, cobbles, s. Weathered Bedrock (5 YR 4/4)   | 1                                                                                                 | Wet                  |    |
| -53-                                            |              |                         |                                                    |                            |                          | Weathered L                                             | Bedrock                                                                                           |                      |    |
| -54-                                            |              |                         | 26<br>38                                           | 10                         | 0                        | Sit, cobbles, s. Weathered Bedrock (5 YR 4/4)           |                                                                                                   | Wet                  |    |
| -55-                                            |              |                         | <u>50/2</u><br>31                                  | 12                         |                          |                                                         |                                                                                                   |                      |    |
| -56-                                            |              |                         | 50/5                                               | 12                         | O                        | SIt, Weathered Bedrock (5 YR 4/4)                       |                                                                                                   | Wet<br>B-23 (56.5-5) | 7) |
| -58-                                            |              | $ \rightarrow $         | 100/1                                              | N/R                        | N/A                      | Bedrock at 58 Feet; Refusal                             |                                                                                                   |                      |    |
| -59-                                            |              |                         |                                                    |                            |                          | Bedrock - SiL                                           | TSTONE                                                                                            |                      |    |
| -60-                                            |              |                         |                                                    |                            |                          | End of Boring                                           |                                                                                                   |                      | —  |

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| ■K                                               | illan | n                       |                                                   |                             |                 | BORING LOG                                                                                                                                  | _OG:      | B-24            |
|--------------------------------------------------|-------|-------------------------|---------------------------------------------------|-----------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------|
| DATE COMI<br>DRILLER:<br>INSPECTOR<br>DRILLING M | २:    |                         | August 5,<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling inc<br>3. Sectiong | -               | PROJECT; PSE&G: Former Fro<br>LOCATION: Newark, New Jerse<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATITUDEA ONGITUDE. | y         |                 |
| DEPTH                                            | 501,  | SAMPLES                 | BLOW                                              | RECOVERY                    | felo            | SURVEYED ELEVATION (11 MSL) 3                                                                                                               | 8 8 (Grou | nd)<br>connents |
| (¢T)                                             | CLASS |                         | COUNTS                                            | (PN)                        | SCREEHENG (pom) |                                                                                                                                             |           | coments         |
| -0-                                              |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -1-                                              |       | i                       |                                                   | 1                           | Ì               |                                                                                                                                             |           |                 |
| -2-                                              | -     |                         |                                                   | 1                           |                 |                                                                                                                                             |           |                 |
|                                                  |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -2-                                              |       |                         |                                                   | 1                           |                 |                                                                                                                                             |           |                 |
| -                                                |       |                         |                                                   | }                           |                 |                                                                                                                                             |           |                 |
| -5-                                              |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -\$-                                             |       |                         | ļ                                                 |                             |                 |                                                                                                                                             |           |                 |
|                                                  |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -7-                                              |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -\$-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           | -               |
| -9-                                              |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -10-                                             |       | <u></u>                 | 12                                                | 7                           | 0               |                                                                                                                                             |           |                 |
| -10-                                             |       | $\backslash$            | 6                                                 | · /                         | U               | f-m Sd, t. Grv, cobbles in nose (5 YR 6/4)                                                                                                  |           |                 |
| -11-                                             |       |                         | <b>B</b><br>11                                    |                             |                 | FLL                                                                                                                                         |           |                 |
| -12-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -13-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
|                                                  |       | 7                       |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -14-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -15-                                             |       | $\wedge$                | 15<br>15                                          | 14                          | 0               | f-m-c Sd a. Grv, I. Sit (5 YR 4/4)                                                                                                          |           |                 |
| -16-                                             |       |                         | 24                                                |                             |                 |                                                                                                                                             |           |                 |
| -17-                                             | \$P   | `                       | 25                                                |                             |                 | Poorly Graded SAND with GRAVEL                                                                                                              |           |                 |
|                                                  |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -18-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -19-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -20-                                             |       | $\overline{\mathbf{N}}$ | 7                                                 | 18                          | 0               | 11" f Sd, L Sh (5 YR 4/4)                                                                                                                   |           | Dry             |
| -21-                                             |       |                         | 5                                                 |                             |                 | 2" Stil (5 YR 4/4)<br>2" Cl (5 YR 4/4)                                                                                                      |           | Wet<br>Dry      |
|                                                  |       |                         | 6                                                 |                             |                 | 3*f Sd a. Sit (5 YR 4/4)                                                                                                                    |           | Dry             |
| -22-                                             |       |                         | 10<br>9                                           | 18                          | D               | 8" f Sd, t. Sti (5 YR 4/4)<br>3" f Sd a. Sti (5 YR 4/4)                                                                                     |           | Dry<br>Wet      |
| -23-                                             |       | $  \setminus$           | 9                                                 |                             |                 | 7*1 Sd. L Sh (5 YR 4/4)                                                                                                                     |           | Dry             |
| -24-                                             |       |                         | 7                                                 | 1.2                         | 0               | 6" Grv, s. 1-m Sd (5 YR 4/4)                                                                                                                |           |                 |
| -25-                                             |       |                         | 12                                                |                             |                 | 6" f Sd, L Sh (5 YR 6/4)                                                                                                                    |           |                 |
| -26-                                             |       | <u> </u>                | 8                                                 |                             |                 |                                                                                                                                             |           |                 |
|                                                  |       | $\left  \right\rangle$  | <u>12</u><br>9                                    | 12                          | o               | f Sd, t St (5 YR 4/4)                                                                                                                       |           |                 |
| -27.                                             | SW-SM |                         | 9                                                 |                             |                 | Well Graded SAND with SILT                                                                                                                  |           | Wet at 27 Feet  |
| -28-                                             |       | $\overline{\mathbf{N}}$ | 6                                                 | 18                          | 0               | 1 Scia. St (5 YR 4/4)                                                                                                                       |           | Wet             |
| -29-                                             |       |                         | 12<br>16                                          |                             |                 |                                                                                                                                             |           |                 |
|                                                  |       | $ \longrightarrow $     | 22                                                |                             |                 |                                                                                                                                             |           | 8-24 (29.5-30') |
| -30-                                             |       | $\left  \right\rangle$  | 48<br>50/4                                        | 3                           | 0               | 1 Scia, Sti (5 YR 4/4)                                                                                                                      |           | Wet             |
| -31-                                             |       |                         |                                                   |                             |                 | · •                                                                                                                                         |           |                 |
| -32-                                             |       | $\sim$                  | 13                                                | 12                          |                 | 4°1 Scia, Sk (5 YR 4/4)                                                                                                                     |           |                 |
| -33-                                             |       |                         | 11 10 1                                           |                             | 1               | 8° Sh (5 YR 4/4)                                                                                                                            |           |                 |
| -                                                |       | <u> </u>                | 11                                                |                             |                 |                                                                                                                                             |           |                 |
| -34-                                             |       | $\left  \right\rangle$  | <u>16</u><br>20                                   | 19                          | 0               | 1 Sd a Sti (5 YR 4/4)                                                                                                                       | ļ         |                 |
| -35-                                             |       |                         | 28                                                |                             | İ               |                                                                                                                                             |           |                 |
| -36-                                             |       | $ \land $               | 32<br>46                                          | 18                          | 0               | 13*1 Sd a. Sh (5 YR 4/4)                                                                                                                    |           |                 |
| -37-                                             | ML    |                         | 30<br>36                                          |                             |                 |                                                                                                                                             |           |                 |
|                                                  |       |                         | 36<br>50/5                                        |                             |                 | 5" Sit (5 YR 4/4)<br>SiLT                                                                                                                   |           |                 |
| -38-                                             |       |                         |                                                   |                             |                 | End of Boring at 38 Feet                                                                                                                    |           |                 |
| -39-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             |           |                 |
| -40-                                             |       |                         |                                                   |                             |                 |                                                                                                                                             | -         |                 |
|                                                  |       | L                       |                                                   |                             |                 |                                                                                                                                             |           |                 |

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| ■Ki            | llan   | n                |                                       |              |                 | BORING LOG                                          | B-25           |
|----------------|--------|------------------|---------------------------------------|--------------|-----------------|-----------------------------------------------------|----------------|
| DATE COMPL     | LETED: |                  | June 17, 1                            | 998          |                 | PROJECT: PSE&G: Former Front Stre                   | et Gas Works   |
| DRILLER:       |        |                  | Advanced                              | Drilling Inc | oporated        | LOCATION: Newark, New Jersey                        |                |
| INSPECTOR:     |        |                  | Jonathan á                            | B. Secking   | er              | KILLAM PROJECT NUMBER: 263709                       |                |
| DRILLING ME    | ETHOD: |                  | Hollow Ste                            | m Auger      |                 | STATE CASE NUMBER: N/A                              |                |
|                |        |                  |                                       |              |                 | LATITUDE/LONGITUDE:                                 |                |
| DEPTH          | SOL    | SAMPLES          | BLOW                                  | RECOVERY     | FIELD           | SURVEYED ELEVATION (ft MSL): 34 0 (G                | COMMENTS       |
| UCP'IN<br>(FT) | CLASS  | SAMPLES          | COUNTS                                | (N)          | SCREENING (ppm) | DESCRIPTION                                         | COMMENTS       |
| -0-            |        | 1                |                                       |              |                 | 6" Asphan                                           |                |
|                |        |                  |                                       |              |                 | 1' Cement                                           |                |
| -1-            |        | $\leftarrow$     | 32                                    | 5            | 0               | Asphalt, m-c Sd, s. Grv, Brick Fragments (5 YR 2/2) | Dry            |
| -2-            |        |                  | 11                                    | 8            | 0               | Asphalt, m-c Sd, s. Grv, Brick Fragments (5 YR 2/2) | 5,             |
|                |        |                  | 13                                    | 1            |                 |                                                     |                |
| -2-            |        |                  | 13                                    | -            |                 |                                                     |                |
| -              |        | $\leftarrow$     | 11                                    | 2            | 0               | Large Cobbles (5 YR N8)                             | Dry            |
| -              |        |                  | 12                                    |              | -               |                                                     |                |
| -5-            |        |                  | 11                                    |              |                 | FILL                                                |                |
|                |        | <u>k</u>         | 11                                    | +            |                 | Large Cobbles, I-m Sd, s. Grv (5 YR 4/4)            | 0              |
| -6-            |        | $\square$        | 12                                    | 2            | 0               | Large Cooples, I-m Sd, s. Gra (S Trk 4/4)           | Dry            |
| -7-            |        |                  | 12                                    |              |                 |                                                     | 1              |
|                |        |                  | 11                                    |              |                 |                                                     |                |
| -&-            |        |                  | 15                                    | 2            | Û               | Large Cobbies, 1-m-c Sd (5 YR 4/4)                  | Ory            |
| .9-            |        |                  | 12                                    | 1            |                 |                                                     |                |
|                |        |                  | 14                                    | 1            |                 |                                                     |                |
| -10-           |        | $\mathbb{N}^{-}$ | 8                                     | 20           | 0               | f-m-c Sd, s. Cobbles (5 YR 4/4)                     | Dry            |
| -11-           |        |                  | 18                                    | 4            |                 |                                                     |                |
| -10-           |        |                  | 22                                    | 1            |                 |                                                     | B-25 (11.5-12) |
| -12-           |        |                  | · · · · · · · · · · · · · · · · · · · |              |                 |                                                     |                |
|                |        | 1                |                                       |              |                 | End of Boring at 12 Feet                            |                |
| -13-           |        |                  |                                       |              |                 |                                                     |                |
| -14-           |        | 1                |                                       |              |                 |                                                     |                |
|                |        |                  |                                       |              |                 |                                                     |                |
| -15-           |        | <u> </u>         |                                       | L            |                 |                                                     |                |

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|------------------------------------------------------|--------------|-------------------------|-----------------------------------------------------|---------------------------|-------------------------|----------------------------------------------------------------------------------------|----------------------------------|
| DATE COMPLE<br>DRILLER:<br>NSPECTOR:<br>DRILLING MET |              |                         | July 24, 19<br>Advanced<br>Jonathan E<br>Hollow Ste | Drilling In<br>3. Secking |                         | LOCATION: Newark, New Jerse<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A | ont Street Gas Works<br>y        |
|                                                      |              |                         |                                                     |                           |                         |                                                                                        |                                  |
| DEPTH<br>(FT)                                        | SOL<br>CLASS | SAMPLES                 | SLOW<br>COUNTS                                      | RECOVERY<br>(IN)          | FIELD<br>SCREENING (ppr | VISUAL                                                                                 | COMMENTS                         |
| -0-                                                  | LLNDS        | $\overline{\mathbf{N}}$ | 4                                                   | 8                         | O<br>O                  | I-m-c Sd a. Grv, I. Sit, Fill (5 YR 3/2)                                               | B-26 (0-0.5')                    |
| -1-                                                  |              |                         | 3                                                   | 1                         |                         |                                                                                        |                                  |
| -2-                                                  |              | $ \rightarrow $         | 2                                                   | 7                         | 0                       |                                                                                        |                                  |
| -3                                                   |              |                         | 2                                                   |                           |                         |                                                                                        |                                  |
|                                                      |              |                         | 3                                                   |                           |                         |                                                                                        | B-26 (3.5-4')                    |
| +                                                    |              | $\square$               | 7                                                   | 10                        | 2.1                     | 5" Grv, I. 1-m Sd, I. Slt (5 YR 5/6)<br>5" 1-m-c Sd, I. Grv, I. Slt (5 YR 3/2)         | Visible Produc                   |
| -5-                                                  |              |                         | <u>17</u><br>42                                     |                           |                         |                                                                                        |                                  |
| -5-                                                  |              |                         | 13                                                  | 10                        | 120                     | Cl a. Grv, L f Sd (5 YR 3/2)                                                           | Visible Produc                   |
| -7-                                                  |              |                         | 10                                                  |                           |                         |                                                                                        |                                  |
| -8-                                                  |              |                         | 9                                                   | 6                         | 9                       |                                                                                        | 8-26 (7.5-8')<br>Product         |
| -9-                                                  |              |                         | 10<br>8                                             |                           |                         | FILL                                                                                   |                                  |
|                                                      |              |                         | 10                                                  | 10                        |                         |                                                                                        |                                  |
| -10-                                                 |              |                         | 17                                                  | 10                        | 4.2                     | f-m Sd, 1. Grv, I. Sit (5 Y 2/1)                                                       | Product                          |
| -11-                                                 |              |                         | <u>17</u><br>10                                     |                           |                         |                                                                                        |                                  |
| -12-                                                 |              |                         | 12<br>10                                            | 14                        | 2                       | f Sd a. Sit, t. Grv (5 Y 2/1)                                                          | Product                          |
| -13-                                                 |              |                         | 10                                                  | į                         |                         |                                                                                        |                                  |
| -14                                                  |              | $\sim$                  | 17<br>17                                            | 20                        | 1.8                     | 1 Sd a. Sit. s. Grv (5 Y 2/1)                                                          | Product                          |
| -15-                                                 |              |                         | 20<br>13                                            |                           |                         |                                                                                        |                                  |
| -16-                                                 |              |                         | 8                                                   | 15                        | 12.9                    | 10° CI (N1)                                                                            |                                  |
| -17-                                                 |              |                         | 4                                                   |                           | 0.4                     | 6" CI (5 Y 4/1)                                                                        |                                  |
|                                                      |              |                         | 5                                                   |                           |                         |                                                                                        |                                  |
| •18-                                                 |              |                         | 2                                                   | 20                        | 0                       | C1 (5 Y 4/1)                                                                           |                                  |
| -19-                                                 | сн           |                         | 1                                                   |                           |                         | Fat CLAY                                                                               |                                  |
| •20-                                                 |              |                         |                                                     |                           |                         |                                                                                        |                                  |
| -21-                                                 |              | $\overline{}$           | N/A                                                 | 24                        | 0                       | 23° Cl, slightly organic (5 Y4/1)                                                      |                                  |
| -22-                                                 |              |                         |                                                     |                           |                         | 1" f-m Sd (5 Y 2/1)                                                                    |                                  |
| -23-                                                 |              |                         | 3                                                   | 14                        | 0                       | 13- CI (5 Y 4/1)                                                                       |                                  |
| -24-                                                 |              | $\mathbf{X}$            | 2                                                   |                           | 4.3                     | 1" Titl; 1-m-c Sd, I, Grv, Ci matrix (5 Y 2/1)                                         | Odor, Insufficie                 |
|                                                      |              |                         | 6                                                   |                           |                         |                                                                                        | Sample volume<br>B-26 (24.5-25') |
| -25-                                                 |              | $\searrow$              |                                                     | 11                        | 2.1                     | f-m-c Sd, I. Grv (5 Y 2/1)                                                             |                                  |
| -26-                                                 |              |                         | 4                                                   |                           |                         | GLACIAL TILL                                                                           | 5 76 176 6 771                   |
| -27-                                                 |              |                         | 14                                                  | 13                        | 0                       | f-m-c Sd, I. Grv, Cl matrix (5 YR 4/4)                                                 | 8-26 (26.5-27')                  |
| -28-                                                 |              |                         | 12<br>32                                            |                           |                         |                                                                                        |                                  |
| .29.                                                 |              |                         | 37<br>50                                            | 14                        | 0                       | Weathered Siltstone, CI matrix (5 YR 4/4)                                              |                                  |
| -30-                                                 |              |                         | 51<br>54                                            |                           |                         |                                                                                        |                                  |
| -31                                                  |              |                         | 34                                                  |                           |                         |                                                                                        |                                  |
|                                                      | [            | $\mathbf{X}$            | 47                                                  | 6                         | 0                       | Weathered Siltstone, CI matrix (5 YR 4/4)<br>Weathered Bedrock                         |                                  |
| -32-                                                 |              |                         | 47<br>48                                            |                           |                         |                                                                                        |                                  |
| -33-                                                 | ĺ            |                         | 32                                                  | 8                         | 0                       | Weathered Siltstone, CI matrix (5 YR 4/4)                                              |                                  |
| -34                                                  |              |                         | 100/5                                               |                           |                         | Bedrock at 34.5 Feet                                                                   | B-26 (34-34.5')                  |
| -35-                                                 |              | \                       |                                                     | $\rightarrow$             |                         | Bedrock - SILTSTONE                                                                    |                                  |
| -36-                                                 | 1            |                         | İ                                                   |                           |                         | End of Boring at 35 Feet                                                               |                                  |

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| ™Ki            | illan  | n                   |                          |                  | <u>, , , , , , , , , , , , , , , , , , , </u> | BORING LOG                                               | LOG:                | B-27                 |
|----------------|--------|---------------------|--------------------------|------------------|-----------------------------------------------|----------------------------------------------------------|---------------------|----------------------|
| DATE COMP      | LETED. |                     | July 10, 19              |                  |                                               | PROJECT: PSE&G:                                          | Former Front Street | Gas Works            |
| DRILLER:       |        |                     | Advanced                 |                  |                                               |                                                          | New Jersey          |                      |
| DRILLING MI    |        |                     | Jonathan I<br>Hollow Ste | -                | let                                           | XILLAM PROJECT NUMBER:<br>STATE CASE NUMBER: N/A         | 263709              |                      |
|                |        |                     |                          |                  |                                               | LATITUDE/LONGITUDE.                                      |                     |                      |
| <b>D</b> ЕРТН  | SOL    | SANFLES             | BLOW                     | RECOVERY         | FIELD                                         | SURVEYED ELEVATION (N MSL                                | ) 39 5 (Gro         | und)<br>COMMENTS     |
| - <del>0</del> | CLASS  | <u>k</u> —          | COUNTS1                  | <u>(PN)</u><br>7 | SCREENING (ppm)<br>0                          | DESCRIPTION                                              |                     |                      |
| -1-            |        |                     | 2                        |                  | _                                             | f-m Sd, i, Grv, t, Slt; Fill (5 YR 4/4)                  |                     |                      |
| -2-            |        |                     | 6                        |                  |                                               |                                                          |                     |                      |
|                | · ·    |                     | 4                        | 10               | 2.1                                           | t-m Sd, t Grv, t Stt (5 YR 4/4)                          |                     |                      |
| -3-            |        |                     | 4                        |                  |                                               |                                                          |                     |                      |
| -4             |        | $\mathbf{N}$        | 27<br>6                  | 7                | O                                             | Weathered Concrete (N6)                                  |                     |                      |
| -5-            |        |                     | 18                       |                  |                                               |                                                          |                     |                      |
| -5             |        |                     | 9<br>8                   | 10               | 2.1                                           | 1 Sd, I. Sit, I. Grv (10 YR 4/2)                         |                     |                      |
| -7-            |        |                     | 5                        |                  |                                               |                                                          |                     |                      |
| *              |        |                     | 5<br>2                   | 16               | 2.1                                           | 1 Sd, I. Sit, I. Grv (10 YR 4/2)                         |                     | Moist at 7.5'<br>Wet |
| -e.            |        |                     | 1                        |                  |                                               |                                                          |                     |                      |
| -10-           |        |                     | 1                        | 9                | 2.1                                           | 1 Sd a. Grv (5 Y 4/1)                                    |                     |                      |
| -11-           |        |                     | 27<br>13                 |                  |                                               | FILL                                                     |                     |                      |
| -12-           |        |                     | 4                        | 24               | 0                                             | f-m Sd, t. Grv; very loose material (5 YR 3/4)           |                     |                      |
| -13-           |        |                     | 1                        |                  | Ū                                             | en ou, i, ou, eny loose materiar (o TR 5/4)              |                     |                      |
|                |        |                     | 0.                       |                  |                                               |                                                          |                     |                      |
| -14-           |        |                     | 1                        | 18               | 0                                             | f-m Sd, L Grv, L Sit; very loose material (5 YR 3/4)     |                     |                      |
| -15-           |        |                     | 0                        |                  |                                               |                                                          |                     |                      |
| -16-           |        | $ \longrightarrow $ | 0<br>1                   | 10               | 0                                             | f-m Sd, t. Grv, t. Slt, t. concrete fragments (5 YR 3/4) |                     |                      |
| -17-           |        |                     | 2                        |                  |                                               |                                                          |                     |                      |
| -18-           |        | $ \longrightarrow $ | 3                        | 12               | 0                                             | 11* I-m Sd, I. Sit (5 YR 3/4)                            |                     |                      |
| -19-           |        |                     | <u>6</u><br>2            |                  | 2.1                                           | 1" f-m Sd, I. Sit (N1)                                   |                     | Oily Product         |
| •20-           |        |                     | 50/1                     |                  |                                               |                                                          |                     |                      |
| -21-           |        |                     |                          |                  |                                               | End of Boring at 20 Feet                                 |                     |                      |
| ·22·           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -23-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -24-           |        |                     | I                        |                  |                                               |                                                          |                     |                      |
| -25-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
|                | 1      |                     |                          | ľ                |                                               |                                                          |                     |                      |
| -26-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -27-           | 1      |                     |                          |                  |                                               |                                                          |                     |                      |
| -26-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -29-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -30-           |        |                     | ]                        |                  |                                               |                                                          |                     |                      |
| -31-           |        | ŀ                   |                          |                  |                                               |                                                          |                     |                      |
| -32-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -33-           |        |                     |                          |                  | -                                             |                                                          | •                   |                      |
| -34            | P      |                     |                          |                  |                                               |                                                          |                     |                      |
| -35-           |        |                     |                          |                  |                                               |                                                          |                     |                      |
| -36-           | 1      |                     |                          |                  |                                               |                                                          |                     |                      |
| -30-           |        |                     | _                        |                  |                                               |                                                          |                     |                      |

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| ■K            | illan        | n                      |             |             |                          | BORING LOG                                                   | LOG:        | B-28           |
|---------------|--------------|------------------------|-------------|-------------|--------------------------|--------------------------------------------------------------|-------------|----------------|
| DATE COMP     | PLETED:      |                        | July 15, 19 | 98          |                          | PROJECT: PSE&G: Former F                                     | ront Street | Gas Works      |
| DRILLER:      |              |                        | Advanced    | Dritting In | coporated                | LOCATION: Newark, New Jers                                   | ey          |                |
| INSPECTOR     | t:           |                        | Jonathan    |             | ger                      | KILLAM PROJECT NUMBER: 263709                                |             |                |
| DRILLING M    | ETHOD        |                        | Hollow Ste  | m Auger     | <u> </u>                 | STATE CASE NUMBER: N/A                                       |             | <u> </u>       |
|               |              |                        |             |             |                          | SURVEYED ELEVATION (ft MSL):                                 | 37.8 (Grou  |                |
| DEPTH<br>(FT) | SOL<br>CLASS | SAMFLES                | BLOW        | RECOVERN    | FIELD<br>SCREENING (ppm) | VELML<br>DESCRIPTION                                         |             | COMMENTS       |
| -0-           | 4,55         | 1                      |             |             |                          | Asphalt, Fill                                                |             |                |
| -1-           |              | k                      | 9           | 18          | 0                        | 1-m Sd, s. Sit (5 YR 5/6)                                    |             | 1              |
|               |              |                        | 9           | ]           |                          |                                                              |             |                |
| -2-           |              |                        | 10<br>      |             |                          | · ·                                                          |             |                |
| -3-           |              | $\wedge$               | 7           | 14          | 0                        | f-m-c \$d s. Sit (5 YR 4/4)                                  |             |                |
| +             |              | $  \setminus$          | 5           | 1           |                          |                                                              |             |                |
| .5            |              | k                      |             | 16          | 0                        | f-m-c Sd, I. Grv, s. Sit, t. coal fragments; Fill (5 YR 4/4) |             |                |
|               |              |                        | 3           | 1           |                          |                                                              |             |                |
| -6-           | -            |                        |             |             |                          |                                                              |             |                |
| -7-           |              |                        |             | N/R         | N/R                      | No Recovery                                                  |             |                |
| -8-           |              |                        | 5           |             |                          |                                                              |             |                |
| .9 <b>.</b>   |              | <u> </u>               | 4           | 11          | 0                        | t-m-c Sd, t. Grv, I. Sit (10 YR 4/2)                         |             |                |
|               |              |                        | 1           |             |                          |                                                              |             |                |
| -10-          | {            |                        | 1           | 1           |                          | FILL                                                         |             | Wet at 10 Feet |
| -11-          |              | $\backslash$           | 1           | 10          | 0                        | f-m Sd, L Sit (5 YR 4/4)                                     |             |                |
| •12•          |              |                        | 01          | 1           |                          |                                                              |             |                |
| -13-          | ]            | È                      | 0<br>WOH    | 1 1         | 0                        | f-m Sd, t. Sit (5 YR 4/4)                                    |             |                |
|               |              |                        |             |             |                          |                                                              |             |                |
| -14-          |              |                        |             |             |                          |                                                              |             |                |
| -15-          |              |                        | 2           | 3           | 0                        | 1-m Sd, t Sit (5 YR 4/4)                                     |             |                |
| -16-          |              | $  \setminus$          | 1           |             |                          |                                                              |             |                |
| -17-          |              | <u> </u>               | 1           | 8           | 0                        | 1-m Sd, t. Sk (5 YR 4/4)                                     |             |                |
| -18-          |              |                        | 1           | 9           | 0                        | 1-m-c Sd a, Grv, I, Sit, t Ci (10 YR 4/2)                    |             |                |
|               |              |                        | 1           |             |                          |                                                              |             |                |
| -19-          | 1            | $\left  \right\rangle$ | <u>1</u>    | 10<br>2     | 0                        | f-m Sd, t Sit, t Grv (5 YR 4/4)<br>Coal Ash (N1)             | ļ           | Bottom of      |
| -20-          |              |                        |             |             |                          |                                                              | 1           | Holder at 20'  |
| -21-          |              |                        |             |             |                          |                                                              |             |                |
| -22-          |              |                        |             |             |                          | End of Boring at 21 Feet                                     |             |                |
| -23-          |              |                        |             |             |                          |                                                              |             |                |
|               |              |                        | 1           |             |                          |                                                              |             |                |
| -24           |              |                        |             |             |                          |                                                              | 1           |                |
| -25-          |              |                        |             |             |                          |                                                              |             |                |
| -26-          |              |                        |             |             |                          |                                                              |             |                |
| -27-          |              |                        |             |             |                          |                                                              |             |                |
| -26-          |              |                        |             |             |                          |                                                              |             |                |
| ł             |              |                        |             |             |                          | ·                                                            |             |                |
| -29-          |              |                        |             |             |                          |                                                              |             |                |
| -30-          |              |                        |             |             |                          |                                                              |             |                |
| -31-          |              |                        |             |             |                          |                                                              | l           |                |
| -32-          |              |                        |             |             |                          |                                                              |             |                |
|               |              |                        |             |             |                          |                                                              |             |                |
| -33-          |              |                        |             |             |                          |                                                              |             |                |
| -34-          |              |                        |             |             |                          |                                                              |             |                |
| -35-          |              |                        |             |             |                          |                                                              |             |                |
| -36-          |              |                        |             |             |                          |                                                              |             |                |
| L             |              |                        | 1           |             |                          |                                                              |             |                |

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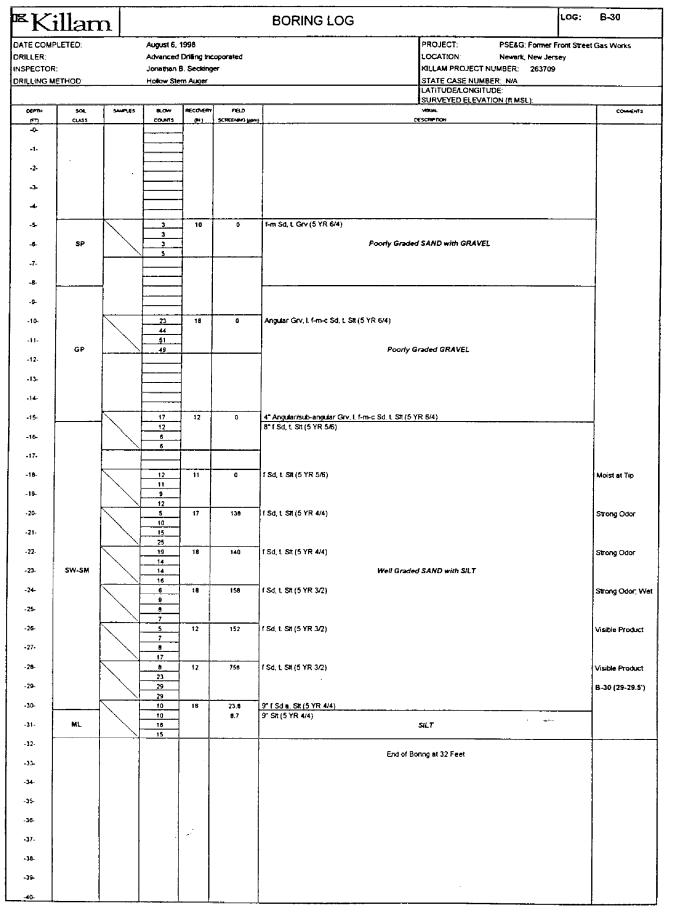
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| ™Ki                                 | llam  | 1               |                                       |             |                 | BORING LOG                                 |                                                                                      | LOG: | B-29      |   |
|-------------------------------------|-------|-----------------|---------------------------------------|-------------|-----------------|--------------------------------------------|--------------------------------------------------------------------------------------|------|-----------|---|
| DATE COMPL<br>DRILLER:<br>NSPECTOR: | ETED: |                 | July 15, 19<br>Advanced<br>Jonathan I | Drilling In |                 |                                            | PROJECT: PSE&G: Former<br>LOCATION: Newark, New Jer<br>KILLAM PROJECT NUMBER: 263709 |      | Gas Works |   |
| DRILLING ME                         | THOD  |                 | Hollow Ste                            | m Auger     |                 |                                            | STATE CASE NUMBER: N/A                                                               |      |           |   |
| DEPTH                               | sou   | SAMPLES         | alow                                  | RECOVER     | FED             | I                                          | SURVEYED ELEVATION (R MSL):                                                          |      | COMMENTS  |   |
| -0-                                 | CLASS |                 | COUNTS                                | (~)         | SCREENING (pom) | Asphait                                    | ESCRIPTION                                                                           |      | Commentis |   |
| Ĺ                                   |       |                 |                                       | 1           |                 |                                            |                                                                                      |      |           |   |
| -1-                                 |       | $\overline{\ }$ | 8                                     | 18          | C               | 1-m Sd, I. Sit, L Grv; Fill (5 YR 5/6)     |                                                                                      |      |           |   |
| -2-                                 |       |                 | <u>6</u><br>9                         |             |                 |                                            |                                                                                      |      |           |   |
| -3-                                 | ſ     |                 | 12                                    | 12          | 0               | f-m Sd a. Sit; Glass fragments (10 YR 4/2) |                                                                                      |      |           |   |
| -                                   |       |                 | 11<br>7                               | ļ           | ł               |                                            |                                                                                      |      |           |   |
| -5-                                 | ľ     | $\overline{}$   | 3                                     | N/R         | N/R             | No Recovery                                |                                                                                      |      |           |   |
| -6-                                 |       |                 | 2                                     |             |                 |                                            |                                                                                      |      |           |   |
| -7-                                 | k     |                 | 2                                     | N/R         | N/R             | No Recovery                                | FILL                                                                                 |      |           |   |
| -8-                                 |       | $\mathbf{i}$    | 4                                     |             |                 |                                            |                                                                                      |      |           |   |
| -9-                                 | ļ     |                 | 2                                     | 9           | 0               | f-m-c Sd, s. Grv, s. Sit (5 YR 4/4)        |                                                                                      |      |           |   |
| -10-                                |       | $\mathbf{X}$    | 5                                     | 2           |                 | Concrete (N7)                              |                                                                                      |      |           |   |
|                                     | Ā     |                 | 7.                                    |             |                 |                                            |                                                                                      |      |           |   |
| -11-                                |       | $\mathbf{X}$    | 4                                     | N/R         | N/R             | No Recovery                                |                                                                                      |      |           |   |
| -12-                                |       |                 | 4                                     |             |                 |                                            |                                                                                      |      |           |   |
| -13-                                |       |                 |                                       |             |                 | Refusal at 13 Feet                         |                                                                                      |      |           |   |
| -14-                                |       |                 | :                                     |             |                 | End of B                                   | loring at 13 Feet                                                                    |      |           |   |
| ۰ <b>15</b> -                       |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -16-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           | ł |
| .17.                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -18-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -19-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -20-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
|                                     |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -21-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -22-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -23-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      | ļ         |   |
| -24                                 |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -25-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -26-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -27.                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -28-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -29-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -30-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
|                                     |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| •31•                                |       |                 | 1                                     |             |                 |                                            |                                                                                      |      |           |   |
| -32-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -33-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -34-                                |       | ĺ               |                                       |             |                 |                                            |                                                                                      |      |           |   |
| -35-                                |       |                 |                                       |             |                 |                                            |                                                                                      |      |           |   |
| 1                                   |       |                 |                                       |             |                 |                                            |                                                                                      | 1    | 1         | Ę |

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| ™Ki           | illan  | <b>n</b>     |                 |              |                 | BORING LOG                                               | B-31                   |
|---------------|--------|--------------|-----------------|--------------|-----------------|----------------------------------------------------------|------------------------|
| DATE COMP     | LETED: |              | August 7, 1     | 1998         |                 | PROJECT: PSE&G: Former Front Stree                       | t Gas Works            |
| DRILLER:      |        |              | Advanced        | Drilling Inc | oporated        | LOCATION: Newark, New Jersey                             |                        |
| INSPECTOR     | :      |              | Jonathan 8      | 3. Seclang   | er              | KILLAM PROJECT NUMBER: 263709                            |                        |
| DRILLING M    | ETHOD: | · · · · ·    | Hollow Ster     | m Auger      |                 |                                                          |                        |
|               |        |              |                 |              |                 | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (R MSL)        |                        |
| DEPTH         | SOL    | SHIPLES      | B.OW            | RECOVERY     | FELD            | VISUAL                                                   | COMMENTS               |
| - <del></del> | CLASS  |              | COUNTS          | <u> </u>     | SCREENING (ppm) | CESCRPTION                                               |                        |
| ~             |        |              |                 | 1            |                 |                                                          |                        |
| -1-           |        |              |                 | 4            |                 |                                                          |                        |
| -2-           |        |              |                 | 1            |                 |                                                          | 1                      |
|               | ļ      |              |                 | -            |                 |                                                          |                        |
| -2-           |        |              |                 | 1            |                 |                                                          |                        |
| -             |        |              |                 |              |                 |                                                          |                        |
| .5            | ·····  | k            | 5               | 10           | 0               | f-m-c Sd, I, Grv, I. Stt. Fill (5 YR 6/4)                | -                      |
| -             |        |              | 5               | 1            |                 |                                                          |                        |
| -8-           |        |              | 7               | {            |                 | RLL.                                                     |                        |
| -7-           |        | `            |                 |              |                 |                                                          |                        |
| -8-           |        | 1            |                 |              |                 |                                                          |                        |
| -             |        | 1            |                 |              |                 |                                                          |                        |
| -9-           |        |              |                 |              |                 |                                                          |                        |
| -10-          |        |              | 6               | 16           | 0               | f-m Scia, Grv, L Sti (S YR 4/4)                          |                        |
|               |        |              | 10              |              |                 |                                                          |                        |
| -11-          | SP     |              | 8               |              |                 | Poorly Graded SAND with GRAVEL                           |                        |
| -12-          |        | ·            |                 |              |                 | ·,                                                       |                        |
| -13-          |        |              | ļ               |              |                 |                                                          |                        |
| -13-          |        |              |                 |              |                 |                                                          |                        |
| -14-          |        |              |                 |              |                 |                                                          |                        |
| -15-          |        |              | 12              | 16           | c               | 1-m Scha, Grv, t. Stt (5 YR 4/4)                         |                        |
|               |        |              | 11              | ]            |                 |                                                          |                        |
| -16-          |        |              | 18<br>32        |              |                 |                                                          | 1                      |
| -17-          |        |              |                 |              |                 |                                                          |                        |
| -18.          |        |              |                 |              |                 |                                                          |                        |
|               |        |              |                 |              |                 |                                                          |                        |
| -19-          |        |              |                 |              |                 |                                                          |                        |
| -20-          |        |              | 5               | 18           | 368             | 10" 1-m Sd a, I Sh (5 YR 4/4)                            |                        |
| -21-          |        |              | 5<br>8          |              | 290<br>8.5      | 4" Srt, L.1, Sd (5 GY 2/1)<br>4" f Sd, I, Srt (5 YR 4/4) | Visible Product        |
| -41-          |        |              | 24              |              | 0.0             |                                                          | B-31 (21-21.5')        |
| -22-          |        |              | 10<br>6         | 16           | 10.8            | 1 Sd. L SR (5 YR 4/4)                                    |                        |
| -23-          |        |              | 8               |              |                 |                                                          |                        |
|               |        |              | 8               |              |                 |                                                          |                        |
| -24-          |        | $\mathbf{N}$ | <u>6</u><br>8   | 18           | 2.1             | 1 Sd, t. Stt (5 YR 4/4)                                  |                        |
| -25-          |        |              | 9               |              |                 |                                                          | 1 1                    |
| -26-          |        |              | 9               | 19           | 192             | 1 Sd. 1. Sit (5 YR 4/4)                                  | Strong Odor            |
|               |        | $ $          | 6               | -            |                 | · · · · · · · · · · · · · · · · · · ·                    |                        |
| -27-          |        |              | 11              |              |                 |                                                          |                        |
| - 28-         |        |              | 16              | 20           | 218             | 1 Sd, t. St (5 YR 3/4)                                   | Product; Strong        |
| -29-          | SW-SM  |              | 10              |              |                 | Well Graded SAND with SILT                               | Odor<br>Wet at 29 Feet |
|               |        |              | 12              |              |                 |                                                          | Frei al 29 FEEL        |
| -30-          |        | $\mathbf{X}$ | 7               | 18           | 144             | f Sd, 1, SN (5 YR 4/4)                                   |                        |
| -31-          |        |              | 14              |              |                 |                                                          |                        |
|               |        | <u> </u>     | . 24            | <u>-</u> -   |                 | 104 - ONIE VOLAIN                                        |                        |
| -32.          |        |              | 19              | 17           | 12.9            | f Sd a. Stt (5 YR 4/4)                                   |                        |
| -33-          |        |              | 26              |              |                 |                                                          |                        |
| -34-          |        |              | 29<br>22        | 18           | 2.1             | f 5d a. Sil (5 YR 4/4)                                   |                        |
|               |        |              | 27              |              | •               |                                                          |                        |
| -35-          |        |              | 37              |              |                 |                                                          |                        |
| -36-          |        |              | 32              | 16           | 2.1             | 8°1 Scia Sh (5 YR 4/4)                                   |                        |
| -37-          | ML     |              | <u>50</u><br>52 |              | ٥               | 8" SR (5 YR 4/4)                                         |                        |
| -3/-          | mL,    |              | 52<br>61        |              |                 | SILT                                                     |                        |
| -38-          |        | Ì            |                 | 1            | i               |                                                          | <u> </u>               |
| -39-          |        |              |                 |              |                 | End of Boring at 38 Feet                                 |                        |
|               |        |              |                 |              |                 |                                                          |                        |
| -40-          |        |              |                 |              |                 |                                                          | 1                      |

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| ■Ki             | illan  | 1                 |            |              |                 |                                                             | OG:         | B-32            |
|-----------------|--------|-------------------|------------|--------------|-----------------|-------------------------------------------------------------|-------------|-----------------|
| DATE COMPI      | LETED: | •                 | August 14, | 1998         |                 | PROJECT: PSE&G: Former From                                 | nt Street ( | Gas Works       |
| DRILLER         |        |                   | Advanced   | Drilling In- | coporated       | LOCATION: Newark, New Jersey                                |             |                 |
| INSPECTOR:      |        |                   | Jonathan 8 | 3. Secking   | jer             | KILLAM PROJECT NUMBER: 263709                               |             |                 |
| DRILLING ME     | THOD   |                   | Hollow Ste | m Auger      |                 |                                                             |             | <u> </u>        |
|                 |        |                   |            |              |                 |                                                             | 6 (Grour    | nd)             |
| DEPTH           | sou    | SAMFLES           | BLOW       | RECOVERY     |                 | VISUAL                                                      |             | COMMENTS        |
| <u>اتم</u><br>ح | CLASS  |                   | COLAITS    | (m)          | SCREENING (ppm) | DESCRIPTION                                                 |             |                 |
| Ť               |        |                   |            | 1            |                 |                                                             |             |                 |
| -1.             |        |                   |            |              |                 |                                                             |             |                 |
| -2-             |        |                   |            | 1            |                 |                                                             |             |                 |
| -3-             |        |                   |            | -            |                 |                                                             |             |                 |
|                 |        |                   |            | 1            |                 |                                                             |             |                 |
| -4              |        | -                 |            | 4            |                 |                                                             |             |                 |
| -5-             |        | <u> </u>          | 4          | 10           | 0               | Wood, s. f-m-c Sd a. Grv; Fill (5 YR 4/4)                   |             |                 |
|                 |        |                   | 4          |              |                 |                                                             |             |                 |
| -6-             |        |                   | 5          | 1            |                 |                                                             |             |                 |
| -7-             |        |                   | ļ          |              |                 | FILL                                                        |             |                 |
| -5-             |        |                   |            | 1            |                 |                                                             |             |                 |
|                 |        |                   |            | 1            |                 |                                                             |             |                 |
| -9-             |        |                   | }          | 1            |                 |                                                             |             |                 |
| -10-            |        |                   | 3          | NR           | NR              | Rock in nose of spoon                                       |             | Wet             |
| -11-            |        |                   | 4          | ł .          |                 |                                                             |             |                 |
|                 |        |                   | 5          | <b></b>      |                 |                                                             |             |                 |
| -12-            |        | $\mathbf{i}$      | 5          | 3            | 0               | GN                                                          |             |                 |
| -13-            |        |                   | 6          |              |                 |                                                             |             |                 |
| -14             | SP-SM  |                   | 6          | 16           | 0               | 6" 1-m-c Sd. I. Sit (5 YR 4/4) Poorty Graded SAND with SILT |             |                 |
| ! !             |        | $\mathbf{X}$      | 2          |              | _               | 10" CI (5 G 4/1)                                            |             |                 |
| -15-            | СН     |                   | 1          | 1            |                 | Fat CLAY                                                    |             |                 |
| -16-            |        |                   | 5          | 20           | O               | f-m Sd                                                      |             |                 |
| -17-            | SP     |                   | 4          |              |                 | Poorly Graded SAND                                          |             |                 |
|                 |        | <u> </u>          | 3          |              |                 |                                                             | ľ           |                 |
| -18-            |        |                   | 2          | 12           | O               | 10" 1-m Sd<br>2" Cl (5 G 4/1)                               |             | Slight MGP Odor |
| -19-            | СН     |                   | 3          |              |                 | Fat CLAY                                                    |             | 8-32 (19-19.5') |
| -20-            |        | <u> </u>          | 2          | 12           | 0               | f-m Sd                                                      |             |                 |
|                 |        | $\mathbf{i}$      | 4          |              |                 |                                                             |             |                 |
| -21-            | SP     |                   | 4          |              |                 | Poorly Graded SAND                                          |             |                 |
| -22-            |        |                   | 5          | 16           | Q               | f-m Sd                                                      |             |                 |
| -23-            |        |                   | 5          |              |                 |                                                             |             |                 |
|                 |        | <u> </u>          | 6          |              |                 | Le Che Cres Classifie Till (5 VD //1)                       |             |                 |
| -24-            |        | $\overline{\ }$   | 3          | 6            | o               | I-m Sd a. Grv; Cl matrx; Till (5 YR 4/4)                    |             |                 |
| -25-            |        | $\sim$            | 16         |              |                 |                                                             |             |                 |
| -26-            |        | <u> </u>          | 15<br>11   | 12           | 0               | GLACIAL TILL<br>1-m Scia. Grv; Cimatro; Till (5 YR 4/4)     |             |                 |
|                 |        | $\mathbf{i}$      | 10         |              |                 |                                                             |             |                 |
| -27-            |        | $\langle \rangle$ | 12<br>22   |              |                 |                                                             |             |                 |
| -28-            |        |                   |            |              |                 |                                                             |             |                 |
| -29-            |        |                   |            |              |                 | End of Boring at 28 Feet                                    |             |                 |
| ] [             |        |                   |            |              |                 |                                                             | 1           |                 |
| -30-            |        |                   |            |              |                 |                                                             | 1           |                 |
| -31-            |        |                   |            |              |                 |                                                             |             |                 |
| -32-            |        |                   |            |              |                 |                                                             |             |                 |
|                 |        |                   |            |              |                 |                                                             |             |                 |
| -33-            |        |                   |            |              |                 |                                                             |             |                 |
| -34             |        |                   |            |              |                 |                                                             |             |                 |
| -35-            |        |                   |            |              |                 |                                                             |             |                 |
|                 |        |                   |            |              |                 |                                                             |             |                 |
| -36-            |        |                   |            |              |                 |                                                             |             |                 |

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| ¤≊K                                          | illar        | n                      |                   |         |         | BORING LOG Log: B-33                                                                    |                               |  |  |  |  |
|----------------------------------------------|--------------|------------------------|-------------------|---------|---------|-----------------------------------------------------------------------------------------|-------------------------------|--|--|--|--|
| DATE CON<br>DRILLER:<br>INSPECTO<br>DRILLING | IPLETED:     |                        | Jonathan          |         |         | LOCATION: Newark, New Jerses<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A | ont Street Gas Works<br>y     |  |  |  |  |
|                                              | - <u>r</u>   |                        |                   |         |         | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (R MSL);                                      | 6.9 (Ground)                  |  |  |  |  |
| אזיק <u>א</u> ם<br>ראי                       | SOL<br>CLASS | SAMPL                  | ES BLOW<br>COUNTS | RECOVER | Y FIELD | VISUAL                                                                                  | COMMENTS                      |  |  |  |  |
| -                                            |              |                        |                   | -       |         | Belgian Block                                                                           |                               |  |  |  |  |
| -1-                                          |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -2-                                          |              |                        |                   | -       | 1       | FILL                                                                                    |                               |  |  |  |  |
| -3                                           |              |                        |                   | ]       |         | FILL                                                                                    |                               |  |  |  |  |
|                                              |              |                        |                   | 1       |         |                                                                                         |                               |  |  |  |  |
| -4                                           |              |                        |                   | -       |         |                                                                                         |                               |  |  |  |  |
| -5-                                          |              | $\square$              | <u>19</u><br>14   | 12      | 0       | f-m-c Sd, L Grv, L Sit (5 YR 4/4)                                                       |                               |  |  |  |  |
| -6-                                          |              |                        | 12                | 1       |         |                                                                                         |                               |  |  |  |  |
| -7-                                          |              |                        | 11                |         |         | -                                                                                       |                               |  |  |  |  |
| -8-                                          |              |                        |                   | -       |         |                                                                                         |                               |  |  |  |  |
| -9-                                          |              |                        |                   | ]       |         |                                                                                         |                               |  |  |  |  |
| -10-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
|                                              |              | $\left  \right\rangle$ | 10                | 1       | 0       | 1-m Sd a. Grv, Cobbles in nose of spoon (5 YR 4/4)                                      |                               |  |  |  |  |
| -11-                                         |              |                        | 6                 | {       |         |                                                                                         |                               |  |  |  |  |
| -12-                                         | 1            |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -13-                                         | SP           |                        |                   |         |         | Poorly Graded SAND with GRAVEL                                                          |                               |  |  |  |  |
| -14-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -15-                                         |              |                        | 5                 | 11      | 0       | I-m-c Sd a. Grv, L Sk (5 YR 4/4)                                                        |                               |  |  |  |  |
| -16-                                         |              |                        | 5                 |         | Ū       | (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)                                                 |                               |  |  |  |  |
|                                              |              |                        | 5                 |         |         |                                                                                         |                               |  |  |  |  |
| -17-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -18-                                         | [            | 1                      |                   |         |         |                                                                                         |                               |  |  |  |  |
| -19-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -20-                                         | ł            |                        | 5                 | 12      | 28      | Grv a. f-m-c Sd, t. Sit (5 YR 3/4)                                                      | Odor                          |  |  |  |  |
| -21-                                         |              |                        | <u>13</u><br>9    |         |         |                                                                                         | Cuti                          |  |  |  |  |
| -22-                                         |              |                        | 12                | 16      | 49      | 13' I Sd. L SR (5 YR 6/4)                                                               |                               |  |  |  |  |
| -23-                                         |              |                        | 12                |         | 28      | 3" Sit a. 1 Sd (5 YR 4/4)                                                               |                               |  |  |  |  |
|                                              |              |                        | 11                |         |         |                                                                                         |                               |  |  |  |  |
| -24-                                         |              |                        | 5                 | 14      | 328     | f Sd, t, Sit (5 YR 4/4)                                                                 | Strong Odor;                  |  |  |  |  |
| -25-                                         | SW-SM        |                        | 16                |         |         | Well Graded SAND with SILT                                                              | Drip oit                      |  |  |  |  |
| -26-                                         |              |                        | 13                | 20      | 342     | 1 Sd, L SH (5 YR 4/4)                                                                   | Wet at 26 Feet;               |  |  |  |  |
| -27-                                         |              |                        | 15<br>12          |         | :       |                                                                                         | Visible Product<br>No samples |  |  |  |  |
| -28-                                         |              |                        | 11<br>5           | 18      | 451     | 9" ( Sd, I. Slt (5 YR 4/4)                                                              | collected                     |  |  |  |  |
| -29-                                         | ML           | $\mathbf{i}$           | 10                |         | ,       | 9" Sit (5 YR 4/4)                                                                       |                               |  |  |  |  |
| -30-                                         |              |                        | 12                |         |         | SILT                                                                                    |                               |  |  |  |  |
|                                              | Į            |                        |                   |         |         | End of Bonng at 30 Feet                                                                 | i                             |  |  |  |  |
| ·31·                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -32-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -33-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -34-                                         | Ì            |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
| -35-                                         |              |                        |                   | . ]     |         |                                                                                         |                               |  |  |  |  |
| -36-                                         |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |
|                                              |              |                        |                   |         |         |                                                                                         |                               |  |  |  |  |

R ENGLISSION OGSIELSS

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| <b></b> ■Ki               | llan                                  | 1            |                          |              |                 | BORING LOG                                                   | LOG:       | B-34             |
|---------------------------|---------------------------------------|--------------|--------------------------|--------------|-----------------|--------------------------------------------------------------|------------|------------------|
| DATE COMPL                | · · · · · · · · · · · · · · · · · · · |              | August 15,               |              |                 | PROJECT: PSE&G: Former F                                     |            | Gas Works        |
| DRILLER:                  |                                       |              | Advanced                 |              |                 | LOCATION: Newark, New Jerse<br>KILLAM PROJECT NUMBER: 263709 | ey         |                  |
| INSPECTOR:<br>DRILLING ME |                                       |              | Jonathan E<br>Hollow Ste | -            | er              | STATE CASE NUMBER: N/A                                       |            |                  |
|                           |                                       |              |                          |              |                 | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (R MSL)            | 38 5 (Grou | od)              |
| DEPTH                     | SOL                                   | SAMPLES      | BLOW                     | RECOVERY     |                 | VISUAL                                                       | 00001000   | COMMENTS         |
| 4FT)<br>-0-               | CLASS                                 | ł            | COLNTS                   | <u>. (M)</u> | SCREENING (ppm) | Belgian Block                                                |            |                  |
|                           |                                       |              |                          | 1            |                 |                                                              |            |                  |
| -1-                       |                                       |              |                          | 1            |                 |                                                              |            |                  |
| -2-                       |                                       |              |                          | -            |                 | •                                                            |            |                  |
| -3-                       |                                       |              |                          | ]            |                 |                                                              |            |                  |
| -4                        |                                       |              |                          | 1            |                 | FILL                                                         |            |                  |
| .5.                       |                                       | <u> </u>     | 2                        | 9            | 0               | ]<br>Cl, I. f-m Sd; Fill (10 YR 6/6)                         |            |                  |
| -6-                       |                                       |              | 5                        | ł            |                 |                                                              |            |                  |
|                           | -                                     |              | 5                        | 1            |                 |                                                              |            |                  |
| -7.                       |                                       |              |                          | 1            |                 |                                                              |            |                  |
| -8-                       |                                       |              |                          |              |                 |                                                              |            |                  |
| -9-                       |                                       |              |                          |              |                 |                                                              |            |                  |
| -10-                      |                                       |              | 5                        | 17           | 0               | f-m-c Sd, I. Grv (5 YR 4/4)                                  |            |                  |
| -11-                      |                                       |              | 4                        |              |                 |                                                              |            |                  |
| -12-                      |                                       | `            |                          |              |                 |                                                              |            |                  |
|                           |                                       |              |                          |              |                 |                                                              |            |                  |
| -13-                      | SP                                    |              |                          |              |                 | Poorty Graded SAND with GRAVEL                               | -          |                  |
| -14-                      |                                       |              | <u>-</u>                 |              |                 |                                                              |            |                  |
| -15-                      |                                       |              | 77                       | 12           | 0               | f-m-c Sd (5 YR 4/4)                                          | 1          |                  |
| -16-                      |                                       |              | 8<br>9                   |              |                 |                                                              |            |                  |
| -17-                      |                                       |              | 9                        |              |                 |                                                              |            |                  |
| -18-                      |                                       |              |                          | } .          |                 |                                                              |            |                  |
| -19-                      |                                       |              |                          |              |                 |                                                              |            |                  |
|                           |                                       |              |                          |              |                 |                                                              | ł          |                  |
| -20-                      |                                       |              | 4                        | 16           | 0               | Grv, s. f-m-c Sd, t. Sit (5 YR 4/4)                          | 1          |                  |
| -21-                      | GP                                    |              | 14<br>15                 |              |                 | Poorly Graded GRAVEL                                         | 1          |                  |
| -22-                      |                                       |              |                          |              |                 |                                                              | 1          |                  |
| -23-                      |                                       |              |                          |              |                 |                                                              |            |                  |
| -24-                      |                                       |              |                          |              |                 |                                                              | }          |                  |
| -25-                      |                                       |              | 9                        | 20           | 0               | f Sd, t. Sit (5 YR 4/4)                                      |            |                  |
| -26-                      |                                       | $\mathbf{X}$ | 10                       |              |                 |                                                              |            |                  |
| 1                         | SW-SM                                 |              | 12                       |              |                 | Well Graded SAND with SILT                                   |            | Wet at 26.5 Feet |
| -27-                      |                                       |              |                          |              |                 |                                                              |            |                  |
| -28-                      |                                       |              |                          |              |                 |                                                              |            |                  |
| -29-                      |                                       |              |                          |              |                 | · •                                                          |            |                  |
| -30-                      |                                       |              | 5                        | 14           | 2.1             | 12" f Sd, I. Sli (5 YR 4/4)                                  |            | MGP Odor         |
| -31-                      | ML                                    |              | 6<br>8                   |              | o               | 2" Sit (5YR 4/4)                                             |            | B-34 (31-31.5')  |
| -32-                      |                                       |              | 8                        |              |                 | SIL,T                                                        |            |                  |
| -33-                      |                                       |              |                          |              |                 | End of Boring at 32 Feet                                     | ļ          |                  |
| {                         |                                       |              |                          |              |                 |                                                              |            |                  |
| -34-                      |                                       |              |                          |              |                 |                                                              | Î          |                  |
| -35-                      |                                       |              |                          |              |                 |                                                              |            |                  |
| -36-                      |                                       |              |                          |              |                 |                                                              | -          |                  |

K YENGLOGSVA 34

| <sup>⊯</sup> Ki              | llam           | 1                      |                |          |                         | BORING LOG                              |                                  | LOG:            | B-35            |
|------------------------------|----------------|------------------------|----------------|----------|-------------------------|-----------------------------------------|----------------------------------|-----------------|-----------------|
| DATE COMPL                   |                |                        | August 15,     | 1998     |                         |                                         | PROJECT: PSE&G: Form             | er Front Street | Gas Works       |
| ORILLER:                     |                |                        | Advanced       |          | oporated                |                                         | LOCATION: Newark, New            | Jersey          |                 |
| NSPECTOR:                    |                |                        | Jonathan 8     |          |                         |                                         | KILLAM PROJECT NUMBER: 2637      | 09              |                 |
|                              |                |                        | Hollow Ste     |          |                         |                                         | STATE CASE NUMBER: N/A           |                 |                 |
|                              |                |                        |                |          |                         |                                         | LATITUDE/LONGITUDE               |                 |                 |
|                              | <b></b> -      |                        |                |          |                         | T - · · · · · · · · · · · · · · · · · · | SURVEYED ELEVATION (R MSL)       | 37.2 (Grou      | COMMENTS        |
| 0627H                        | SOL<br>CLASS   | SAMPLES                | BLOW<br>COUNTS | RECOVERY | FELD<br>SCREENING (ppm) | 1                                       | DESCRIPTION                      |                 |                 |
| -0-                          |                |                        |                | 1        |                         | Belgian Block                           |                                  |                 |                 |
|                              |                |                        |                | ]        |                         |                                         |                                  |                 | 1               |
| -1-                          |                |                        |                | 1        |                         |                                         |                                  |                 |                 |
| -2-                          |                |                        |                | 1        |                         |                                         |                                  |                 | 1               |
| -                            |                |                        |                | 1        |                         |                                         |                                  |                 |                 |
| -3                           |                |                        |                | -        |                         |                                         |                                  |                 |                 |
| +                            | !              |                        |                | 1        |                         |                                         | FILL                             |                 |                 |
|                              |                |                        |                | 1        |                         |                                         |                                  |                 |                 |
| - <del>5</del>               |                |                        | 6              | 5        | 0                       | f-m Sd, I. Sit (5 YR 4/4)               |                                  |                 |                 |
| -\$-                         |                |                        | 11             | 1        |                         |                                         |                                  |                 |                 |
| -                            |                |                        | 16             | 1        |                         | 4                                       |                                  |                 |                 |
| -7-                          |                |                        |                | 4        |                         | · ·                                     |                                  |                 |                 |
| -\$-                         |                |                        |                | 1        | ]                       |                                         |                                  |                 |                 |
| ~                            |                | 1                      |                | 1        |                         |                                         |                                  |                 |                 |
| -\$-                         |                |                        |                | 1        | 1                       |                                         |                                  |                 |                 |
| -10-                         |                |                        | 8              | 15       | 0                       | f Scia. Sit (5 YR 4/4)                  |                                  |                 |                 |
|                              | SW-SM          |                        | 9              | 1        | -                       | . ,                                     | Well Graded SAND with SILT       |                 |                 |
| -11-                         |                |                        | 7              | 4        |                         |                                         |                                  |                 |                 |
| -12-                         |                |                        | 5              |          |                         | 1                                       |                                  |                 |                 |
| +12+                         |                |                        |                | 1        |                         |                                         |                                  |                 | :               |
| -13-                         |                |                        |                |          |                         |                                         |                                  |                 | -               |
|                              |                |                        |                | {        |                         |                                         |                                  |                 |                 |
| -14-                         |                |                        |                |          |                         |                                         |                                  |                 |                 |
| -15-                         |                |                        | 17             | 3        | 0                       | Grv a. f-m-c \$d (5 YR 4/4)             |                                  |                 | 1               |
| 10                           | GW             |                        | 18<br>16       | -        |                         | *                                       | Vell Graded GRAVEL with SAND     |                 |                 |
| -16-                         |                |                        | 18             | 1        |                         |                                         |                                  |                 |                 |
| -17-                         |                |                        |                |          |                         | ]                                       |                                  |                 |                 |
| -18-                         |                |                        |                | -        |                         |                                         |                                  |                 |                 |
| -16-                         | <b> </b>       |                        |                | 1        |                         |                                         |                                  |                 | 1               |
| -19-                         |                |                        |                | ]        |                         |                                         |                                  |                 |                 |
| 70                           |                | <u> </u>               | 6              | 11       | 9.6                     | /<br>/ Sd a. Sit (5 YR 3/4)             |                                  |                 | Odor, Moist     |
| -20-                         |                |                        | 8              | 1        | 3.0                     |                                         |                                  |                 | Drip oil        |
| -21-                         |                |                        | 7              | ]        |                         |                                         |                                  |                 |                 |
| 17                           |                | $ \rightarrow $        | 9<br>7         | 18       | 0                       | 1 Sd, t Sht, t Grv (5 YR 6/4)           |                                  |                 | B-35 (21.5-22') |
| -22-                         |                |                        | 9              |          |                         |                                         |                                  |                 |                 |
| -23-                         |                |                        | 9              | ]        |                         |                                         |                                  |                 |                 |
| -24                          |                |                        | 10             |          |                         | 4                                       |                                  |                 |                 |
| -24-                         |                |                        |                | 1_       |                         |                                         |                                  |                 |                 |
| -25-                         | ļ <sup>1</sup> |                        | 3              | 17       | 0                       | f Sd, t Sit (5 YR 4/4)                  |                                  |                 | 1               |
| -26-                         | SW-SM          |                        | 5              | {        |                         |                                         | Well Graded SAND with SILT       |                 | Wet at 26 Feet  |
| - 20-                        |                |                        | 7              | 1        | l                       | ļ                                       |                                  |                 |                 |
| -27-                         |                |                        |                | -        |                         |                                         |                                  |                 |                 |
| -28-                         |                |                        |                | -        |                         |                                         |                                  |                 |                 |
| -20-                         |                |                        |                | 1        |                         |                                         |                                  |                 |                 |
| -29-                         |                |                        |                | ]        |                         |                                         |                                  |                 |                 |
|                              |                | <u> </u>               |                |          |                         | I SA 1 SHIE VO AM                       | ·                                |                 |                 |
|                              | 1              | $\left  \right\rangle$ | 6              | 14       | o                       | 1 Sd, 1. Sit (5 YR 4/4)                 |                                  |                 | 1               |
| -30-                         |                |                        | 12             | 1        |                         |                                         |                                  |                 | 1               |
| -30-<br>-31-                 |                |                        | 13             | ]        | ļ                       | 14" f Sd, 1. Sit (5 YR 4/4)             |                                  |                 |                 |
| -31-                         |                |                        |                |          |                         | 114-754 1 SH /5 YD 4/4)                 |                                  |                 | 1               |
|                              |                |                        | 23             | 18       | 0                       |                                         |                                  |                 |                 |
| -31-                         | ML             |                        |                | 18       | 0                       | 4" Sit (5YR 4/4)                        |                                  |                 | -               |
| -31-<br>-32-<br>-33-         | ML             |                        | 23<br>34       | 18       | 0                       |                                         | SILT                             |                 |                 |
| -31-<br>-32-                 | ML             |                        | 23<br>34       | 18       | 0                       |                                         |                                  |                 |                 |
| -31-<br>-32-<br>-33-         | ML             |                        | 23<br>34       | 18       | 0                       |                                         | SILT<br>End of Boring at 34 Feet |                 | -               |
| -31-<br>-32-<br>-33-<br>-34- | ML             |                        | 23<br>34       | 18       | 0                       |                                         |                                  |                 | -               |

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| ™Ki                    | illan                     | n                      |                        |          |                 | BORING LOG                                                  | LOG: | B-36                            |
|------------------------|---------------------------|------------------------|------------------------|----------|-----------------|-------------------------------------------------------------|------|---------------------------------|
| DATE COMP              | LETED:                    |                        | August 17,             |          |                 | PROJECT: PSE&G: Former #                                    |      | Gas Works                       |
| DRILLER:<br>INSPECTOR: |                           |                        | Advanced<br>Jonathan 8 |          |                 | LOCATION: Newark, New Jers<br>KILLAM PROJECT NUMBER: 263709 | sey  |                                 |
| DRILLING ME            |                           |                        | Hollow Ste             |          | jei             | STATE CASE NUMBER: N/A                                      |      |                                 |
|                        |                           |                        |                        |          | -               | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (R MSL):          |      |                                 |
| DEPTH                  | sou                       | SAMFLES                |                        | RECOVERY | 1               | VISUUL                                                      |      | COMMENTS                        |
| <del>رتم</del><br>-0-  | CLASS                     |                        | COLINTS                | (N)      | SCREENING (ppm) | DESCRIPTION                                                 |      |                                 |
| -1-                    |                           |                        |                        | -        |                 |                                                             |      |                                 |
| · ·                    |                           |                        |                        | 1        |                 |                                                             |      |                                 |
| -2-                    |                           |                        |                        | 1        |                 |                                                             |      |                                 |
| -3-                    |                           |                        |                        |          |                 |                                                             |      |                                 |
| +                      |                           |                        |                        |          |                 | FILL                                                        |      |                                 |
| -5-                    |                           |                        | 6                      | NR       | NR              | No Recovery                                                 |      |                                 |
| -6-                    |                           |                        | 5                      |          |                 |                                                             |      |                                 |
| -7-                    |                           |                        | -                      |          |                 |                                                             |      |                                 |
| -8-                    |                           |                        |                        | -        |                 |                                                             |      |                                 |
| -9-                    |                           | 1                      |                        |          |                 |                                                             |      |                                 |
| -10-                   |                           | <u></u>                | 5                      | 1 9      | 0               | 1-m-c Sola, Grv, I. Sit (5 YR 4/4)                          |      |                                 |
|                        |                           | $\left  \right\rangle$ | 11                     |          | Ŷ               |                                                             |      |                                 |
| -11-                   |                           |                        | <u>11</u><br>9         |          |                 |                                                             |      |                                 |
| -12-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -13-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -14-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -15-                   |                           |                        | 11                     | 5        | 0               | I-π⊢c Sd a. Grv, I. Sit (5 YR 4/4)                          |      |                                 |
| -16-                   | SP                        |                        | 12                     | 1        |                 | Poorly Graded SAND with GRAVEL                              |      |                                 |
| -17-                   | 3F                        |                        | ¥2                     |          |                 |                                                             |      |                                 |
| -18-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -19-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -20-                   |                           | <u> </u>               | 6                      | 11       | 0               | [f-m-c Sd, I. Grv, I. Cl (5 YR 4/4)                         |      |                                 |
| -21-                   |                           |                        | <u>11</u><br>5         |          |                 |                                                             |      |                                 |
| -22-                   |                           | `                      | S<br>N/A               | N/A      | 190             | (From Cuttings)                                             |      | Strong Odor                     |
|                        |                           |                        |                        |          | 130             |                                                             |      | <b>,</b>                        |
| -23-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -24-                   |                           |                        |                        |          |                 |                                                             |      |                                 |
| -25-                   |                           | $\square$              | 5                      | 19       | 176             | 1 Sd, L Sh (5 YR 4/4)                                       | _    | Strong odor,<br>black staining  |
| -26-                   |                           |                        | 5                      |          |                 |                                                             |      | Slight sheen<br>at 26'          |
| -27-                   |                           |                        | 5                      | 12       | 411             | f Sd, L Sit (10 YR 4/2)                                     |      | Strong odor,<br>Free product    |
| -28-                   | <b>E</b> 147 <b>F</b> • • |                        | 10                     |          |                 | Well Graded SAND with SILT                                  |      |                                 |
| -29-                   | SW-SM                     |                        | 12                     |          |                 |                                                             |      | 0                               |
| -30-                   |                           | $\left \right\rangle$  | 7                      | 12       | 437             | 1 Sd, I, Sit (10 YR 4/2)                                    |      | Strong odor;<br>Free product    |
| -31-                   |                           | $\vdash$               | 11                     | 20       | 2,293           | 1 Sd, I. Skt (5 YR 4/4)                                     |      | Strong odor,                    |
| -32-                   |                           |                        | 20<br>24               |          |                 |                                                             |      | Free product<br>B-36 (32-32.5') |
| -33-                   |                           | $\vdash$               | 26                     | 18       | 216             | 15" f Sd, Sit (5 YR 4/4)                                    |      |                                 |
| -34-                   | ML                        |                        | 21<br>26               |          |                 | 3" Sit, t1 Sd (5 YR 4/4)                                    |      |                                 |
| -35-                   |                           |                        | 26                     |          |                 | SILT SU(STRUCT)                                             |      |                                 |
| -35-                   |                           |                        |                        |          |                 | End of Bonng at 35 Feet                                     |      |                                 |
| *30-                   |                           |                        |                        |          |                 |                                                             | ·    |                                 |

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| ■K         | illar         | n                   |                      |           |                                         | BORING LOG                                                                       | LOG:  | B-37             |
|------------|---------------|---------------------|----------------------|-----------|-----------------------------------------|----------------------------------------------------------------------------------|-------|------------------|
| DATE COMP  | LETED:        |                     | August 1<br>Advanced |           | ncoporated                              | PROJECT: PSE&G: Former F<br>LOCATION: Newark, New Jers                           |       | Gas Works        |
| INSPECTOR  | :             |                     |                      | B. Seckin |                                         | LOCATION: New Jerse<br>KILLAM PROJECT NUMBER: 263709                             | e y   |                  |
| ORILLING M | ETHOD         |                     |                      | em Auger  |                                         | STATE CASE NUMBER N/A                                                            |       |                  |
|            |               |                     |                      |           |                                         | LATITUDE/LONGITUDE:                                                              |       |                  |
| DEPTH      | SOL           | SAME                |                      | RECOVER   |                                         | SURVEYED ELEVATION (It MSL):                                                     |       | COMMENTS         |
| <br>-0-    | CLASS         |                     | COLMTS               | PI        | SCREENING (pon                          | DESCRIPTION                                                                      |       | Comenis          |
| ~          |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -1-        |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -2-        |               |                     |                      | _         |                                         |                                                                                  |       |                  |
| -3-        | ]             |                     |                      | -         |                                         |                                                                                  |       |                  |
|            |               |                     |                      | 1         |                                         |                                                                                  |       |                  |
| -4-        |               |                     |                      | -1        |                                         |                                                                                  |       |                  |
| -5-        |               | $\overline{\nabla}$ | 14                   | 12        | 10                                      | 1-m-c Sd a. Grv, I. Sit; Fill (5 YR 4/4)                                         |       | Slight Chemical  |
| -6-        |               |                     | 14                   | -         |                                         |                                                                                  |       | odor             |
| -          |               |                     | 21                   |           |                                         |                                                                                  |       | B-37 (6-6.5')    |
| -7-        |               |                     |                      | -         |                                         |                                                                                  |       |                  |
| -&-        |               |                     |                      | 1         |                                         |                                                                                  |       |                  |
| ۔و۔        |               |                     |                      | -         | 1                                       |                                                                                  |       |                  |
|            |               |                     |                      | 1         |                                         |                                                                                  |       |                  |
| -10-       |               | $\square$           | 10                   | 10        | 4.3                                     | Grv, I. f-m Sd, L Sit (5 YR 4/4)                                                 |       | Slight odor      |
| -11-       |               |                     | 31                   | 1         |                                         |                                                                                  |       |                  |
| -12-       | sw            |                     | 50/3                 |           |                                         |                                                                                  |       |                  |
| -12-       | 3**           |                     |                      | 1         |                                         | Well Graded SAND with GRAVEL                                                     |       |                  |
| -13-       |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -14-       |               |                     |                      | 1         |                                         |                                                                                  |       |                  |
|            |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -15-       |               | $\left[ \right]$    | 14                   | 16        | 0                                       | f-m Sd, I. Grv, I. Sit (5 YR 4/4)                                                |       |                  |
| -16-       |               |                     | 11                   |           |                                         |                                                                                  |       |                  |
| -17-       |               |                     | 8                    |           | · · · · · · · · · · · · · · · · · · ·   |                                                                                  |       |                  |
| -18-       |               |                     |                      | ]         |                                         |                                                                                  |       |                  |
| .18-       | · · · · · · · | 1                   |                      |           |                                         |                                                                                  |       |                  |
| -19-       |               |                     |                      | ]         |                                         |                                                                                  |       |                  |
| -20-       |               |                     | 6                    | 17        | 0                                       | 1<br>I Sd, t. Sit (5 YR 4/4)                                                     | 1     |                  |
| -21-       |               |                     | 6                    |           |                                         |                                                                                  |       |                  |
|            |               |                     | 5                    |           |                                         |                                                                                  |       |                  |
| -22-       |               |                     |                      |           |                                         |                                                                                  | i i i |                  |
| -23-       | sw            |                     |                      |           |                                         | Well Graded SAND                                                                 |       |                  |
| -24-       | :             |                     | <b>-</b>             |           |                                         |                                                                                  |       |                  |
|            |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -25-       |               | $\sim$              | 8                    | 20        | 0                                       | I Sd. L Sit (5 YR 4/4)                                                           |       |                  |
| -26-       |               |                     | 8                    |           |                                         |                                                                                  |       |                  |
| .27.       |               |                     | 10                   |           | • • • • • • • • • • • • • • • • • • • • |                                                                                  | 1     | Net at 26.5 Feet |
|            |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -28-       |               | 1                   |                      |           |                                         |                                                                                  |       |                  |
| -29-       | SW-SM         |                     |                      |           |                                         | Well Graded SAND with SILT                                                       |       |                  |
| -30-       |               | <u> </u>            |                      | 18        | NA                                      | 12° 1 Sd. I. Sit (5 YR 4/4)                                                      |       | 1                |
|            |               | $\overline{\ }$     | 1                    |           |                                         |                                                                                  |       | 1                |
| -31-       |               |                     |                      |           |                                         | 4* Sit, 1   Sd (5 YR 4/4)         Sit, 1           2* Cl (5 YR 4/6)         CLAY |       |                  |
| -32-       |               |                     | · <b>†</b> · · · · · |           |                                         | LE UTE (R. 4/0] GLAT                                                             |       |                  |
| -32        |               |                     |                      |           |                                         | End of Boring at 32 Feet                                                         |       |                  |
|            |               |                     |                      | ľ         |                                         |                                                                                  |       |                  |
| -34-       |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -35-       |               |                     |                      |           |                                         |                                                                                  |       |                  |
| -36-       |               |                     |                      |           |                                         |                                                                                  |       |                  |
|            |               |                     |                      |           |                                         |                                                                                  |       |                  |

IN VENICIONAL OG SVEL 37

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| INTE CONCENTED:         Observe 10, 1990         PROJECT:         PESSE Concent States (Los Works)           INTERCON         Avance Offers (Proposed)         Avance Offers (Proposed)         VILLAN MODERT MARKER, Market Market           INTERCON         Market Offers (Proposed)         Market Offers (Proposed)         ULLAN MODERT MARKET, Market Market           INTERCON         Market Offers (Proposed)         Market Offers (Proposed)         ULLAN MODERT MARKET, Market Market           Internet Offers         Market Offers (Proposed)         ULLAN MODERT MARKET, Market  Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Market, Marke                                                                                                                                                                                                                                      | <b>™</b> Ki | llan  | 1                      |           |           |                 | BORING LOG                        | LOG: | B-38        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------|------------------------|-----------|-----------|-----------------|-----------------------------------|------|-------------|
| Implementation         Journe B. Second         Journe B. Second         Journe S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S. Second S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |             |       |                        |           |           |                 |                                   |      | Gas Works   |
| Distance MCTHOD         Hotory Start Auger         STATE CASE Mulder, Aug           1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |             |       |                        |           |           |                 |                                   | ey   |             |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |             |       |                        |           |           | let.            |                                   |      |             |
| More by the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of the set of t | DRILLING ME |       |                        | 10004 010 | 1170901   |                 | LATITUDE/LONGITUDE:               |      |             |
| $e^{-}$ $a^{-}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DEFTH       | 504.  | SAMPLES                | #LOW      | RECOVERY  | FIELD           |                                   |      | COMMENTS    |
| 1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | (T)         | CLASS |                        | COUNTS    | (141)     | SCREENING (ppm) | DESCRIPTION                       |      |             |
| 3.       3.       10       0       Fe (SYR 44)         4       10       0       Fe (SYR 44)       10         5       1       1       0       Fe (SYR 44)         4       1       1       1       1         4       1       1       1       1         4       1       1       1       1       1         5       1       1       0       Fe (SYR 44)       1         10       1       1       1       1       1         11       1       1       1       1       1       1         12       1       1       1       1       1       1       1         13       5       1       1       0       Fe (St 1 Gr, 1 St (S YR 44)       1       1         14       0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |             |       |                        |           | 1         |                 |                                   |      |             |
| 3.       Image: Second State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State State St                  | -1-         |       |                        |           |           |                 |                                   |      | · ·         |
| 1       10       10       0       F2 (276 44)         2       10       2       11       12       11         2       11       12       11       11       11         10 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 11       11 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 12 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 13 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -2-         |       |                        |           |           |                 |                                   |      |             |
| 1       1       0       F# (\$YR 44)         4       1       0       F# (\$YR 44)         4       1       2       1         4       1       0       F# (\$YR 44)         16       1       1       1         17       1       1       1         18       1       0       1       1         16       1       1       1       1         18       5       1       1       1       1       1         18       5       1       1       15       0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <td>-3-</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -3-         |       |                        |           | 1         |                 |                                   |      |             |
| 4 $\frac{13}{32}$ $\frac{14}{32}$ $\frac{14}{32}$ 2 $\frac{14}{32}$ $\frac{14}{32}$ $\frac{14}{32}$ $\frac{14}{32}$ 10 $\frac{16}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ 11 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 13 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 14 $\frac{1}{12}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 15 $\frac{1}{11}$ $\frac{1}{12}$ $\frac{1}{11}$ $1$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4           |       |                        |           |           |                 |                                   |      |             |
| 4 $\frac{13}{32}$ $\frac{14}{32}$ $\frac{14}{32}$ 2 $\frac{14}{32}$ $\frac{14}{32}$ $\frac{14}{32}$ $\frac{14}{32}$ 10 $\frac{16}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ 11 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 13 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 14 $\frac{1}{12}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 15 $\frac{1}{11}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{12}$ $\frac{1}{12}$ $\frac{1}{11}$ $1$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -5-         |       | <u> </u>               |           | 10        | 0               | Fil (5YR 4/4)                     |      |             |
| 1.       28       10       10       11         1.5       1       1       11       11       11         1.5       1       1       11       11       11         1.5       1       1       11       11       11         1.5       1       1       11       11       11         1.5       1       1       11       11       11         1.6       1.6       1.6       1.5       1.6       1.6         1.6       1.6       1.6       1.5       1.6       1.5         1.6       1.6       1.5       1.6       1.5       1.5         1.6       1.6       1.5       1.5       1.5       1.5         1.6       1.5       0       1.5       1.5       1.5       1.5         1.6       1.5       0       1.5       1.5       1.5       1.5       1.5         1.7       1.5       0       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5       1.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |       |                        | 18        | 1         |                 |                                   |      |             |
| a       a       a       a       a       a         10 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 11 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 13 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 14 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 15 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 15 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 16 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 16 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |             |       |                        |           | <b></b> . |                 |                                   |      |             |
| 4       10       1       10       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       11       0       11       12       11       0       11       11       0       11       11       0       11       0       11       0       11       0       11       0       11       0       11       0       11       11       11       11       11       11       11       11       11       11       11       15       0       11       15       0       11       15       0       11       15       0       11       15       0       11       12       11       15       0       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       11       12       12       12       13 <t< td=""><td>-7-</td><td></td><td></td><td></td><td>}</td><td></td><td></td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -7-         |       |                        |           | }         |                 |                                   |      |             |
| 10. $\frac{1}{92}$ $4$ $0$ $Fill (SYR 4/4)$ 11.       12.       11.       11.       11.         13.       11.       11.       11.       11.         14.       14.       0       Im Sd. I. Giv, I. Sill (SYR 4/4)       Poorly Graded SAND and Gravel         15.       16.       11.       12.       11.       12.       Poorly Graded SAND and Gravel         16.       19.       11.       15.       0       Im Sd. I. Giv, I. Sill (S YR 4/4)       Poorly Graded SAND and Gravel         17.       15.       11.       15.       0       Im Sd. I. Giv, I. Sill (S YR 4/4)       Storg Oddr         18.       19.       12.       11.       15.       0       Im Sd. I. Sill (S YR 4/4)       Storg Oddr         24.       11.       15.       5.       6       6       Im Sd. I. Sill (S YR 4/4)       Storg Oddr         25.       13.       6       0       Im Sd. I. Sill (S YR 4/4)       Storg Oddr       Storg Oddr         26.       3.       0       11.       15.       15.       Sill (S YR 4/4)       Storg Oddr         27.       3.       0       0       15.       15.       Sill (S YR 4/4)       Storg Oddr                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | *           |       |                        |           |           |                 |                                   |      |             |
| 11 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 13 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 13 $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ $\frac{1}{11}$ 14 $\frac{1}{11}$ $\frac{1}{12}$ $\frac{1}{11}$ <td>-9-</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -9-         |       |                        |           | 1         |                 |                                   |      |             |
| 11. $\frac{12}{11}$ 12. $\frac{11}{11}$ $\frac{11}{11}$ 13. $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{11}$ $\frac{11}{15}$ $\frac{11}{15}$ $\frac{11}{15}$ $\frac{11}{11}$ $\frac$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -10-        |       |                        |           | 4         | 0               | Fill (5YR 4/4)                    |      |             |
| 12       13       14       14       0       1ent Sd, I, Gev, I, SR (5 YR 4/4)         15       8       14       0       1ent Sd, I, Gev, I, SR (5 YR 4/4)         15       22       11       15       0         16       12       11       15       0         17       11       15       0       1ent Sd, I, Gev, I, SR (5 YR 4/4)         18       11       15       0       1ent Sd, I, Gev, I, SR (5 YR 4/4)         19       5       5       1ent Sd, I, Gev, I, SR (5 YR 4/4)       Visible Product         20       11       15       0       1ent Sd, I, SR (5 YR 4/4)       Visible Product         21       10       1       15       1ent Sd, I, SR (5 YR 4/4)       Visible Product         22       11       16       2.1       15       1.5 I (5 YR 4/4)       Visible Product         24       10       1       15       1.5 I (5 YR 4/4)       Visible Product       Story Oor         25       10       1       1.6 I (5 I (5 YR 3/2))       Visible Product       Story Oor       Visible Product         36       0       15 I (5 I (5 YR 3/2)       Visible Product       Story Oor       Story Oor         37       10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | .11.        |       |                        |           |           |                 |                                   |      |             |
| 13       13       14       0       1m Sd ( Gr, L St (5 YR 4/4))         15       8       14       0       1m Sd ( Gr, L St (5 YR 4/4))         18       18       22       1       1         18       22       1       1       1         19       5P       1       1       15       0         19       5P       1       1       15       0         10       1       1       5       0       1       1         20       1       1       15       0       1       1       1         21       1       15       0       1       1       1       1       1         22       1       1       15       0       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1 <t< td=""><td>-12.</td><td></td><td></td><td><u></u></td><td></td><td></td><td></td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -12.        |       |                        | <u></u>   |           |                 |                                   |      |             |
| Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite       Ite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |       |                        |           | 1         |                 |                                   |      |             |
| 15       8       14       0       (m Sd, I, Grv, I, Stl (5 YR 4/4)         16       17       18       19       5P       Poorly Graded SAND and Gravel         19       5P       9       0       (m c Sd, I, Grv, I, Stl (5 YR 4/4)       Poorly Graded SAND and Gravel         20       11       15       0       (m c Sd, I, Grv, I, Stl (5 YR 4/4)       Visible Product         21       9       0       11       15       0       (m c Sd, I, Stl (5 YR 4/4)       Visible Product         22       12       12       12       12       Visible Product       Storig Coor       Visible Product         23       0       0       1       m Sd, I, Stl (5 YR 4/4)       Visible Product       Storig Coor         24       10       16       2.1       1 Sd, I, Stl (5 YR 4/4)       Visible Product       Storig Coor         24       3       0       1 Sd, I, Stl (5 YR 4/4)       Visible Product       Storig Coor         25       3       0       1 Sd, I, Stl (5 YR 3/2)       Visible Product       Storig Coor         31       11       20       6       14' f Sd, I, Stl (5 YR 3/2)       Storig Coor       Storig Coor         32       3       10       92       1 Sd,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -13-        |       |                        |           |           |                 |                                   |      |             |
| 16.       9.         17.       22.         16.       22.         17.       9.         16.       9.         17.       9.         16.       9.         17.       9.         18.       9.         19.       9.         11.       15.         12.       9.         12.       9.         12.       9.         12.       9.         12.       9.         12.       9.         12.       9.         12.       11.         12.       12.         13.       0.1 (5 YR 32)         10.       11.         13.       11.         14.       15d. a. St. (5 YR 4/4)         28.       10.         10.       11.         11.       16.         12.       15d. a. St. (5 YR 4/4)         24.       3.         3.       8.         14.       15 (5 4. a. St. (5 YR 3/2)         14.       5 (5 4. a. St. (5 YR 3/2)         13.       11.         14.       5 (5 4. a. St. (5 YR 3/2) <td>-14-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -14-        |       |                        |           |           |                 |                                   |      |             |
| 16.       18       18       17.         17.       18       22       11       15       0         18.       19       5P       11       15       0       fm-c Sd, 1 Grv, 1 SR (5 YR 4/4)         20.       11       15       0       fm-c Sd, 1 Grv, 1 SR (5 YR 4/4)       14       12         22.       12       12       12       14       15       0       14       15       14       15       14       15       14       15       14       14       15       14       14       14       14       14       15       14       15       14       15       14       15       14       15       14       15       14       15       14       15       14       15       14       15       14       15       14       15       14       14       15       14       15       15       14       15       15       14       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15       15 <td>-15-</td> <td></td> <td></td> <td></td> <td>14</td> <td>C</td> <td>1-m Sd, I. Grv, I. Sli (5 YR 4/4)</td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -15-        |       |                        |           | 14        | C               | 1-m Sd, I. Grv, I. Sli (5 YR 4/4) |      |             |
| 17. $18.$ $59$ $11.$ $15.$ $0$ $1mc Sd, I. Grv, I. St (5 YR 4/4)$ 20. $11.$ $15.$ $0$ $1mc Sd, I. Grv, I. St (5 YR 4/4)$ $1mc Sd, I. Grv, I. St (5 YR 4/4)$ 21. $0.$ $0.$ $1mc Sd, I. Grv, I. St (5 YR 4/4)$ $1mc Sd, I. Grv, I. St (5 YR 4/4)$ 22. $12.$ $12.$ $1mc Sd, I. St (5 YR 4/4)$ $Strong Odor$ 24. $0.$ $0.$ $0.$ $1mc Sd, I. St (5 YR 4/4)$ $Strong Odor$ 24. $0.$ $0.$ $0.$ $1mc Sd, I. St (5 YR 4/4)$ $Strong Odor$ 25. $CL$ $6.$ $6.$ $0.$ $1sc (5 YR 4/4)$ $Strong Odor$ 26. $0.$ $0.$ $1sc (5 YR 4/4)$ $Strong Odor$ $Well Graded SAND with Silt$ $Well Graded SAND with Silt$ 27. $0.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$ $1.$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -16-        |       |                        | 18        |           |                 |                                   |      |             |
| Image: SP       Image: SP       Poorty Graded SAND and Gravel         -20 $11$ $15$ $0$ -21 $0$ $0$ $112$ -22 $0$ $112$ $12$ -23 $0$ $0$ $112$ -24 $0$ $0$ $112$ -25 $CL$ $6$ $6$ $191$ $CLAY$ Visible Product         -26 $0$ $0$ $1m$ 5d, t Sit (5 YR 4/4)       Sition Odor       Weit         -26 $100$ $6$ $6$ $1m$ 5d, t Sit (5 YR 4/4)       Weit Graded SAND with Sit:         -27 $3$ $6$ $0$ $15d$ , t Sit (5 YR 4/4) $5^{+}$ 15d, a. Sit (5 YR 4/4)         -28 $3$ $0$ $15d$ , t Sit (5 YR 4/4) $5^{+}$ 15d, a. Sit (5 YR 4/4)         -29 $3$ $6$ $0$ $14^{+}$ 15d, t Sit (5 YR 4/4) $5^{+}$ 15d, a. Sit (5 YR 3/2)       Sight Odor         -31 $11$ $12$ $0$ $15d$ , a. Sit (5 YR 3/2)       Sight Odor         -33 $3$ $10$ $92$ $15d$ , a. Sit (5 YR 3/2)       Sigmt Odor         -34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -17-        |       | `                      | <u> </u>  |           |                 |                                   |      |             |
| -20       11       15       0       fmc Sd, I Grv, t. St (5 YR 4/4)         21.       9       9       9       9         22.       12       12       12       12         23.       12       12       12       12         24.       9       6       6       131       CI (5 YR 3/2)       CLAY       Visible Product         24.       9       6       8       1m Sd, L Sit (5 YR 4/4)       Strong Odor       Weit         24.       13       11       16       2.1       I Sd, a. St (5 YR 4/4)       Strong Odor         26       0       9       6       15 d, 1. St (5 YR 4/4)       Weit Graded SAND with Sitt       Strong Odor         27.       11       16       2.1       I Sd, 1. St (5 YR 4/4)       Strong Odor       Weit Graded SAND with Sitt       Stight Odor         30.       5       9       6       14* f Sd, 1. St (5 YR 3/2)       Stight Odor       Strong Odor         31.       11       20       6       14* f Sd, 1. St (5 YR 3/2)       Stight Odor       Strong Odor         32.       3       10       92       f Sd, a. St (5 YR 3/2)       Strong Odor       Strong Odor         33.       9 <t< td=""><td>-18-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -18-        |       |                        |           |           |                 |                                   |      |             |
| -20- $11$ 15       0       (m-c Sd, I Grv, t St (5 YR 4/4)         21- $9$ $11$ $15$ $0$ 22- $12$ $12$ $12$ $12$ 23- $12$ $12$ $11$ $15$ $11$ 24- $12$ $12$ $11$ $11$ $11$ $11$ 24 $11$ $16$ $11$ $11$ $15$ (5 YR 4/4) $11$ 25 $CL$ $6$ $6$ $11$ $15$ (5 YR 4/4) $11$ $11$ 26 $10$ $6$ $15$ (5 YR 4/4) $11$ $16$ $21$ $15$ (5 YR 4/4) $11$ 26 $10$ $11$ $16$ $21$ $15$ (5 YR 4/4) $11$ $16$ $11^{-1}$ 15 (5 YR 4/4) $11^{-1}$ 15 (5 YR 4/4) $11^{-1}$ 14 $11^{-1}$ 14 $11^{-1}$ 15 (5 YR 3/2) $11^{-1}$ 15 (5 YR 3/2) $11^{-1}$ 15 (5 YR 3/2) $11^{-1}$ 14 $11^{-1}$ 14 $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2) $5^{-1}$ 15 (5 YR 3/2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -19-        | SP    |                        |           |           |                 | Poorly Graded SAND and Gravel     |      |             |
| $\frac{9}{9}$ $\frac{9}{12}$ $\frac{9}{12}$ $\frac{9}{12}$ $\frac{9}{12}$ $\frac{1}{12}$ 22.       23.       24.       24.       25.       CL       6       6       131.       CI (5 YR JZ)       CLAY       Visible Product         24.       0.       6       6       131.       CI (5 YR JZ)       CLAY       Visible Product         25.       CL       6       6       9       Imm Sd. 1. Sit (5 YR 4/4)       Stong Odor         26.       10.       9       11.       16       2.1       f Sd. a. Sit (5 YR 4/4)       Visible Product         27.       11.       16       2.1       f Sd. a. Sit (5 YR 4/4)       Visible Product       Stong Odor         28.       0.0       9       15 d. 1. Sit (5 YR 4/4)       Visible Product SAND with Silt       Sign Odor         31.       11.       20       6       14 <sup>+</sup> f Sd. 1. Sit (5 YR 3/2)       Sign Odor         32.       9       10       92       f Sd. a. Sit (5 YR 3/2)       Sign Odor         33.       10       92       f Sd. a. Sit (5 YR 3/2)       Sign Odor         34.       5       9       15 d. a. Sit (5 YR 3/2)       Sitong Odor         34.       9       10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |       |                        | 11        | 15        |                 | (mar 54   Gov   5# (5 ¥P 4/4)     |      |             |
| 22.       12       12       Visible Product         23.       6       6       6       131       CI (5 YR 3/2)       CLAY       Visible Product         24.       5       6       8       1m Sd, I, Sil (5 YR 4/4)       Visible Product       Strong Odor         26.       10       13       16       2.1       1 Sd, a. Shl (5YR 4/4)       Visible Product         27.       11       16       2.1       1 Sd, a. Shl (5YR 4/4)       Visible Product       Visible Product         28.       10       9       6       1 Sd, I. Shl (5 YR 4/4)       Visible Product       Visible Product         29.       3       6       0       1 Sd, I. Shl (5 YR 4/4)       Visible Product       Visible Product         31.       11       12       14 '1 Sd, I. Shl (5 YR 4/4)       Visible Product       Slipht Odor         31.       11       20       6       14 '1 Sd, I. Shl (5 YR 4/4)       Slipht Odor         32.       9       10       92       1 Sd, a. Shl (5 YR 3/2)       Slipht Odor         33.       10       92       1 Sd, a. Shl (5 YR 3/2)       Shoen       Shrong Odor         34.       6       9       1       Slipht Odor       Shrong Odor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |             |       | $\mathbf{X}$           | 9         | ,,,       | J               |                                   |      |             |
| -23.       -24.       -25.       CL       6       6       131.       CI (5 YR $\Delta 2)$ CLAY       Visible Product         -25.       CL       6       6       131.       CI (5 YR $\Delta 2)$ CLAY       Visible Product         -26.       10       6       8       I-m Sd, L Sit (5 YR 4/4)       Strong Odor       Weit         -26.       11       16       2.1       1 Sd, a. Sit (5 YR 4/4)       Visible Product       Strong Odor         -27.       11       16       2.1       1 Sd, a. Sit (5 YR 4/4)       Visible Product       Strong Odor         -28.       9       -       -       -       -       -       Visible Product         -29.       3       8       0       1 Sd, a. Sit (5 YR 4/4)       -       -         -30.       StW       12       -       -       -       -       -         -31.       11       12       -       -       -       -       -       -         -31.       11       14       51 Sd, a. Sit (5 YR 3/2)       -       -       -       -         -33.       3       10       92       1 Sd, a. Sit (5 YR 3/2)       -       -       -       -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -21-        |       |                        |           |           |                 |                                   |      |             |
| 24       6       6       131       Cl (5 YR 3/2)       CLAY       Visible Product         26 $\frac{8}{10}$ $6$ $8$ $f - m Sd, t. Sit (5 YR 4/4)$ Strong Odor       Well         27. $\frac{11}{13}$ $16$ $2.1$ $f Sd, a. Sit (5 YR 4/4)$ Well       Well         28. $\frac{9}{9}$ $\frac{3}{3}$ $8$ $0$ $f Sd, l. Sit (5 YR 4/4)$ $Well Graded SAND with Sitt$ 29. $\frac{3}{3}$ $8$ $0$ $f Sd, l. Sit (5 YR 4/4)$ $Well Graded SAND with Sitt$ 31. $11$ $20$ $6$ $14^{+}f Sd, l. Sit (5 YR 3/2)$ Silght Odor         33. $10$ $92$ $f Sd, a. Sit (5 YR 3/2)$ Silght Odor       Silght Odor         33. $10$ $92$ $f Sd, a. Sit (5 YR 3/2)$ Silght Odor       Silght Odor         33. $10$ $92$ $f Sd, a. Sit (5 YR 3/2)$ Sheen       Strong Odor         34. $\frac{5}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ 35. $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$ $\frac{1}{9}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -22-        |       |                        |           |           |                 |                                   |      |             |
| -25       CL       6       6       13       CL (5 YR 3/2)       CLAY       Visible Product         -26       10       6       8       1m Sd, 1. Sit (5 YR 4/4)       Strong Odor       Well         -27       11       16       2.1       1 Sd, a. Sit (5 YR 4/4)       Visible Product       Visible Product         -27       11       16       2.1       1 Sd, a. Sit (5 YR 4/4)       Visible Product       Visible Product         -27       11       16       2.1       1 Sd, a. Sit (5 YR 4/4)       Visible Product       Visible Product         -28       9       -       -       -       -       -       -       -         -29       3       8       0       1 Sd, 1. Sit (5 YR 4/4)       -       -       -         -30       SW       5       -       -       -       -       -       -         -31       11       20       6       14 <sup>-1</sup> Sd, 1. Sit (5 YR 3/2)       Sight Odor       -       -       -         -32       3       10       92       1 Sd, a. Sit (5 YR 3/2)       Sheen       -       -       -       -         -33       -       -       -       -       -       - <td>-23-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -23-        |       |                        |           |           |                 |                                   |      |             |
| 26-     10     1-m Sd, t. Sit (5 YR 4/4)     Strong Odor       -27-     11     16     2.1     I Sd, a. Sit (5YR 4/4)       -28-     9     -     -       -29-     .3     8     0     I Sd, 1. Sit (5 YR 4/4)       -30-     SW     5     -       -11     20     6     14* f Sd, 1. Sit (5 YR 4/4)       -31-     -     11     20       -31-     -     11     14       -31-     -     -       -33-     0     9       -34-     -     -       -34-     -     -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -24-        |       |                        |           |           |                 |                                   |      |             |
| -26-     10     Wet       -27-     11     16     2.1     I Sd, a. SH (5YR 4/4)       -28-     0     9     10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -25-        | CL    | < <u> </u>             | 6         | 6         |                 | CI (5 YR 3/2) CLAY                | ·    |             |
| -27. $13$ 1       15d, a. Str (5YR 4/4)         -28. $10$ 9       1         -29. $3$ 8       0       1 Sd, 1. Str (5 YR 4/4)         -30.       SW $\frac{5}{5}$ Well Graded SAND with Silt         -31. $11$ 20       6 $14^{+1}$ Sd, 1. Slr (5 YR 4/4)         -32. $\frac{3}{3}$ 10       92 $1$ Sd, a. Str (5 YR 3/2)       Slight Odor         -33. $\frac{3}{5}$ 10       92 $1$ Sd, a. Str (5 YR 3/2)       Sheen         -34. $\frac{6}{9}$ $\frac{6}{9}$ $\frac{1}{5}$ $\frac{1}{5}$ Sd, a. Str (5 YR 3/2)       Sheen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -26-        |       |                        |           | 6         | 8               | 1-m Sd, L. Sit (5 YR 4/4)         |      |             |
| -28     8       .29     3     8     0     1 Sd, I. Sit (5 YR 4/4)       .30     SW     5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |             |       | $ \longrightarrow$     | 13        | 10        | <u> </u>        |                                   |      |             |
| 9     1       .30     SW       .31     .31       .31     .31       .32     .33       .33     .31       .33     .31       .33     .31       .33     .31       .34     .31       .35     .33                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |             |       | $\mathbf{X}$           | 8         | 10        | £.1             |                                   |      |             |
| .30-     SW     3     3     Well Graded SAND with Silt       .31-     11     20     6     14" f Sd, I. Sil (5 YR 4/4)       .32-     8     9       .33-     3     10     92       .34-     6     9       .35-     9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -28-        |       |                        |           |           |                 | ·                                 |      |             |
| -30.     SW     5     Well Graded SAND with Silt       -31.     11     20     6       -31.     11     20     6       -32.     8     14       -33.     3     10       -34     6       -35.     9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -29-        |       |                        |           | 8         | 0               | 1 Sd, I. Sit (5 YR 4/4)           |      |             |
| -31.     11     20     6     14* f Sd, I. SH (5 YR 4/4)       -32.     11     14     5* f Sd, a. SH (5 YR 3/2)     Slight Odor       -33.     3     10     92     1 Sd, a. SH (5 YR 3/2)     Sheen       -34.     6     -35.     9     Strong Odor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -30-        | sw    |                        | 5         |           |                 | Well Graded SAND with Sitt        |      |             |
| -32     8       -33     3     10     92     f Sd, a. Sit (5 YR 3/2)     Sheen       -34     6       -35-     -34                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -31-        |       | $\overline{}$          | 11        | 20        |                 |                                   |      |             |
| -33-<br>-34-<br>-35-<br>3 10 92 ( Sd, a. Sit (5 YR 3/2) Sheen Strong Odor<br>-34-<br>-35-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -32-        |       | $\left  \right\rangle$ | 8         |           | 14              | 5° 1 5 d. a. 511 (5 YR 3/2)       |      | Slight Odor |
| -34-<br>-35-<br>Strong Odor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | •33-        |       |                        |           | 10        | 92              | 1 Sd, a. Sn (5 YR 3/2)            |      | Sheen       |
| -35-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |             |       | $\mathbf{X}$           | 5         |           |                 |                                   |      |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |       |                        |           |           |                 |                                   |      |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |       |                        |           |           |                 |                                   |      |             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -38-        |       |                        |           |           |                 |                                   |      |             |

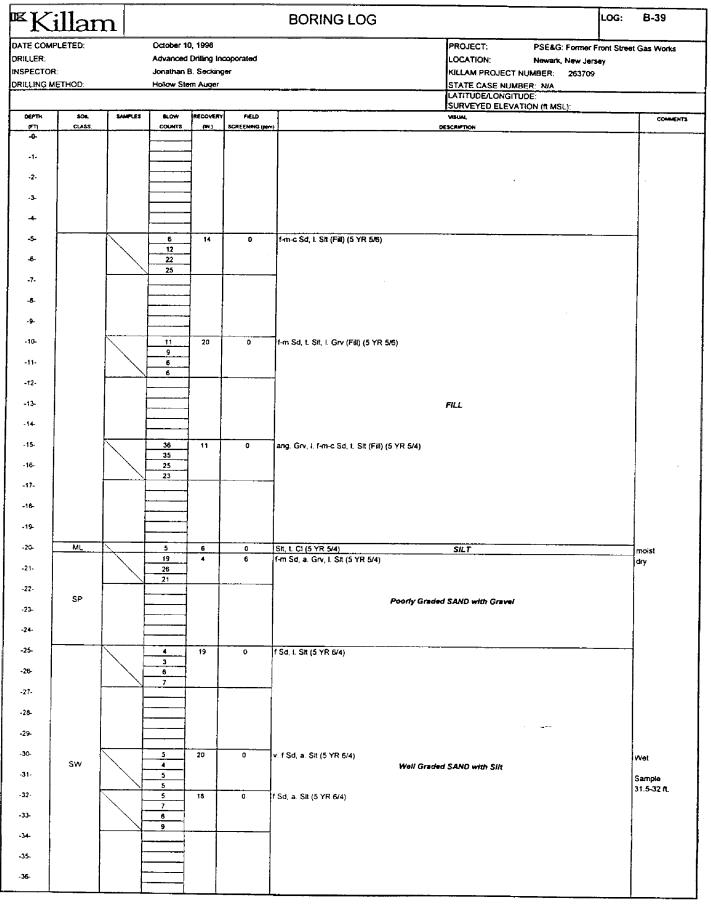
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| ™K            | illar         | nT       |              |                   |                | BORING LOG                             |                                                    | LOG: B-38              |
|---------------|---------------|----------|--------------|-------------------|----------------|----------------------------------------|----------------------------------------------------|------------------------|
| DATE COM      |               |          | October      | 40.4000           |                | (continued)                            |                                                    |                        |
| DRILLER:      | PLETED.       |          |              |                   | ncoporated     |                                        |                                                    | Front Street Gas Works |
| INSPECTOR     |               |          | Jonathar     | B. Seckin         | ger            |                                        | KILLAM PROJECT NUMBER: 26370                       |                        |
| DRILLING M    | AETHOD:       |          | Hollow S     | tem Auger         |                |                                        | STATE CASE NUMBER: N/A                             |                        |
|               |               |          |              |                   |                |                                        | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (R MSL): |                        |
| DEPTH<br>(FT) | SOIL<br>CLASS | SAMPL    |              | RECOVER           |                |                                        | VISUAL                                             | COMMENTS               |
| -35-          | 1             |          | COUNTS<br>6  | <u>(IN)</u><br>24 | SCREENING (pp- | 1 Sd, a. Sit (5 YR 3/2)                | DESCRIPTION                                        | Strong Odor            |
| -36-          |               |          | 6<br>7<br>7  |                   |                |                                        |                                                    | Product                |
| -37-          |               |          | 3            | 16                | 88             | -<br>1-m Sd, a. Sit, I. Grv (5 YR 3/2) |                                                    |                        |
| -38-          |               |          | 4<br>6<br>12 | -                 |                |                                        |                                                    |                        |
| -39-          |               | $\wedge$ | 19           | 18                | o              | Sit, I c. Sd (5 YR 4/4)                |                                                    |                        |
| -40-          | ML            |          | 27           | -                 |                |                                        | SILT                                               |                        |
| -41-          |               | 1        | 23           |                   | 1              | End of Boring @ 41'                    | · · · · · · · · · · · · · · · · · · ·              |                        |
| -42-          |               |          |              |                   |                |                                        |                                                    |                        |
| -43-          |               |          |              |                   |                |                                        |                                                    |                        |
| -44-          |               |          |              |                   |                |                                        |                                                    |                        |
| -45-          |               |          |              |                   |                |                                        |                                                    |                        |
| -45-          |               |          |              |                   |                |                                        |                                                    |                        |
| -47-          |               |          |              |                   |                |                                        |                                                    |                        |
| -48-          |               |          |              |                   |                |                                        |                                                    |                        |
| -49-          |               |          |              |                   |                |                                        |                                                    |                        |
| -50-          |               | 1        |              |                   |                |                                        |                                                    |                        |
| -51-          |               |          |              |                   |                |                                        |                                                    |                        |
| -53-          |               |          |              |                   |                |                                        |                                                    |                        |
| -54-          |               |          |              |                   |                |                                        |                                                    |                        |
| -55-          |               |          |              |                   |                |                                        |                                                    |                        |
| -56-          |               |          |              |                   |                |                                        |                                                    |                        |
| -57-          |               |          |              |                   |                |                                        |                                                    |                        |
| -58-          |               |          |              |                   |                |                                        |                                                    |                        |
| -59-          |               |          |              |                   |                |                                        |                                                    |                        |
| -60-          |               |          |              |                   |                |                                        |                                                    |                        |
| -61-          |               |          |              |                   |                |                                        |                                                    |                        |
| -62-          |               |          |              |                   |                |                                        |                                                    |                        |
| -63-          |               |          |              |                   |                |                                        |                                                    |                        |
| -64-          | i             |          |              |                   |                |                                        | ·                                                  |                        |
| -65-          |               |          |              |                   |                |                                        |                                                    |                        |
| -66-          |               |          |              |                   |                |                                        |                                                    |                        |
| -67-          |               |          |              |                   |                |                                        |                                                    |                        |
| -68-          |               |          |              |                   |                | I                                      |                                                    |                        |
| -69-          |               |          |              |                   |                |                                        |                                                    |                        |
| •71-          |               |          |              |                   |                |                                        |                                                    |                        |
|               |               |          |              |                   |                |                                        |                                                    |                        |

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K-ENG-263709LOG\$18-30

| DATE COUPLETED:<br>DRULER<br>DRULER<br>Advanced Duling Incorporated<br>Jonathan B. Seckinger<br>Jonathan B. Seckinger<br>Jonath | ■Ki                                | illan  | <b>n</b> |                        |                          | I | BORING LOG<br>(continued) | <u></u> | <u> </u>                                      |                                                 | LOG: | B-39      |          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------|----------|------------------------|--------------------------|---|---------------------------|---------|-----------------------------------------------|-------------------------------------------------|------|-----------|----------|
| Builder De Lavorino, musici         Builder De Lavorino, musici         Construit           100         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10 <th>DATE COMP<br/>DRILLER:<br/>INSPECTOR</th> <th>LETED:</th> <th></th> <th>Advanced<br/>Jonathan B</th> <th>Drilling In<br/>3. Seckin</th> <th></th> <th></th> <th></th> <th>LOCATION:<br/>KILLAM PROJECT<br/>STATE CASE NUM</th> <th>Newark, New Jers<br/>NUMBER: 263709<br/>IBER: N/A</th> <th>iey</th> <th>Gas Works</th> <th></th>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | DATE COMP<br>DRILLER:<br>INSPECTOR | LETED: |          | Advanced<br>Jonathan B | Drilling In<br>3. Seckin |   |                           |         | LOCATION:<br>KILLAM PROJECT<br>STATE CASE NUM | Newark, New Jers<br>NUMBER: 263709<br>IBER: N/A | iey  | Gas Works |          |
| $10^{-10^{-10^{-10^{-10^{-10^{-10^{-10^{-$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                    |        |          |                        |                          |   |                           |         | SURVEYED ELEV                                 | TION (IT MSL):                                  |      |           |          |
| 3-5     5     1/2     0     / 5 a. 5 fd 17.440       3-7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | •                                  |        | SAMPLES  |                        |                          |   |                           |         |                                               |                                                 |      | COMMENTS  |          |
| 36     37       37     38       38     39       38     39       38     39       38     30       38     30       38     30       39     31       39     31       30     31        39     31       30     31       31     31       32     31       34     31       35     31       36     31       37     31       38     31       39     31       30     31       31     31       32     31       33     34       34     34       35     35       36     31       37     31       38     31       39     31       31     34       35     35       36     31       37     32       38     33       39     34       34     34       35     35       36     31       37     32       38     34       39        39                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    | CLASS  |          |                        |                          |   | f Sd, a. Sit (5 YR 4/4)   | DE      | PLATE I KIM                                   |                                                 |      |           |          |
| 33.     3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                                  |        |          |                        | -                        |   |                           |         |                                               |                                                 |      |           |          |
| AB     Image: Constraint of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the                                                                                                                                                                                                                                                                                            | -36-                               |        |          |                        |                          |   | _                         |         |                                               |                                                 |      |           |          |
| 10     4     0     0       4     6     0     53.4 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -37-                               |        |          |                        | 4                        |   |                           |         |                                               |                                                 |      |           |          |
| da     x     di     0       di     11     0     0     State 33 379 401       State 33 379 401     State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -38-                               |        |          |                        | 1                        |   |                           |         |                                               |                                                 |      |           |          |
| da     x     di     0       di     11     0     0     State 33 379 401       State 33 379 401     State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 401       State 33 379 40                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -39-                               |        |          |                        | 4                        |   |                           |         |                                               |                                                 |      |           |          |
| Image: state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state in the state i                                                                                                                                                                                                                                                                                  |                                    |        | <u> </u> |                        |                          |   | 1 SA & SH /5 YD 4/41      |         |                                               |                                                 |      |           | }        |
| III         End of Borry @ 12           43         1           44         1           45         1           46         1           47         1           48         1           49         1           43         1           44         1           45         1           46         1           47         1           48         1           49         1           40         1           41         1           42         1           43         1           44         1           45         1           46         1           47         1           48         1           44         1           45         1           46         1           47         1           48         1           49         1           41         1           42         1           43         1           44         1           45         1 <td>-40-</td> <td>·</td> <td></td> <td>8</td> <td>6</td> <td>0</td> <td>Sit (10 YR 6/2)</td> <td></td> <td></td> <td>······</td> <td></td> <td>1</td> <td>1</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40-                               | ·      |          | 8                      | 6                        | 0 | Sit (10 YR 6/2)           |         |                                               | ······                                          |      | 1         | 1        |
| 42.       End of Borry @ 47         44.       A.         45.       A.         46.       A.         47.       A.         48.       A.         49.       A.         41.       A.         42.       A.         43.       A.         44.       A.         45.       A.         46.       A.         47.       A.         48.       A.         49.       A.         41.       A.         42.       A.         43.       A.         44.       A.         45.       A.         46.       A.         47.       A.         48.       A.         49.       A.         44.       A.         45.       A.         46.       A.         47.       A.         48.       A.         49.       A.         40.       A.         41.       A.         42.       A.         43.       A.         44.       A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -41-                               | ML     |          |                        | 4                        | o | Stt. I. Grv (5 YR 4/4)    |         | SILT                                          |                                                 |      |           |          |
| 44       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -42-                               |        |          |                        | 1                        |   | End of Boring @ 42'       |         |                                               |                                                 |      | 1         |          |
| 145       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -43-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 145       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 44                                 |        |          |                        |                          | 1 |                           |         |                                               |                                                 |      |           |          |
| 46       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                    | •      |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 47.       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1.1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 45-                                |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 14.       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -46-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 48.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       49.       4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -47-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 352       353       354       354       354       355         353       354       354       355       355         354       354       354       355       355         355       356       356       357       356         354       356       357       356       357         354       356       356       356       357         354       356       356       356       356         354       356       356       356       356         354       356       356       356       356         354       356       356       356       356         354       356       356       356       356         355       356       356       356       356         363       356       356       356       356         364       356       356       356       356         364       356       356       356       356         364       356       356       356       356         364       356       356       356       356         364       356       356       3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -48-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 352       353       354       354       354       355         353       354       354       355       355         354       354       354       355       355         355       356       356       357       356         354       356       357       356       357         354       356       356       356       357         354       356       356       356       356         354       356       356       356       356         354       356       356       356       356         354       356       356       356       356         354       356       356       356       356         355       356       356       356       356         363       356       356       356       356         364       356       356       356       356         364       356       356       356       356         364       356       356       356       356         364       356       356       356       356         364       356       356       3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 49                                 |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 31.       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                    |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 52     53       53     54       54     54       55     54       56     54       57     54       58     54       59     54       54     54       55     54       56     54       57     54       58     54       59     54       54     54       55     54       56     54       56     54       56     54       56     54       56     54       56     54       57     54       58     54       59     54       54     54       55     54       56     54       57     54       58     54       59     54       59     54       50     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -50-                               |        | ł        | n.                     |                          |   |                           |         |                                               |                                                 |      |           | ļ        |
| 52     53       53     54       54     54       55     54       56     54       57     54       58     54       59     54       54     54       55     54       56     54       57     54       58     54       59     54       54     54       55     54       56     54       56     54       56     54       56     54       56     54       56     54       57     54       58     54       59     54       54     54       55     54       56     54       57     54       58     54       59     54       59     54       50     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54     54       54                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -51-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           | <u>ل</u> |
| 54     55       55     56       56     57       58     58       59     59       40     59       51     59       42     59       43     59       44     59       45     59       46     59       47     59       48     59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -52-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           | 1        |
| 54     55       55     56       56     57       58     58       59     59       40     59       51     59       42     59       43     59       44     59       45     59       46     59       47     59       48     59                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -53-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 35     36     37       36     37       36     38       37     38       38     38       38     38       38     38       38     38       39     38       41     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48       43     48                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1                                  |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           | ł        |
| 56     57       58     58       59     59       60     51       61     52       63     53       64     55       65     56       66     51       67     51       68     51       69     51       70     51                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -54-                               |        |          |                        | :                        |   |                           |         |                                               |                                                 |      |           |          |
| 57.       58.       59.       59.       60.       61.       61.       61.       61.       61.       62.       63.       63.       63.       63.       63.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       64.       6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -55-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| .58.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -56-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| .59.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -57-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| .59.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -58-                               |        |          |                        | 1                        |   |                           |         |                                               |                                                 |      |           |          |
| 86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       86.       8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                    |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 51.       62.         43.       64.         65.       64.         65.       64.         66.       64.         67.       64.         68.       64.         69.       64.         7.0.       64.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                    |        |          | ĺ                      |                          |   |                           |         |                                               |                                                 |      | 1         | }        |
| -62.     -63.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.     -64.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -60-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| -63.     -64.       -64.       -65.       -66.       -67.       -68.       -69.       -70.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -61-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 64       65       66       66       67       68       68       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60 <td< td=""><td>-62-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -62-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| 64       65       66       66       67       68       68       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       69       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60       60 <td< td=""><td>-63-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -63-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| -65-       -66-       -67-       -68-       -69-       -70-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                    |        |          |                        |                          |   |                           |         |                                               | y 44 - 4                                        |      |           |          |
| -66-       -67-       -68-       -69-       -70-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                    |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| -67.<br>-68-<br>-69-<br>-70-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -65-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| -68-<br>-69-<br>-70-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -66-                               |        |          |                        |                          |   |                           |         |                                               | ·                                               |      |           |          |
| -68-<br>-69-<br>-70-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -67.                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| -69-<br>-70-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
| -70.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                    |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -69-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      | •         |          |
| -71.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -70-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -71-                               |        |          |                        |                          |   |                           |         |                                               |                                                 |      |           | نسه ا    |

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| ■K                                               | illan  | n               |                                                       |                            |                 | BORING LOG                                                                                                                                                                          | B-40                      |
|--------------------------------------------------|--------|-----------------|-------------------------------------------------------|----------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| DATE COMF<br>DRILLER:<br>INSPECTOR<br>DRILLING M |        |                 | October 17<br>Advanced I<br>Jonathan E<br>Hollow Ster | Drilling Ind<br>S. Secking |                 | PROJECT: PSE&G: Former Front Stre<br>LOCATION: Newark, New Jersey<br>Killam PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (ft MSL): | el Gas Works              |
| DEPTH                                            | SOL    | SAMPLES         | BLOW                                                  | RECOVERY                   | FIELD           | VISUAL                                                                                                                                                                              | COMMENTS                  |
| -0-                                              | CLASS. | h               | COUNTS                                                | (141)                      | SCREENING (ppm) | DESCRIPTION                                                                                                                                                                         |                           |
| -1-                                              |        |                 |                                                       | 1                          |                 |                                                                                                                                                                                     |                           |
|                                                  |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -2-                                              |        |                 |                                                       | 1                          |                 |                                                                                                                                                                                     |                           |
| 3                                                |        |                 |                                                       | 1                          |                 |                                                                                                                                                                                     |                           |
| +                                                |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -5-                                              |        |                 | 9<br>12                                               | 16                         | 0               | 1-m Sd, I. Sit, t. Grv (Fill) (5 YR 3/4)                                                                                                                                            |                           |
| -5-                                              |        |                 | 18                                                    | 1                          |                 |                                                                                                                                                                                     |                           |
| -7-                                              |        |                 | 13                                                    |                            |                 |                                                                                                                                                                                     |                           |
| -8-                                              |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| .g.                                              |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -10-                                             |        |                 | 9                                                     | 5                          | 0               | 1-m Sd, I. Sit, t. Grv (Fill) (5 YR 3/4)                                                                                                                                            |                           |
| -11-                                             |        | $  \setminus  $ | 8                                                     |                            |                 |                                                                                                                                                                                     |                           |
|                                                  |        |                 | 6                                                     |                            |                 |                                                                                                                                                                                     |                           |
| -12-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -13-                                             |        |                 |                                                       |                            |                 | FILL                                                                                                                                                                                |                           |
| -14-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -15-                                             |        | $\square$       | 14<br>25                                              | 17                         | 0               | f-m-c Sd, a. Grv, I. Sit (Quartzite Pebble) (Fill) (5 YR 3/4)                                                                                                                       |                           |
| -16-                                             |        |                 | 25                                                    |                            |                 |                                                                                                                                                                                     |                           |
| -17.                                             |        | ` <b>\</b>      |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -18-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -19-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -20-                                             | CL     | <u> </u>        | 3                                                     | 10                         | 0               | Cl, I. c. Sd (5 YR 4/4) CLAY                                                                                                                                                        | Moist                     |
| -21-                                             |        |                 | 7 9                                                   | 10                         | 0               | 1 Sd, I. Sh (5 YR 4/4)                                                                                                                                                              |                           |
| -22-                                             |        |                 | 8                                                     |                            | · · · · ·       |                                                                                                                                                                                     |                           |
| 1                                                |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -23-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -24-                                             |        | -               |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -25-                                             |        |                 | 4                                                     | 12                         | 0               | f Sd, I. Sit (5 YR 6/4)                                                                                                                                                             |                           |
| -26-                                             |        |                 | 7                                                     |                            |                 |                                                                                                                                                                                     |                           |
| -27-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -28-                                             | sw     |                 |                                                       |                            |                 | Well Graded SAND and Sitt                                                                                                                                                           |                           |
| -29-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -30-                                             |        | -               | 1                                                     | 19                         | 0               | f Sd, L. Sit (5 YR 4/4)                                                                                                                                                             |                           |
| -31-                                             |        | $  \setminus  $ | 2                                                     |                            |                 |                                                                                                                                                                                     | Wet<br>Samp <del>le</del> |
| -32-                                             |        |                 | 5                                                     |                            |                 |                                                                                                                                                                                     | 31.5-32 ft.               |
| [                                                |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -33-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -34-                                             | •      |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -35-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |
| -36-                                             |        |                 |                                                       |                            |                 |                                                                                                                                                                                     |                           |

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| ■K                                               | illan         | n                      |                                                 | <b></b> .                |                           | BORING LOG<br>(continued) | ······································                                              | LOG                   | :: B-40          |
|--------------------------------------------------|---------------|------------------------|-------------------------------------------------|--------------------------|---------------------------|---------------------------|-------------------------------------------------------------------------------------|-----------------------|------------------|
| DATE COMP<br>DRILLER:<br>INSPECTOR<br>DRILLING M | PLETED:       |                        | October 1<br>Advanced<br>Jonathan<br>Hollow Ste | Dritting Ir<br>B. Seckin |                           |                           | PROJECT:<br>LOCATION:<br>KILLAM PROJECT NU<br>STATE CASE NUMBE<br>LATITUDE/LONGITUD | R: N/A                | itreet Gas Works |
|                                                  | <b>.</b>      |                        | - <u></u>                                       |                          |                           |                           | SURVEYED ELEVATION                                                                  |                       |                  |
| OEPTH<br>(T)                                     | SOIL<br>CLASS | SAMPLES                | BLOW                                            | RECOVER<br>(IN.)         | Y FIELD<br>SCREENING (ppm | ,                         | VISUAL                                                                              |                       | COMMENTS         |
| -35-<br>-36-                                     |               | $\square$              | 1<br>2<br>3<br>5                                | 24                       | O                         | t Sd, L Sk (5 YR 4/4)     |                                                                                     |                       | Wet              |
| -37-                                             |               |                        |                                                 |                          | 1                         | 1                         |                                                                                     |                       |                  |
| -38-<br>-39-                                     |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
|                                                  | ļ             | - <u>k</u>             |                                                 | 1                        |                           |                           |                                                                                     |                       |                  |
| -40-                                             | ML            | $\left  \right\rangle$ | 48                                              | 6                        | 0                         | Sit, t. f Sd (5 YR 4/4)   | SILT                                                                                |                       | Wet              |
| -42-                                             |               | <u>`</u>               | 1                                               |                          | 1                         | End of Boring @ 42        |                                                                                     | · · · · · · · · · · · |                  |
| -43-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -++                                              |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -45-<br>-46-                                     |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
|                                                  |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -47-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -48-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -49-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -50-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -51-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -52-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -53-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -54-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -55-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
|                                                  |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -56-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -57-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -58-                                             |               |                        |                                                 | 1                        |                           |                           |                                                                                     |                       |                  |
| -59-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -60-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -61-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -62-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -63.                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -54-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -65-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     | · _=·                 |                  |
| -66-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
|                                                  |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -67.                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -68-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -69-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -70.                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |
| -71-                                             |               |                        |                                                 |                          |                           |                           |                                                                                     |                       |                  |

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| TE COMPL      | llan           | -            | October 17 | 1998        |                 | PROJECT: PSE&G: Former Front               | Street Gas Works |
|---------------|----------------|--------------|------------|-------------|-----------------|--------------------------------------------|------------------|
| ILLER:        |                |              | Advanced   | Drilling In |                 | LOCATION: Newark, New Jersey               |                  |
| PECTOR:       |                |              | Jonathan E |             | ler.            | KILLAM PROJECT NUMBER: 263709              |                  |
| ILLING ME     |                |              | Hollow Ste | m Auger     |                 | STATE CASE NUMBER: N/A                     |                  |
|               |                | SAMPLES      | BLOW       | RECOVERY    | FIELD           | SURVEYED ELEVATION (# MSL):                | COMMENT          |
| DEPTH<br>(PT) | SOR.<br>CLASS. | Sources      | COUNTS     | (IN)        | SCREENING (pum) | DESCRIPTION                                |                  |
| -0-           |                |              |            |             |                 |                                            |                  |
| -1-           |                |              | <b>—</b>   | }           |                 |                                            |                  |
| -2-           |                |              |            |             |                 |                                            |                  |
| -3-           |                |              |            |             |                 |                                            |                  |
| 4             |                |              |            |             |                 |                                            |                  |
|               |                |              |            | 1           |                 |                                            |                  |
| -5-           |                |              |            | 1           |                 |                                            |                  |
| -6-           |                |              |            |             |                 |                                            |                  |
| -7-           |                |              |            | ]           |                 |                                            |                  |
| -8-           |                |              |            |             |                 |                                            |                  |
| -9-           |                |              |            |             |                 |                                            |                  |
| -10-          |                | <u> </u>     | 13         | 11          | 0               | (-m-c Sd, a. Grv, I. Sit (Fill) (5 YR 3/4) |                  |
| -11-          |                |              | 7          |             |                 |                                            |                  |
|               |                |              | 8          |             |                 | FILL                                       |                  |
| -12-          |                |              |            |             |                 |                                            |                  |
| -13-          |                |              |            |             |                 |                                            |                  |
| -14-          |                |              |            |             |                 |                                            |                  |
| -15-          |                |              |            |             |                 |                                            |                  |
| -16-          |                |              |            |             |                 |                                            |                  |
| -17-          |                |              |            |             |                 |                                            |                  |
| -18-          |                |              |            |             |                 |                                            |                  |
|               |                |              |            |             |                 |                                            |                  |
| -19-          |                |              |            |             |                 |                                            |                  |
| -20-          |                | $\backslash$ | 10         | 11          | 0               | (f-m-c Sd, a Grv, I. Sli (Fill) (5 YR 4/4) |                  |
| -21-          |                |              | 16<br>13   |             |                 |                                            |                  |
| -22-          |                |              |            |             |                 |                                            |                  |
| -23-          |                |              |            |             |                 |                                            |                  |
| -24-          | :              |              |            |             |                 |                                            |                  |
| -25-          | :              |              | 11         | 14          | 0               | f Sd, s. Sit (5 YR 4/4)                    | Moist            |
|               | sw             | $\mathbf{i}$ | 16         |             | v               | Weil Graded SAND and Sitt                  |                  |
| -26-          |                | <u> </u>     | 15<br>16   |             |                 |                                            |                  |
| -27.          |                |              | <u> </u>   |             |                 |                                            |                  |
| -28-          |                |              |            |             |                 | ·                                          |                  |
| -29-          |                |              | ·          |             |                 |                                            |                  |
| .30.          |                |              | 5          | 14          |                 | f Sd. s. Sk (5 YR 4/4)                     | Sample           |
| -31-          | ML             |              | 10<br>17   | 4           | 0               | SN (5 YR 4/4)<br>SILT                      | 30-30.5 ft.      |
| -32-          |                |              | 27         |             |                 | End of Bonng @ 31'                         |                  |
|               |                |              |            |             |                 |                                            |                  |
| -33-          |                |              |            |             |                 |                                            |                  |
| -34-          |                |              |            |             |                 |                                            |                  |
| -35-          |                |              |            |             |                 |                                            |                  |
| -36-          |                |              |            |             |                 |                                            |                  |

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| UNIC COMPLETED         Newsee 1, 1985         Memory 1, 1985         PROJECT         Media from Start Gal Work           MELTER         Advector Mining Suscender         UCATION         Media from Start Gal Work         UCATION           MELTER         Media from Start Gal Work         UCATION         Media from Start Gal Work         UCATION           MELTER         Media from Start Gal Work         UCATION         Media from Start Gal Work         UCATION           MILES METON         Media from Start Gal Work         UCATION         Media from Start Gal Work         UCATION           Mile Berling Media         Media from Start Gal Work         Media from Start Gal Work         UCATION         Media from Start Gal Work         UCATION           Mile Control         Media from Start Gal Work         Media from Start Gal Work         Media from Start Gal Work         UCATION         Media from Start Gal Work         UCATION           Mile Control         Media from Start Gal Work         UCATION           Mile Control         Media from Start Gal Work           Mile Control         Media from Start Gal Work         Media from Start Gal Work         Media from Start Gal Work                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <sup>n</sup> ≰K                  | illar          | $\mathbf{n}$                 |                        |                         |               | BORING LOG                                 |                                              | LOG: B-42                             | ٦       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------|------------------------------|------------------------|-------------------------|---------------|--------------------------------------------|----------------------------------------------|---------------------------------------|---------|
| Market         Market         Barket         Market         Barket         Market         Barket         Market         Description         Description <thdescription< th=""> <thdescription< th=""> <thdescri< td=""><td>DATE COM<br/>DRILLER:<br/>INSPECTO</td><td>IPLETED:<br/>R:</td><td></td><td>Advanced<br/>Jonathan i</td><td>Drilling I<br/>B. Seckir</td><td>Incoporated</td><td></td><td>сзау</td><td></td></thdescri<></thdescription<></thdescription<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DATE COM<br>DRILLER:<br>INSPECTO | IPLETED:<br>R: |                              | Advanced<br>Jonathan i | Drilling I<br>B. Seckir | Incoporated   |                                            | сзау                                         |                                       |         |
| Image of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of the second part of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                  |                |                              |                        |                         |               |                                            | LATITUDE/LONGITUDE:                          | · · · · · · · · · · · · · · · · · · · |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                                |                | SAMPLES                      |                        |                         |               |                                            | VISUAL                                       | COMMENTS                              |         |
| 2       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |                |                              | COUNTS                 | ( (PR))                 | SCREENING (pp | ***                                        | DESCRIPTION                                  |                                       |         |
| 2       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -1-                              |                |                              |                        | 4                       |               |                                            |                                              |                                       |         |
| 3       2       0       Interesting a Ger, LSII (Fill) (5 YR 44)         3       2       0       Interesting a Ger, LSII (Fill) (5 YR 44)         4       3       2       0         3       2       0       Interesting a Ger, LSII (Fill) (5 YR 44)         4       3       0       0         10       2       10       0         11       3       0       0         12       10       0       bit (A docer, bytes (Fill) (15 YR 62)         13       3       0       0         14       0       0       Sit (5YR 65)         15       10       0       Sit (5YR 65)         16       1       0       Sit (5YR 65)         16       1       0       Sit (5YR 65)         17       0       Interesting Sit (SYR 66)       Percined - Wer         18       5       1       0       Interesting Sit (SYR 66)         18       1       0       Sit (SYR 66)       Percined - Wer         19       10       1       1       Sit (SYR 66)         10       1       1       1       1       Sit (SYR 66)         10       1       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                  |                | 1                            |                        | 1                       |               |                                            |                                              |                                       |         |
| a       a       a       b       b       a       a       a         3 $\frac{1}{2}$ $2$ $0$ fmc 5d. 4. Gev. L St (FH) (5 YR 44)       FIL.         3 $\frac{1}{2}$ $2$ $0$ fmc 5d. 4. Gev. L St (FH) (5 YR 44)       FIL.         4 $\frac{1}{2}$ $16$ $0$ mode 4. conc. Lynes (FB) (10 YR 52)       FIL.         10 $\frac{1}{2}$ $16$ $0$ mode 4. conc. Lynes (FB) (10 YR 52)       SLT         11 $\frac{1}{2}$ $16$ $0$ SLT       SLT       SLT         12 $\frac{1}{2}$ $0$ SL (YR 50)       SLT       Dev. Tool. SUC         13 $\frac{1}{2}$ $0$ SL (YR 50)       Dev. Tool. SUC       Dev. Tool. SUC         14 $\frac{1}{2}$ $0$ SL (YR 50)       Pandy Gradel SAND and SUC       Dev. Tool. Wei         15 $\frac{1}{2}$ $0$ SL (YR 50)       Hmc 5d. 1 Gev(1 YR 64)       Dev. Tool. SUC         15 $\frac{1}{2}$ $0$ SL (YR 50)       Hmc 5d. 1 Gev(2 YR 64)       Dev. Tool. SUC         16 $\frac{1}{2}$ $16$ $21$ ISC (ST 64)       Dev. SUC (ST 7)         16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -2-                              |                |                              | }                      | $\{$                    |               |                                            |                                              |                                       |         |
| 4 $3$ $2$ $0$ $4$ $6$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ $10/2$ </td <td>-3-</td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -3-                              |                |                              |                        | 1                       |               |                                            |                                              |                                       |         |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 4                                |                |                              |                        | 1                       |               |                                            |                                              |                                       |         |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | .5.                              |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| $J_{1}$ $2$ $I$ $I$ $4$ $3$ $10$ $0$ brisk 4 conc. (pms. (Fil) (10°R 57) $10$ $3$ $10$ $0$ brisk 4 conc. (pms. (Fil) (10°R 57) $11$ $3$ $10$ $0$ brisk 4 conc. (pms. (Fil) (10°R 57) $11$ $3$ $10$ $0$ brisk 4 conc. (pms. (Fil) (10°R 57) $11$ $3$ $10$ $0$ $517$ $517$ $116$ $10$ $10$ $512$ (5°R 540) $517$ $116$ $13$ $0$ $154$ $517$ (540) $100$ $116$ $133$ $0$ $154$ $517$ (540) $100$ $116$ $13$ $0$ $154$ $517$ (540) $100$ $116$ $131$ $0$ $154$ $151$ $100$ $116$ $100$ $100$ (517 644) $100$ $116$ $100$ $100$ $100$ $116$ $100$ $100$ $100$ $116$ $100$ $100$ $100$ $116$ $100$ $100$ $100$ $116$ $100$ $100$ $116$ $100$ $100$ $100$ $100$ $1000$ $10$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                  |                |                              | 3                      | •                       |               | 141FC 30, a. GIV, I. SIL (FIII) (5 TR 4/4) |                                              |                                       |         |
| $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ $I_{11}$ $I_{12}$ <t< td=""><td></td><td></td><td></td><td></td><td>{</td><td></td><td></td><td></td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                  |                |                              |                        | {                       |               |                                            |                                              |                                       |         |
| a.       a.       b.       b. <t< td=""><td>•7-</td><td></td><td></td><td>l</td><td></td><td>1</td><td></td><td>FILL</td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | •7-                              |                |                              | l                      |                         | 1             |                                            | FILL                                         |                                       |         |
| 10 $3$ 10 $0$ brick & conc. (gms. (Fil) (10YR 6/2)         11 $3$ $0$ $0$ brick & conc. (gms. (Fil) (10YR 6/2)         13 $4$ $0$ $5$ $5$ $5$ $5$ 14 $0$ $2$ $0$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -8-                              |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| 10 $3$ 10 $0$ brick & conc. (gms. (Fil) (10YR 6/2)         11 $3$ $0$ $0$ brick & conc. (gms. (Fil) (10YR 6/2)         13 $4$ $0$ $5$ $5$ $5$ $5$ 14 $0$ $2$ $0$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ $5$ <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -9-                              |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| 11. $2$ $3$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$ $1$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                  |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| 11.     2       13.     14.       14.     17.       15.     ML       16.     10       9     1       17.     0       18.     SW       19.     Nu       19.     Nu       19.     10       10.     10       10.     10       11.     10       12.     11.       13.     7       14.     11.       15.     SU SUST       16.     13.       17.     1.       18.     SW       19.     10.       19.     11.       19.     11.       10.     11.       11.     11.       12.     11.       13.     7       14.     11.       15.     15.1 St.       16.     16.       17.     15.1 St.       18.1 St.     St. St. St.       19.     11.       11.     11.       12.     11.       13.     11.       14.     11.       15.1 St.     St. St. St.       16.1 St.     St. St. St.       17.     11. <tr< td=""><td>-10-</td><td></td><td></td><td></td><td>10</td><td>0</td><td>brick &amp; conc. fgmts (Fill) (10YR 6/2)</td><td></td><td></td><td></td></tr<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -10-                             |                |                              |                        | 10                      | 0             | brick & conc. fgmts (Fill) (10YR 6/2)      |                                              |                                       |         |
| 12       Image: Superstand Sample       Superstand Sample       Superstand Sample       Superstand Sample         13       ML       12       7       0       Superstand Sample       Perchad       Perchad         16       9       10       15d a Still (SVR 56)       Well Graded SAND and Still       Perchad       Perchad       Well         18       SVV       8       4       0       15d a Still (SVR 56)       Perchad       Perchad       Well         18       SVV       132       7       0       15d a Still (SVR 56)       Perchad       Perchad       Well         21       5P       132       7       0       15d a Still (SVR 44)       Poorly Graded SAND with Gravel       Dry         22       6       18       21       15d, 1 Sti       Sample       (20 S-27)         23       11       11       11       11       11       (20 S-27)       (20 S-27)         24       9       18       21       15d, a Still (SYR 44)       Well Graded SAND and Still       Vel         25       16       13       0       15d, a Still (SYR 44)       Still T       Vel         33       14       0       5trll (SYR 44)       Poorty Graded SAND and Stil                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -11-                             | 1              |                              | 3                      |                         |               |                                            |                                              |                                       |         |
| International state       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -12-                             |                |                              | 4                      |                         |               | -                                          |                                              |                                       |         |
| International state       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State       State                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | .12                              |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| 13-       ML $\frac{12}{12}$ 7       0       Sill (SYR 56)       Sill T         16-       9       9       9       9       9       9       9       9         11-       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       9       15d. 1 St       St       Sample105 St       527       9       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10       10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                | 1                            |                        |                         | [             |                                            |                                              |                                       |         |
| HL     12     7     0     Sit (SYR 5/6)       16     9     0     Sit (SYR 5/6)       17.     1     1     1       18     SW     1     Sit (SYR 5/6)       18     SW     1     Sit (SYR 5/6)       20     8     4     0       13     7     0     1       14     SP     1     1       22     5P     1     1       23     5P     1     1       24     5P     1     1       25     5     16     21       17     1     1       24     5     16       25     5     16       26     9     16       27     0     1       28     5W     1       29     1     1       31     20     0       32     1     1       33     1     1       34     ML     5       35     13     0       36     5P     13       37     1       38     1       39     1       33     1       34     1       35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -14-                             |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| 17.     18.     SW     Well Graded SAND and Silt       18.     SW     ISd. a. Sil (SYR 56)     Parched - Wel       26.     6     4     0     ISd. a. Sil (SYR 4/4)       22.     SP     ISd. a. Sil (SYR 4/4)     Poorly Graded SAND with Gravel       23.     5     18     21     ISd. 1. Sil       24.     5     18     21     ISd. 1. Sil       25.     5     18     21     ISd. 1. Sil       26.     5     18     21     ISd. 1. Sil       26.     5     18     21     ISd. 1. Sil       26.     5     18     21     ISd. 1. Sil       27.     11     1     1       28.     SW     19     10       29.     16     20     0     I Sd. a. Sil (SYR 4/4)       29.     19     20     1     Sil (SYR 4/4)       29.     19     10     Sil (SYR 4/4)       30.     15     10     0       31.     15     10     Sil (SYR 4/4)       32.     15     10     Sil (SYR 4/4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -15-                             | ML             |                              |                        | 7                       | 0             | Silt (5YR 5/6)                             | SALI                                         |                                       |         |
| 117.     9     Well Graded SAND and Sitt       18     SW     ISd a St (SYR 56)       20     8     4     0       13     7     0       14     13     7       22     SP     Immed St I Gav (S YR 4/4)       23     9     Immed St I Gav (S YR 4/4)       24     9     Immed St I Gav (S YR 4/4)       25     8     18       26     9     1       27     9     1       28     9     1       29     8     18       21     11       22     8     18       23     9       24     9       25     9       26     11       27     11       28     18       29     15       20     15       21     11       22     20       23     15       24     27       25     20       26     15       27     10       28     16       29     15       20     15       21     15       22     20       23     15       24                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -16-                             |                |                              |                        |                         |               |                                            |                                              |                                       | <u></u> |
| 13.     SW     Weil Graded SAND and Sitt       20.     0     4     0       13.     7     0       13.     7     0       13.     7     0       13.     7     0       13.     7     0       13.     7     0       13.     7     0       14.     13.     7       15.     13.     7       13.     7     0       14.     13.     7       15.     18     2.1       14.     11     1       15.     18     2.1       16.     18     2.1       17.     18     18       18.     18     2.1       19.     15.     15.       10.     15.     15.       11.     1     1       12.     16     20       13.     16     20       14.     17       15.     13     0       15.     13     0       15.     13     0       15.     13     0       16.     20     0       15.     13     0       16.     10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | .17.                             |                |                              | 9                      |                         |               |                                            |                                              |                                       | 1       |
| SW         Well Graded SAND and Sitt           20         6         4         0         ISG a SH (SYR 56)         Perched - Well           21         31         7         0         ISG a SH (SYR 56)         Dry           22         SP         13         7         0         Inc Sd. I. Grv (S YR 4/4)         Dry           22         SP         1         1         1         Dry         Dry           23         1         1         1         1         Dry         Dry           24         9         1         1         SH         Sample         Sample           24         9         1         1         Sample         Sample         Sample           25         9         1         1         Sample         Sample         Sample           26         9         1         Sample         Sample         Sample         Sample           26         9         1         Sample         Sample         Vel         Sample           27         1         1         1         Sample         Vel         Sample         Vel           31         20         0         1         Sal. a Sti (SYR 4/4) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>]</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                  |                |                              |                        |                         |               |                                            |                                              |                                       | ]       |
| 13     13     13     13     13     13     13     13     13     13     13     13     13     13     14     15     13     17     0     15     13     17     0     15     13     17     0     15     13     17     0     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     11     1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -18-                             | sw             |                              |                        |                         |               |                                            |                                              |                                       |         |
| 21.     13     7     0     100 a Gin Vin del)     Perched - Wet       22.     SP     13     7     0     Imc Sd, L Grv (S YR 4/4)     Dry       22.     SP     12     13     7     0     Imc Sd, L Grv (S YR 4/4)     Dry       23.     6     18     21     1 Sd, I Sh     Poorly Graded SAND with Gravel     Dry       24.     6     18     21     1 Sd, I Sh     Sample     Sample       25.     6     18     21     1 Sd, I Sh     Sample     Sample       25.     6     18     21     1 Sd, I Sh     Sample     Sample       26.     9     11     1     Sample     Sample     Sample       27.     11     11     1     Sample     Sample     Sample       28.     SW     15     20     0     1 Sd, a Sh (SYR 4/4)     Wet       31.     30     37     37     Sh (SYR 4/4)     Sh (SYR 4/4)     Wet       32.     15     13     0     Sit (SYR 4/4)     Sh (SYR 4/4)     Sh (SYR 4/4)       34.     51     13     0     Sit (SYR 4/4)     Poorly Graded SAND and Gravel       34.     54     57     57     Sh (SYR 4/4)     Poorly Graded S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -19-                             |                |                              |                        |                         |               | Well Gra                                   | ded SAND and Silt                            |                                       |         |
| 21.     13     7     0     Imc Sd, I. Grv (S YR 4/4)     Perched - Wel       22.     SP     1     1     1     Dry       23.     SP     1     1     1     Dry       24.     SP     1     Sd, I. Grv (S YR 4/4)     Poorly Graded SAND with Gravel       25.     S     S     16     21     1       26.     9     1     1     Smple     (26, 5-27)       28.     SW     1     Sd, I. Sit     Sample     (26, 5-27)       29.     SW     1     Sd, I. Sit (SYR 4/4)     Well Graded SAND and Sitt       31.     22.     0     1     Sd, a. Sit (SYR 4/4)     Well       31.     32.     Sitt (SYR 4/4)     Sit (SYR 4/4)     Sit (SYR 4/4)       34.     ML     15     13     0     Sitt (SYR 4/4)       34.     SP     4     0     Imc Sd, a. Grv (Till) (SYR 4/4)     Poorly Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and Graded SAND and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | -20-                             |                |                              | 6                      |                         | 0             |                                            |                                              |                                       | ]       |
| 22.     SP     12       23.     11       24.     6       25.     6       9     11       11     11       11     11       11     11       11     11       11     11       11     11       11     11       12.     15       13.     16       20.     0       15.     15.       30.     30.       31.     37.       32.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15.       13.     15. <td>21</td> <td></td> <td><math>  \setminus  </math></td> <td>13</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 21                               |                | $  \setminus  $              | 13                     |                         |               |                                            |                                              |                                       |         |
| 23     8     18     21     I Sd, I Sit       24     9     11     13     15     20       26     11     11     13     15     120       27     11     13     0     15     20       28     SW     15     20     0     1 Sd, a Sit (SYR 4/4)       30     37     30     15     20       31     30     37     13     0       34     ML     13     0     5it (SYR 4/4)       36     SP     43     4     0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -21-                             |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| -24.     -34.     -34.     -36.     -36.     -36.     -36.     -36.     -36.     -36.     -36.     -36.     -36.     -36.     -36.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.     -37.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -22-                             | SP             |                              |                        |                         |               | Poorty Grad                                | ed SAND with Gravel                          |                                       | 1       |
| 25-     8     18     21     f Sd, 1 Sit       26-     11     1     1       27-     11     1       28-     SW     1       30-     16     20       27-     1       30-     16       20     0       31-     22       30-     16       27     37       33-     37       33-     37       33-     15       33-     15       34-     ML       35-     15       43     4       9     110       100     110 (SYR 4/4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -23-                             |                |                              |                        |                         |               |                                            |                                              |                                       |         |
| -26-     -27-     -11     -28-     SW     Sample (26.5-27)       -29-     5W     -29-     -20-     0     1 Sd, a Sit (SYR 4/4)       -30-     -16-     20-     0     1 Sd, a Sit (SYR 4/4)       -31-     -32-     -37-     -37-       -33-     -34-     -4-     -56-       SP     -43-     4     0       -36-     SP     -43-     4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -24-                             |                | -                            |                        |                         |               |                                            |                                              |                                       |         |
| -26-     -27-     -11     -28-     SW     Sample (26.5-27)       -29-     5W     -29-     -20-     0     1 Sd, a Sit (SYR 4/4)       -30-     -16-     20-     0     1 Sd, a Sit (SYR 4/4)       -31-     -32-     -37-     -37-       -33-     -34-     -4-     -56-       SP     -43-     4     0       -36-     SP     -43-     4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 76                               |                | Ļ                            |                        |                         |               |                                            |                                              |                                       | Í       |
| -27.     -28.     SW     -11.     Sample (26.5-27)       -29.     SW     -16.     20.     0     1 Sd. a Sit (SYR 4/4)       -30.     -16.     20.     0     1 Sd. a Sit (SYR 4/4)       -31.     -32.     -33.     -37.     -37.       -33.     -34.     ML                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                  |                |                              |                        | 18                      | 2.1           | r Sd, I. Sit                               |                                              |                                       |         |
| -27.     -28.     SW     -29.     SW     -29.     Well Graded SAND and Silt     (26.5-27)       -30.     16.     20.     0     1 Sd. a. Sit (SYR 4/4)     Well       -31.     30.     37.     -       -32.     37.     -     -       -33.     -     -     -       -34.     ML     15.     13.     0       -35.     SP     43.     4.     0       -36.     SP     43.     4.     0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | -26-                             |                |                              |                        |                         |               |                                            |                                              | Sample                                |         |
| -28-     SW     Weil Graded SAND and Sitt       -29-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -27.                             |                |                              |                        |                         |               |                                            |                                              | (26.5-27')                            |         |
| -29-     -30-     16     20     0     1 Sd. a Sit (SYR 4/4)       -31-     -32-     -37     -37       -32-     -37     -37       -34-     ML     -31       -35-     15     13       -36-     SP     43       4     0       1fmc Sd, a. Gry (Till) (SYR 4/4)     Poorly Graded SAND and Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -28-                             |                | F                            |                        |                         |               |                                            | ·                                            |                                       |         |
| -30-<br>-31-<br>-31-<br>-32-<br>-33-<br>-34-<br>-35-<br>-36-<br>SP<br>-30-<br>-30-<br>-30-<br>-30-<br>-31-<br>-32-<br>-33-<br>-34-<br>-35-<br>-36-<br>SP<br>-43<br>-4<br>-4<br>-4<br>-4<br>-4<br>-4<br>-4<br>-4<br>-4<br>-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | .20                              | sw             |                              |                        |                         |               | Well Grad                                  | led SAND and Silt                            |                                       | 1       |
| 31.     32     33       -32.     -33       -34.     ML       -35.     15       16     13       0     1/5/4/4)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Í                                |                | ŀ                            |                        |                         |               |                                            |                                              |                                       |         |
| -31.<br>-32.<br>-33.<br>-34.<br>-35.<br>-36.<br>SP<br>-37<br>-30<br>-30<br>-37<br>-37<br>-37<br>-37<br>-37<br>-37<br>-37<br>-37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -30-                             | ſ              | $\setminus \top$             |                        | 20                      | Ú             | f Sd, a. Sit (5YR 4/4)                     |                                              | Wet                                   |         |
| -32-<br>-33-<br>-34.<br>-35.<br>-36.<br>SP<br>-37.<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38.<br>SP<br>-38. | -31-                             |                |                              | 30                     |                         |               |                                            |                                              |                                       |         |
| -34.<br>-35.<br>-36. SP 15 13 0 Silt (5YR 4/4) S/LT<br>-36. SP 16 43 4 0 f-mc Sd, a. Grv (Till) (5YR 4/4) Poorly Graded SAND and Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -32.                             | -              |                              | 37                     |                         |               |                                            |                                              |                                       |         |
| -34.<br>-35.<br>-36. SP 15 13 0 Silt (5YR 4/4) S/LT<br>-36. SP 16 43 4 0 f-mc Sd, a. Grv (Till) (5YR 4/4) Poorly Graded SAND and Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                  |                | Ļ                            |                        |                         |               |                                            |                                              |                                       |         |
| -35-<br>-36- SP 43 4 0 1-m-c Sd, a. Grv (Till) (5YR 4/4)<br>-36- SP 43 4 0 1-m-c Sd, a. Grv (Till) (5YR 4/4)<br>Poporty Graded SAND and Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                  |                | ŀ                            |                        |                         |               |                                            |                                              |                                       |         |
| -35-<br>-36- SP 15 13 0 Silt (SYR 4/4)<br>-36- SP 43 4 0 1-m-c Sd, a. Grv (Till) (SYR 4/4)<br>Poorly Graded SAND and Council                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -34-                             | ML             | F                            |                        |                         |               |                                            |                                              |                                       |         |
| -36- SP 15<br>43 4 0 (-m-c Sd, a. Grv (Till) (5YR 4/4) Poorty Graded SAND and Cravel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | -35-                             | ···-           | $\overline{}$                |                        | 13                      | 0             | Sill (5YR 4/4)                             | SILT                                         |                                       |         |
| POORV Graded SAND and Central                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -36-                             | SP             | $ \setminus $ $ \downarrow $ |                        |                         |               |                                            |                                              |                                       |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1                                |                |                              |                        |                         |               | End of                                     | Poorly Graded SAND and Gravel<br>Boring @ 37 |                                       |         |

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K VENG US37091LOGSVB-41

| ™Kil                                                  | llan  | 1            |                                                  |                           |                 | BORING LOG                                                                                                                                                          | LOG: 8-43      |
|-------------------------------------------------------|-------|--------------|--------------------------------------------------|---------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| DATE COMPLE<br>DRILLER:<br>INSPECTOR:<br>DRILLING MET | ETED: | I            | November<br>Advanced<br>Jonathan E<br>Hollow Ste | Drilling In<br>3. Secking |                 | PROJECT: PSE&G: Former<br>LOCATION: Newark, New Je<br>KILLAM PROJECT NUMBER: 26370<br>STATE CASE NUMBER: N/A<br>LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (ft MSL): | -              |
| DEFTH                                                 | SOL   | SAMPLES      | BLOW                                             | RECOVERY                  |                 | VISUAL<br>DESCRIPTION                                                                                                                                               | COMMENTS       |
| -0-                                                   | CLASS |              | COUNTS                                           | (111)                     | SCREENING (ppm) | DESCRIPTION                                                                                                                                                         |                |
|                                                       |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -1-                                                   |       |              |                                                  | 1                         |                 |                                                                                                                                                                     |                |
| -2-                                                   |       |              |                                                  | 1                         |                 |                                                                                                                                                                     |                |
| -3-                                                   |       |              |                                                  | 1                         |                 |                                                                                                                                                                     |                |
| -                                                     |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -5-                                                   |       |              | 5                                                | 20                        | 0               | 1 Sd, L Sit (SYR 6/4)                                                                                                                                               |                |
| 1                                                     |       |              | 5                                                |                           |                 |                                                                                                                                                                     |                |
| -6-                                                   |       |              | 6                                                | 1                         |                 |                                                                                                                                                                     |                |
| -7-                                                   | 1     |              |                                                  | 1                         |                 |                                                                                                                                                                     |                |
| -8-                                                   |       |              |                                                  | 1                         |                 |                                                                                                                                                                     |                |
| -9-                                                   | sw    |              |                                                  | 1                         |                 | Well Graded SAND and Sitt                                                                                                                                           |                |
| -10-                                                  |       |              | 9                                                | 16                        | 0               | f Sd, I. SII (5YR 4/4)                                                                                                                                              |                |
|                                                       | [     | $\mathbf{X}$ | 9                                                | 1                         |                 |                                                                                                                                                                     |                |
| -11-                                                  |       |              | 13                                               |                           |                 |                                                                                                                                                                     | Wet @ 11.5     |
| -12-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -13-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -14-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -15-                                                  |       |              | 13                                               | 18                        | 8.6             | f Sd, a. Sit (5YR 3/2)                                                                                                                                              | Visible Produc |
|                                                       |       |              | 15                                               |                           | 0.0             |                                                                                                                                                                     |                |
| -16-                                                  |       |              | 17<br>20                                         |                           |                 |                                                                                                                                                                     |                |
| -17-                                                  |       |              | 18<br>23                                         | 21                        |                 | 1 Sd a. Sk (5YR 4/4)                                                                                                                                                |                |
| -18-                                                  |       |              | 26                                               |                           |                 | SH. L / Sd (5YR 4/6) SILT                                                                                                                                           |                |
| -19-                                                  | ML    |              | 30                                               | 1                         | ·               | Sit, t. / Sd (5YR 4/6)         SiLT           End of Boring @ 19'                                                                                                   |                |
| -20-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| 1                                                     |       | Ì            |                                                  |                           |                 |                                                                                                                                                                     |                |
| -21-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -22-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     | 1              |
| -23-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -24-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -25-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -26-                                                  |       | ļ            |                                                  |                           |                 |                                                                                                                                                                     |                |
| 1                                                     |       | ļ            |                                                  |                           |                 |                                                                                                                                                                     |                |
| -27-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -28-                                                  | .     | ļ            |                                                  |                           |                 |                                                                                                                                                                     |                |
| -29-                                                  |       | ļ            |                                                  |                           |                 |                                                                                                                                                                     |                |
| -30-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -31-                                                  |       | ŀ            |                                                  |                           |                 |                                                                                                                                                                     |                |
|                                                       |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -32-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -33-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -34-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -35-                                                  |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |
| -36-                                                  |       | ſ            |                                                  |                           |                 |                                                                                                                                                                     |                |
|                                                       |       |              |                                                  |                           |                 |                                                                                                                                                                     |                |

K 1ENG 283709L 0G\$18-43

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| ™Ki           | Killam        |              |                |          |                         | BORING LOG                            | LOG: B-44                   |                                       |
|---------------|---------------|--------------|----------------|----------|-------------------------|---------------------------------------|-----------------------------|---------------------------------------|
| DATE COMP     |               |              | November       |          |                         |                                       | PROJECT: PSE&G: F           | ormer Front Street Gas Works          |
| ORILLER:      |               |              |                |          | ncoporated              |                                       | LOCATION: Newark, N         |                                       |
| NSPECTOR:     |               |              | Jonathan i     |          | -                       |                                       |                             | 263709                                |
| DRILLING ME   | ETHOD:        |              | Hollow Ste     | em Auger | <u>_</u>                | · · · · · · · · · · · · · · · · · · · | STATE CASE NUMBER: N/A      |                                       |
|               |               |              |                |          | ,                       | · · · · · · · · · · · · · · · · · · · | SURVEYED ELEVATION (# MSL): |                                       |
| DEPTH<br>(FT) | SOR.<br>CLASS | SAMPLES      | BLOW<br>COUNTS | RECOVERY | FIELD<br>SCREENING (ppm |                                       | VISUAL                      | COMMENTS                              |
| -0-           |               |              |                |          | Current a gan           | · · · · · · · · · · · · · · · · · · · | DESCRIPTION                 | ······                                |
| -1-           |               |              |                | -{       |                         |                                       |                             |                                       |
|               | 1             |              |                | 1        |                         |                                       |                             |                                       |
| -2-           |               | Į            |                | 4        |                         |                                       |                             |                                       |
| -3-           |               | 1            |                | 1        |                         |                                       |                             |                                       |
| 4             |               |              |                | -        |                         | •                                     |                             |                                       |
| -             |               |              |                | 1        |                         |                                       |                             |                                       |
| -5-           |               | $\land$      | 4              | 19       | 0                       | f Sd, t. Sit (5YR 6/4)                |                             |                                       |
| -6-           |               |              | 5              | 1        |                         |                                       |                             |                                       |
|               |               |              | 4              | ļ        |                         |                                       |                             |                                       |
| -7-           |               | 1            |                |          |                         | 1                                     |                             |                                       |
| -8-           |               | 1            |                | ]        |                         | 1                                     |                             |                                       |
| -9-           | sw            |              |                | 1 1      | 1                       | Well Gra                              | ded SAND and Silt           |                                       |
|               |               | Ļ            |                | 1        |                         |                                       |                             |                                       |
| -10-          |               | $\mathbf{X}$ | 7              | 17       | 0                       | f Sd, t. Sit (5YR 6/4)                |                             |                                       |
| -11-          |               |              | 4              | 1        |                         |                                       |                             | Wet @ 11'                             |
| -12-          |               |              | 3              |          | · · · · · ·             |                                       |                             |                                       |
|               |               |              |                |          |                         |                                       |                             |                                       |
| -13-          |               |              |                |          |                         |                                       |                             |                                       |
| -14-          |               |              |                | 1        |                         |                                       |                             |                                       |
| -15-          |               | <u></u>      | 10             | 18       | 12.9                    | 1 SH 1 SH (5VD 4/4)                   |                             | _                                     |
|               |               |              | 13             |          | 12.3                    | f Sd, I. Sli (5YR 4/4)                |                             | Sheen                                 |
| -16-          |               |              | 14             |          |                         |                                       |                             | 1                                     |
| -17-          |               |              | 23             | 20       | 43                      | f Sd a. Sit (5YR 4/4)                 |                             | Product                               |
| -18-          |               |              | 35             |          |                         |                                       |                             | Tiouse                                |
| -10-          |               |              | 40             |          |                         |                                       |                             |                                       |
| -19-          | SP            |              | 33             | 8        | 8.6                     | shale fgmts - f-m Sd, a. Sft (Till)   |                             | · · · · · · · · · · · · · · · · · · · |
| ·20-          | <u> </u>      | <u> </u>     | _50/4          |          |                         | End of Boring @ 20"                   | ided SAND and Silt          |                                       |
| 21            |               |              | ]              |          |                         |                                       |                             |                                       |
| -21-          |               |              |                |          |                         |                                       |                             |                                       |
| -22-          |               |              |                |          |                         |                                       |                             |                                       |
| -23-          |               |              |                |          |                         |                                       |                             |                                       |
|               |               |              |                |          |                         |                                       |                             |                                       |
| -24-          |               |              |                |          |                         |                                       |                             |                                       |
| -25-          |               |              |                |          |                         |                                       |                             |                                       |
| -26-          |               |              |                |          |                         |                                       |                             |                                       |
|               |               | ļ            |                | ļ        |                         |                                       |                             |                                       |
| -27-          |               | }            | <u> </u>       |          |                         |                                       |                             |                                       |
| -28-          |               | į.           |                |          |                         |                                       |                             |                                       |
| -29-          |               | r            |                |          |                         |                                       |                             | -                                     |
|               |               |              |                |          |                         |                                       |                             |                                       |
| -30-          | 1             |              |                |          |                         |                                       |                             |                                       |
| -31.          |               | ŀ            |                |          |                         |                                       |                             |                                       |
| -32-          | ļ             | ļ            |                |          |                         |                                       |                             |                                       |
|               | 1             | ŀ            |                |          |                         |                                       |                             |                                       |
| -33-          | Ì             | ĥ            |                |          |                         |                                       |                             |                                       |
| -34-          |               | ŀ            |                |          |                         |                                       |                             |                                       |
|               |               | ļ            |                |          |                         |                                       |                             |                                       |
| nc 1          |               | 1            |                | I        | 1                       |                                       |                             |                                       |
| -35-          |               | t            |                |          |                         |                                       |                             | Ē                                     |

K VENG 2837094.0G518-44

| ¤Ki                                                | llan  | $\mathbf{n}$       |                                                  |                          |                  |                                                                                                                | S: B-45                                                                                 |  |  |  |
|----------------------------------------------------|-------|--------------------|--------------------------------------------------|--------------------------|------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--|--|--|
| DATE COMP<br>DRILLER:<br>INSPECTOR:<br>DRILLING ME |       |                    | November<br>Advanced<br>Jonathan E<br>Hollow Ste | Drilling Ir<br>3. Seckin | coporated<br>ger | LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A<br>LATITUDE/LONGITUDE: | LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A |  |  |  |
| DEPTH                                              | SOIL. | SAMPLES            | BLOW                                             | RECOVER                  | FIELD            | VISIAL                                                                                                         | COMMENTS                                                                                |  |  |  |
| <u>-</u>                                           | CLASS | <u> </u>           | COUNTS                                           | (IN.)                    | SCREENING (pom)  | DESCRIPTION                                                                                                    |                                                                                         |  |  |  |
|                                                    |       |                    |                                                  | 1                        |                  |                                                                                                                |                                                                                         |  |  |  |
| -1-                                                |       | -                  |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -2-                                                |       |                    |                                                  | 1                        |                  |                                                                                                                |                                                                                         |  |  |  |
| -3-                                                |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -                                                  |       |                    |                                                  | 4                        | 1                |                                                                                                                |                                                                                         |  |  |  |
|                                                    |       |                    |                                                  | <u> </u>                 |                  |                                                                                                                | in the inst                                                                             |  |  |  |
| -5-                                                |       |                    | 3                                                | 2                        | •                | f-m-c Sd, a. Grv (5Y 2/1) (Fill)                                                                               | insufficient<br>sample volum                                                            |  |  |  |
| -6-                                                |       | $  \setminus$      | 5                                                |                          |                  |                                                                                                                | -strong MGP<br>odor                                                                     |  |  |  |
| -7.                                                |       | $\sim$             | 15                                               | 6                        | ٥                | Wood/Bricks (5Y 2/1) (Fill)                                                                                    | slight odor                                                                             |  |  |  |
| -8-                                                |       |                    | 32                                               | 7                        | o                | wthrd concrete (5YR 8/4) (Fill)                                                                                |                                                                                         |  |  |  |
|                                                    |       | $ \rightarrow $    | · [                                              | 1                        |                  | 4                                                                                                              |                                                                                         |  |  |  |
| -9-                                                |       |                    |                                                  | 1                        |                  |                                                                                                                |                                                                                         |  |  |  |
| -10-                                               |       |                    |                                                  | ł                        |                  |                                                                                                                | spoon refusal                                                                           |  |  |  |
| -11-                                               |       |                    |                                                  |                          |                  |                                                                                                                | Wet @ 11'                                                                               |  |  |  |
| -12-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -13-                                               |       |                    |                                                  | }                        |                  |                                                                                                                |                                                                                         |  |  |  |
| -14-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
|                                                    |       | ļ                  | <u></u>                                          |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -15-                                               |       |                    | 5                                                | 6                        | 2.1              | f-m-c Sd, a. Grv, I. Slt (SYR 3/2) (Fill)                                                                      | Wet - Odor<br>Samp <del>le</del> @                                                      |  |  |  |
| -16-                                               |       |                    | 5                                                |                          |                  |                                                                                                                | 16-16.5                                                                                 |  |  |  |
| -17-                                               |       | $\vdash$           | 3                                                | 10                       | ō                | f-m-c Sd, I. Grv, I. Sit (5YR 3/2) (Fill)                                                                      |                                                                                         |  |  |  |
| -18-                                               |       |                    | 3 4                                              | a                        | o                | CI (slightly organic), t. m. Sd (5GY 2/1)                                                                      |                                                                                         |  |  |  |
| -19-                                               | CL    | $ \longrightarrow$ | 3                                                |                          |                  | CLAY                                                                                                           |                                                                                         |  |  |  |
|                                                    | UL    |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -20-                                               |       | $\mathbf{n}$       | 19<br>21                                         | 6<br>14                  | 0                | CL (5GY 2,1)<br>f-m-c Sd, a. Grv, I. Slt (5YR 4/4) (Till)                                                      |                                                                                         |  |  |  |
| -21-                                               |       |                    | 32<br>33                                         |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -22-                                               |       |                    | 23                                               | 9                        | 4.3              | 1-m-c Sd, a. Grv, I. Slt, L CI (5YR 4/4) (Till)                                                                |                                                                                         |  |  |  |
| -23-                                               | SP    |                    | 50/4                                             |                          |                  | Poorly Graded SAND and Gravel                                                                                  |                                                                                         |  |  |  |
| -24                                                |       | $ \rightarrow $    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
|                                                    |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -25-                                               |       |                    | 34<br>50/2                                       | 5                        | 2.1              | wthrd sittstone, I. CI (SYR 4/4)                                                                               |                                                                                         |  |  |  |
| -26-                                               |       |                    |                                                  |                          |                  | Bedrock @ 26'<br>End of Boring @ 26'                                                                           |                                                                                         |  |  |  |
| -27-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -28-                                               |       |                    |                                                  |                          |                  | ·                                                                                                              |                                                                                         |  |  |  |
| -29-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
|                                                    |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -30.                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| •31-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -32-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -33.                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -34-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
|                                                    |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -35-                                               |       |                    |                                                  |                          |                  |                                                                                                                |                                                                                         |  |  |  |
| -36-                                               |       |                    |                                                  |                          |                  |                                                                                                                | 1                                                                                       |  |  |  |

K1ENG(283709)LOGS(8-45

| <sup>de</sup> K                                  | illan    | n                      |                                                  |                           |                   | BORING LOG                                                                                                                               |                                                    | LOG: B-46 |  |  |
|--------------------------------------------------|----------|------------------------|--------------------------------------------------|---------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------|--|--|
| DATE COMP<br>DRILLER:<br>INSPECTOR<br>DRILLING M | PLETED:  |                        | November<br>Advanced<br>Jonathan I<br>Hollow Ste | Drilling In<br>B. Secking | ncoporated<br>ger | PROJECT: PSE&G: Former Front Street Gas Works<br>LOCATION: Newark, New Jersey<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A |                                                    |           |  |  |
|                                                  |          |                        |                                                  |                           |                   | _                                                                                                                                        | LATITUDE/LONGITUDE:<br>SURVEYED ELEVATION (# MSL): |           |  |  |
| DEPTH                                            | SOL      | SAMPLES                | BLOW                                             | RECOVERY                  |                   |                                                                                                                                          | VISUAL                                             | COMMENTS  |  |  |
| (ሾኻ)<br>-ው-                                      | CLASS    |                        | COUNTS                                           | (IN)                      | SCREENING (ppm)   | D                                                                                                                                        | ESCRIPTION                                         |           |  |  |
|                                                  | 1        |                        |                                                  | 1                         |                   |                                                                                                                                          |                                                    |           |  |  |
| -1-                                              |          |                        |                                                  | 1                         |                   |                                                                                                                                          | •                                                  |           |  |  |
| -2-                                              |          |                        |                                                  | 7                         |                   |                                                                                                                                          |                                                    |           |  |  |
| -3-                                              | sw       |                        |                                                  | 1                         |                   | Well Grad                                                                                                                                | ed SAND and Silt                                   |           |  |  |
| -4-                                              |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          | L                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -5-                                              |          |                        | 4                                                | 14                        | 0                 | f Sd, I. Sit (5YR 6/4), grading upward to m Sd, I                                                                                        | . Sit                                              |           |  |  |
| -6-                                              |          |                        | 7                                                |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -7-                                              | ML       |                        | 6                                                | 4                         | 0                 | Sit, I. f Sd<br>SiL 7                                                                                                                    | with Sand                                          |           |  |  |
| -8-                                              | <b> </b> | -                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -0-                                              |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -9-                                              |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -10-                                             |          |                        | 8                                                | 9                         | 0                 | f Sd, t. Sit (5YR 6/4)                                                                                                                   |                                                    |           |  |  |
| -11-                                             |          |                        | 8                                                | 9                         | 0                 | f Sd, t. Sit (5YR 4/4)                                                                                                                   |                                                    |           |  |  |
|                                                  |          |                        | 7                                                |                           |                   |                                                                                                                                          |                                                    | Wet @ 11' |  |  |
| -12-                                             | sw       |                        |                                                  |                           |                   | Well Grade                                                                                                                               | d SAND and Silt                                    |           |  |  |
| -13-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -14-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -15-                                             |          |                        | 16                                               | 12                        | 0                 |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          | $\left  \right\rangle$ | 21                                               | 12                        | U                 | f Sd, a. Sit (5YR 4/4)                                                                                                                   |                                                    | Sample @  |  |  |
| -16-                                             | ML       |                        | 23<br>25                                         | 4                         | o                 | SII (5YR 4/4)                                                                                                                            | SILT                                               | 16-16.5   |  |  |
| -17-                                             |          |                        |                                                  |                           |                   | End of Boring @ 17'                                                                                                                      |                                                    |           |  |  |
| -18-                                             |          |                        | ·····                                            |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| 10                                               |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -19-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -20-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -21-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -22-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -23-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -24-                                             |          | F                      |                                                  | 1                         | Ì                 |                                                                                                                                          |                                                    |           |  |  |
| -25-                                             |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -26-                                             |          | F                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          | t                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -27-                                             |          | ŀ                      |                                                  |                           | ŀ                 |                                                                                                                                          |                                                    |           |  |  |
| -28-                                             |          | ļ                      |                                                  |                           | i                 |                                                                                                                                          |                                                    |           |  |  |
| -29-                                             |          | -                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -30-                                             |          | -                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          | E                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -31.                                             |          | F                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -32-                                             |          | -                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| .33-                                             |          | ŀ                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          | F                      |                                                  |                           |                   |                                                                                                                                          |                                                    | į 1       |  |  |
| -34-                                             |          | -                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -35-                                             |          | F                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
| -36-                                             |          | ŀ                      |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |
|                                                  |          |                        |                                                  |                           |                   |                                                                                                                                          |                                                    |           |  |  |

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| ™Ki           | llan          | n                      |                  |                   | <u></u>         | BORING LOG                                            |                  | LOG: | B-47                  |
|---------------|---------------|------------------------|------------------|-------------------|-----------------|-------------------------------------------------------|------------------|------|-----------------------|
| DATE COMP     | LETED:        |                        | November         |                   |                 | PROJECT:                                              | PSE&G: Former F  |      | Gas Works             |
| DRILLER:      |               |                        |                  |                   | ncoporated      |                                                       | Newark, New Jers | ey   |                       |
| INSPECTOR     |               |                        | Jonathan I       |                   |                 | KILLAM PROJECT NU<br>STATE CASE NUMBE                 |                  |      |                       |
| DRILLING M    | ETHOD:        |                        | Holiow Ste       | em Auger          |                 | LATITUDE/LONGITU                                      | DE:              |      | · · · ·               |
|               |               | ·                      |                  | T                 |                 |                                                       | ON (ft MSL):     |      | COMMENTS              |
| DEPTH<br>(FT) | SOIL<br>CLASS | SAMPLE                 | 5 BLOW<br>COUNTS | RECOVER           | SCREENING (ppm) | DESCRIPTION                                           |                  |      |                       |
| -0-           | 1             |                        |                  | -                 |                 |                                                       |                  |      | 1                     |
| -1-           |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
|               |               |                        |                  | -                 |                 |                                                       |                  |      |                       |
| -2-           |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -3-           |               |                        |                  | -                 |                 | FILL                                                  |                  |      |                       |
| 4             |               | 1                      |                  | 1                 | 1               |                                                       |                  |      |                       |
| -5-           |               | k—                     |                  | 8                 | 0               | brick fgmts (10YR 4/6) (Fill)                         |                  |      |                       |
|               |               |                        | 13               | -                 |                 |                                                       |                  |      |                       |
| -6-           |               |                        | 3                | 1                 |                 |                                                       |                  |      |                       |
| -7-           |               |                        |                  | $\left\{ \right.$ |                 |                                                       |                  |      |                       |
| -8-           |               | 1                      |                  | 1                 |                 |                                                       |                  |      |                       |
| -9-           |               |                        |                  | -                 |                 |                                                       |                  |      |                       |
|               | sw            |                        |                  | 1                 | 4.3             | Well Graded SAND<br>m Sd, t. Sit (5YR 3/2)            |                  | -    | Strong MGP            |
| -10-          |               | $\left  \right\rangle$ | 4                | 15                | 4.3             |                                                       |                  |      | odor                  |
| -11-          |               |                        | 3                | -                 |                 |                                                       |                  |      |                       |
| -12-          |               |                        | 5                | 20                | 155             | m-c Sd, t Sit (5YR 3/2)                               |                  |      | MGP Product           |
| -13-          | SP            | $  \setminus$          | 6                | -                 |                 | Poorly Graded SAND                                    |                  |      |                       |
| -13-          |               |                        | 5                | 1                 |                 |                                                       |                  |      | Line of Density of    |
| -14-          |               | $\left  \right\rangle$ | 12               | - 7               | 198             | m-c Sd, t. Slt (5YR 3/2)<br>Well Graded SAND and Silt |                  |      | Heavy Product         |
| -15-          | sw            |                        | 18               | 12                | 31              | f Sd, s. Sit (5YR 3/4)                                |                  |      | no visible<br>product |
| -16-          |               | -                      | 30               | 9                 | 503             | f-m Sd, t. Slt (5YR 3/2)                              | · · · · · ·      |      | Heavy Product         |
| -17-          | SP            | $  \setminus$          | 50/5             | {                 |                 | Poorty Graded SAND                                    |                  |      |                       |
|               |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -18-          |               | $\left  \right\rangle$ |                  | 10                | 66<br>10        | f-m Sd. t. Sit (5YR 3/2)<br>Sit (5YR 4/4)             |                  |      | No Product            |
| -19-          | ML            |                        | 50/5             | ]                 |                 | Sin                                                   |                  |      |                       |
| -20-          |               |                        |                  | <u> </u>          |                 | End of Boring @ 20'                                   |                  |      | 1                     |
| -21-          |               |                        |                  | -                 |                 |                                                       |                  |      |                       |
|               |               |                        |                  | 1                 |                 |                                                       |                  |      | .                     |
| -22-          |               | 1                      |                  | 1                 |                 |                                                       |                  |      |                       |
| -23-          |               |                        |                  | -                 |                 |                                                       |                  |      |                       |
| -24-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -25-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
|               | 1             |                        |                  | 1                 |                 |                                                       |                  |      | ļ                     |
| -26-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -27-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -28-          |               |                        |                  | 1                 |                 |                                                       |                  |      | 1                     |
| -29-          |               |                        |                  | -                 | +               |                                                       |                  |      |                       |
| -27-          |               |                        |                  | 1.                |                 |                                                       |                  |      |                       |
| -30           |               |                        |                  | 4                 |                 |                                                       |                  |      |                       |
| -31-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -32-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
|               |               |                        |                  | -                 |                 |                                                       |                  |      |                       |
| -33-          |               | ł                      |                  | 1                 |                 |                                                       |                  |      |                       |
| .34.          |               |                        |                  | 4                 |                 |                                                       |                  |      |                       |
| -35-          |               |                        |                  | 1                 |                 |                                                       |                  |      |                       |
| -36-          |               | 1                      |                  | -                 |                 |                                                       |                  |      |                       |
| 1 ~           | 1             |                        |                  | 1                 | 1               |                                                       |                  |      | 1                     |

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| <sup>™</sup> Ki                                    | llan  | n       |                                                  |                           |                 | BORING LOG                                                                           | LOG: B-48            |
|----------------------------------------------------|-------|---------|--------------------------------------------------|---------------------------|-----------------|--------------------------------------------------------------------------------------|----------------------|
| DATE COMPI<br>DRILLER:<br>NSPECTOR:<br>DRILLING ME | :     |         | November<br>Advanced<br>Jonathan E<br>Hollow Ste | Drilling In<br>3. Secking |                 | LOCATION: Ner<br>KILLAM PROJECT NUMBE<br>STATE CASE NUMBER: N<br>LATITUDE/LONGITUDE: | VA                   |
| DEPTH                                              | SOL   | SAMPLES | BLOW                                             | RECOVERY                  | FIELD           |                                                                                      | R MSL):              |
|                                                    | CLASS |         | COUNTS                                           | (114)                     | SCREENING (ppm) | DESCRIPTION                                                                          | GONORENES            |
| -0-<br>-1-<br>-2-<br>-3-<br>-4                     |       |         |                                                  |                           |                 |                                                                                      |                      |
| -5-<br>-6-<br>-7.<br>-8-                           |       |         | 8<br>8<br>7<br>4                                 | 6                         | 0               | brick fgmts (10YR 4/6) (Fill)                                                        | Foundation           |
| -9-<br>-10-<br>-11-                                |       |         | 26<br>12<br>7                                    | 3                         | 0               | Gravel, I. Slt (5YR 3/4) (Fill)                                                      |                      |
| -12-                                               | SP    |         | 5<br>3<br>3<br>3                                 | 17                        | 0               | f-m Sd, t. Sit (SYR 2/2)                                                             |                      |
|                                                    |       |         | 4                                                |                           |                 | Poorly Graded SAND                                                                   |                      |
| -14-<br>-15-                                       | sw    |         | 7<br>8<br>11                                     | 17                        |                 | f Sd, a. Sit (SYR 4/4)<br>Well Graded SAND and Silt                                  | sample<br>(15-15'5') |
| -16-                                               | ML    |         | 16                                               | 1                         | <u> </u>        | Sit (5YR 4/4) SILT<br>End of Boring @ 16'                                            |                      |
| .17.                                               |       | Ē       |                                                  |                           |                 |                                                                                      |                      |
| -18-                                               |       |         |                                                  |                           |                 |                                                                                      |                      |
| -19-                                               |       | ŀ       |                                                  |                           |                 |                                                                                      |                      |
| -20-                                               |       | Ļ       |                                                  |                           |                 |                                                                                      |                      |
| -21-                                               |       |         |                                                  |                           |                 |                                                                                      |                      |
| -22-                                               |       |         |                                                  |                           |                 |                                                                                      |                      |
| -23-                                               |       | F       |                                                  |                           |                 |                                                                                      |                      |
| -24-                                               |       | F       |                                                  | 1                         |                 |                                                                                      |                      |
| -25-                                               |       | F       |                                                  |                           |                 |                                                                                      |                      |
| -26-                                               |       | F       |                                                  |                           |                 |                                                                                      |                      |
| 1                                                  |       | Ļ       |                                                  |                           |                 |                                                                                      |                      |
| -27-                                               |       |         |                                                  |                           |                 |                                                                                      |                      |
| -28-                                               |       |         |                                                  |                           |                 |                                                                                      |                      |
| -29-                                               |       | F       |                                                  |                           |                 |                                                                                      |                      |
| -30-                                               |       | F       |                                                  |                           |                 |                                                                                      |                      |
| -31-                                               |       | -       |                                                  |                           |                 |                                                                                      |                      |
| -32-                                               |       | -<br> - |                                                  |                           |                 |                                                                                      |                      |
| -33-                                               |       | F       |                                                  |                           |                 |                                                                                      |                      |
| -34-                                               |       |         |                                                  |                           |                 |                                                                                      |                      |
|                                                    |       | Г       |                                                  |                           |                 |                                                                                      | · · · · ·            |
| -35-                                               |       | - I     |                                                  |                           |                 |                                                                                      |                      |

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#### MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION (One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |  |
|--------------------|-------------------------------|--|
| Name of Facility:  | Former Front Street Gas Works |  |
| Location:          | McCarter Highway, Newark, NI  |  |
| NIPDES Permit No.: |                               |  |

#### **CERTIFICATION**

| CERTIFICATION                                      |                         |
|----------------------------------------------------|-------------------------|
| Well Permit Number:                                | <u>2 6 - 5 1 0 1 .3</u> |
| Owner's Well Number (As shown on the               |                         |
| application or plans):                             | MW-1                    |
| Well Completion Date:                              | luly 2, 1998            |
| Distance from Top of Casing (cap off) to           |                         |
| ground surface (one-hundredth of a foot):          | 0.27'                   |
| Total Depth of Well to nearest 1/2 foot:           | 35'                     |
| Depth to Top of Screen (or Top of Open Hole)       |                         |
| From Top of Casing (one-hundredth of a foot):      | 20'                     |
| Screen Length (or length of open hole) in feet:    | <u>15'</u>              |
| Screen or Slot Size:                               | 0.010                   |
| Screen or Slot Material:                           | PVC Sch. 40             |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40             |
| Casing Diameter (inches):                          | 2"                      |
| Static Water Level From Top of Casing at the Time  |                         |
| of Installation (one-hundredth of a foot):         | 29.08'                  |
| Yield (gallons per minute):                        | <1                      |
| Development Technique (specify)                    | Hand Bailed             |
| Length of Time Well is Developed/Pumped or Bailed: | <u>1 hour</u>           |
| Lithologic Log:                                    | Attached                |
|                                                    |                         |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

SIGNATURE

SEAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

TITLE

DATE

### MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

### THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:                          | 2 6 - 5 1 0 1 3                    |
|----------------------------------------------|------------------------------------|
| (This number must be permanently             |                                    |
| affixed to the well casing.)                 |                                    |
| Longitude (NAD '83):                         | West 74° 10' 00.42"                |
| Latitude (NAD '83):                          | North 40° 44' 34.06"               |
| Elevation of Top of Inner Casing (cap off)   |                                    |
| (one-hundredth of a foot.) (NAVD '88):       |                                    |
| Source of elevation datum (benchmark, etc.)  |                                    |
| and elevation. (If an alternate datum has    |                                    |
| been approved by the Department, identify    |                                    |
| here and give approximated elevation):       | Source: Newark City GPS Mon #89-28 |
|                                              | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application |                                    |
| or plans):                                   | MW-1                               |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

٢ MAT THEW L. MARTINL and Surveyor License No.. 30088 m:\survey\980704\misc\form-b.smt

SEAL

| <b></b> Killa                                                                                                                                     | m             |                    |                     |                |                   | DRI    |                                                                                                                  | G: MW-1<br>RMIT: 28-51013                  |  |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|---------------------|----------------|-------------------|--------|------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--|--|
| DATE COMPLETED: July 2, 1998<br>DRILLER: Advanced Drilling Incorporated<br>INSPECTOR: Jonathan B. Seckinger<br>DRILLING METHOD: Hollow Stem Auger |               |                    |                     |                |                   |        | PROJECT: PSE&G, Former Front Street Gas Works<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |                                            |  |  |
| WELL DEVEL                                                                                                                                        | OPME          | NT:                | FIOROW 3            |                | -                 |        | STATE CASE NUMBER: N/A                                                                                           | <u> </u>                                   |  |  |
| DATE:<br>METHOD:                                                                                                                                  |               | 98<br>bailing      |                     | YIELD<br>Cs: N |                   |        |                                                                                                                  | FUM: ft above MSL                          |  |  |
| LENGTH OF<br>SCREEN:                                                                                                                              |               | r-ID Scl           | 60 minu<br>h. 40 PV |                | lot               |        |                                                                                                                  | OUND SURFACE: 38.55<br>LL DEPTH (TOC): 35' |  |  |
| RISER:<br>COMPLETI                                                                                                                                |               | "-ID Scl<br>Flushm | h. 40 PV<br>Iount   | C              |                   |        | WATER DEPTH/DATE: 29.08' / 9-16-98<br>WATER DEPTH/DATE: 29.10' / 10-14-98                                        |                                            |  |  |
|                                                                                                                                                   | DEPTH<br>(FT) | SOIL<br>CLASS.     | SAMPLES             | BLOW           | RECOVERY<br>(IN.) | FIELD  | VISUAL<br>DESCRIPTION                                                                                            | COMMENTS                                   |  |  |
| × - * *                                                                                                                                           | -0-           |                    |                     | 8              | 2                 | 0      | CI, s. f-m-c Sd (5 YR 4/4); Insufficient Quantity for Sample                                                     |                                            |  |  |
|                                                                                                                                                   | -1-           |                    |                     | 8<br>9         |                   |        |                                                                                                                  |                                            |  |  |
|                                                                                                                                                   | -2-           |                    |                     | 8<br>6<br>2    | 2                 | 0      | Grv, I. f-m Sd, t. Slt (5 YR 4/4); Insufficient Quantity for Sa                                                  | mple                                       |  |  |
|                                                                                                                                                   | -3-           |                    |                     | 2<br>5<br>3    |                   |        | FILL                                                                                                             |                                            |  |  |
|                                                                                                                                                   | -4-<br>-5-    |                    |                     | 6              | 8                 | 0      | f-m Sd, I. Grv, I. Sit; Fill (5 YR 4/4)                                                                          | MW-1 (4-4.5')                              |  |  |
|                                                                                                                                                   | -6-           |                    |                     | 20<br>10       |                   |        |                                                                                                                  |                                            |  |  |
|                                                                                                                                                   | -7-           |                    |                     | 10<br>13       | 15                | 0      | f-m-c Sd a. Grv, t. Slt (5 YR 4/4)                                                                               |                                            |  |  |
|                                                                                                                                                   | -8-           |                    |                     | 18<br>18       |                   |        |                                                                                                                  |                                            |  |  |
|                                                                                                                                                   | -9-           |                    |                     | -6<br>-5       | 18                | 0      | f-m-c Sd a. Grv, t. Slt (5 YR 4/4)                                                                               |                                            |  |  |
|                                                                                                                                                   | -10-          | SP-SM              | $ \longrightarrow $ | 10<br>11<br>6  | 9                 | 0      | Poorly Graded SAND with GRAVEL and SILT<br>f-m Sd, I. Grv, I. Sit (5 YR 4/4)                                     |                                            |  |  |
|                                                                                                                                                   | -11-          |                    | $\mathbf{X}$        | -6<br>-6       | Ĵ                 | Ū      |                                                                                                                  |                                            |  |  |
|                                                                                                                                                   | -12-          |                    | $ \rightarrow $     | 6              | 18                | 0      | f-m Sd, I. Grv, I. Slt (5 YR 4/4)                                                                                |                                            |  |  |
|                                                                                                                                                   | -13-          |                    | $\mathbf{i}$        | 7<br>10        |                   |        |                                                                                                                  |                                            |  |  |
|                                                                                                                                                   | -14-          | ML                 |                     | 12<br>5        | 17                | ٥      | 3" SIL, I. f Sd (5 YR 4/4) SILT                                                                                  |                                            |  |  |
|                                                                                                                                                   | -15-          |                    | $\mathbf{i}$        | 2<br>3         |                   |        | 14" f-m Sd, t. Sit (5 YR 4/4)                                                                                    |                                            |  |  |
|                                                                                                                                                   | -16-          |                    | $\overline{}$       | 4<br>6<br>4    | 15                | 0      | f-m Sd, t. Slt (5 YR 4/4)                                                                                        | Moist                                      |  |  |
|                                                                                                                                                   | -17-          | SP-SM              |                     | 3              |                   |        | Poorly Graded SAND with SILT                                                                                     |                                            |  |  |
|                                                                                                                                                   | -18-<br>-19-  |                    | $\overline{}$       | 5<br>5         | 18                | 10     | f-m Sd, t. Slt, t. Grv (5 YR 4/4)                                                                                | Moist                                      |  |  |
|                                                                                                                                                   | -20-          |                    | $\backslash$        | 4              |                   |        |                                                                                                                  |                                            |  |  |
|                                                                                                                                                   | -21-          |                    | $\mathbf{X}$        | 12<br>6        | 18                | 6<br>0 | 6" f Sd a. Sit (5 YR 4/4)<br>8" Grv, t. f-m Sd, t. Sit (5 YR 4/4)                                                |                                            |  |  |
|                                                                                                                                                   | -22-          |                    |                     | 11<br>30       |                   | 21     | 4" f Sd a. Slt (10 YR 2/2)                                                                                       |                                            |  |  |
|                                                                                                                                                   | -23-          | S14/ C1-           | $\mathbf{i}$        | 18<br>17       | 16                | 0      | 10" m-c Sd a. Grv, t. Slt (10 YR 4/4)<br>6" f Sd a. Slt (10 YR 4/4)<br>Wolf Craded SAND with Slt T               |                                            |  |  |
|                                                                                                                                                   | •24·          | SW-SM              | $ \ge $             | 15<br>11<br>10 | 20                | 47     | Well Graded SAND with SILT<br>( Sd a. Sit (10 YR 4/4)                                                            | Odor                                       |  |  |
|                                                                                                                                                   | -25-          |                    |                     | 8              |                   | -1     |                                                                                                                  |                                            |  |  |

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Sheet 1 of 2

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| ™Killa                                | m            |            |                                    |               | C           | RILLI     | NG LOG                                                                                                         | LOG:       | MW-1<br>28-51013       | ] |
|---------------------------------------|--------------|------------|------------------------------------|---------------|-------------|-----------|----------------------------------------------------------------------------------------------------------------|------------|------------------------|---|
| DATE COMP<br>DRILLER: A<br>INSPECTOR: | dvance       | d Drilling | 2, 1998<br>J Incorpor<br>Seckinger | ated          | <del></del> |           | PROJECT: PSE&G, Former Front Street, Newark<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 | Street Gas | Works                  | 5 |
| WELL                                  | DEPTH        | SOIL       | SAMPLES                            | BLOW          | RECOVERY    | FIELD     | VISUAL                                                                                                         |            | COMMENTS               | 1 |
| CONSTRUCTION                          | (FT)         | CLASS.     | <b> </b>                           | COUNTS        | (IN.)       | SCREENING | DESCRIPTION                                                                                                    |            |                        | - |
|                                       | -25          |            | $\sim$                             | 16            | <u> </u>    |           |                                                                                                                |            |                        |   |
|                                       | -26-<br>-27- |            |                                    | 17<br>11<br>9 | 20          | 84<br>38  | 11" f Sd a. Sli (5 YR 6/4)<br>9" f Sd a. Sli (5 YR 4/4)                                                        |            | Maist<br>Wet           |   |
|                                       |              |            |                                    | 13            |             |           |                                                                                                                |            | MW-1 (26.5-27')        |   |
|                                       | -28-         |            | $\vdash$                           | 16<br>12      | 20          | 190       | f Sd a. Sit (5 YR 3/2)                                                                                         |            | MW-1 (27.5-28')<br>Wet |   |
|                                       | -29-         | sw-sm      |                                    | 15<br>17      |             |           | Well Graded SAND with SILT                                                                                     |            |                        |   |
|                                       | -30-         |            | $ \longrightarrow $                | 17            | 16          | £20       |                                                                                                                |            |                        |   |
|                                       | -31-         |            | $\backslash$                       | 9<br>13<br>25 | 10          | 539       | f Sd a. Sit (5 YR 3/4)                                                                                         |            | Visible Product        |   |
|                                       | -32-         |            |                                    | 30            | <u> </u>    |           |                                                                                                                |            |                        |   |
|                                       |              |            |                                    | 19<br>26      | 13          | 702       | f Sd a. Slt (5 YR 3/4)                                                                                         |            | Visible Product        |   |
|                                       | -33-         |            |                                    | 30            |             |           |                                                                                                                |            |                        |   |
|                                       | -34-         |            | <u> </u>                           | 38            |             |           |                                                                                                                |            | MW-1 (33,5-34')        |   |
|                                       |              |            | $\mathbf{X}$                       | 17<br>19      | 16          | 10.6      | Sit, t. f Sd (5 YR 3/4)                                                                                        |            |                        |   |
|                                       | -35-<br>-36- | ML         |                                    | 26<br>50/5    |             |           | SILT                                                                                                           |            |                        |   |
|                                       |              |            |                                    |               |             |           | End of Boring at 36 Feet                                                                                       |            |                        |   |
|                                       | -37-<br>-38- |            |                                    |               |             |           | Bottom of Well at 35 Feet                                                                                      |            |                        |   |
|                                       | 00           |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -39-<br>-40- |            |                                    |               |             |           |                                                                                                                |            |                        | 1 |
|                                       | -40-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -42-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -43-         |            |                                    |               | 8           |           |                                                                                                                |            |                        |   |
|                                       | -44-         |            |                                    |               |             |           |                                                                                                                |            |                        | [ |
|                                       | -45-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -46-         |            |                                    |               |             | :         |                                                                                                                |            |                        |   |
|                                       | -47-<br>-48- |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -49-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -50-         |            |                                    |               |             |           | ·                                                                                                              | ·          |                        |   |
|                                       | -51-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -52-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -53-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | -54-         |            |                                    |               |             |           |                                                                                                                |            |                        |   |
|                                       | · -55-       |            |                                    |               |             |           |                                                                                                                |            |                        |   |

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Sheet 2 of 2

#### MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION (One form must be completed for each well)

#### CERTIFICATION

| CERTIFICATION                                      |                      |
|----------------------------------------------------|----------------------|
| Well Permit Number:                                | <u>26-51014</u> _    |
| Owner's Well Number (As shown on the               |                      |
| application or plans):                             | <u>MW-1A</u>         |
| Well Completion Date:                              | <u>luly 14, 1998</u> |
| Distance from Top of Casing (cap off) to           |                      |
| ground surface (one-hundredth of a foot):          | 0.42'                |
| Total Depth of Well to nearest 1/2 foot:           | 59'                  |
| Depth to Top of Screen (or Top of Open Hole)       |                      |
| From Top of Casing (one-hundredth of a foot):      | 49'                  |
| Screen Length (or length of open hole) in feet:    | <u>10'</u>           |
| Screen or Slot Size:                               | 0.010                |
| Screen or Slot Material:                           | PVC Sch. 40          |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40          |
| Casing Diameter (inches):                          | <u>2"</u>            |
| Static Water Level From Top of Casing at the Time  |                      |
| of Installation (one-hundredth of a foot):         | 34.56'               |
| Yield (gallons per minute):                        | <1                   |
| Development Technique (specify)                    | Submersible Pump     |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour               |
| Lithologic Log:                                    | Attached             |
|                                                    |                      |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of gine and imprisonment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

| ibility of Jine and in | nprisonment. |  |
|------------------------|--------------|--|
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| 16 Think               | K NEA.       |  |
| <u>AUUAAUU</u>         | ) XY/illight |  |
| SIQNATURE              |              |  |
|                        |              |  |
| SEAL                   | art -        |  |
|                        |              |  |
|                        |              |  |

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

DATE

TITLE

### MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

### THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:<br>(This number must be permanently | <u>2</u> <u>6</u> - <u>5</u> <u>1</u> <u>0</u> <u>1</u> <u>4</u> |
|---------------------------------------------------------|------------------------------------------------------------------|
| affixed to the well casing.)                            |                                                                  |
| Longitude (NAD '83):                                    | West 74° 10' 00.51"                                              |
| Latitude (NAD '83):                                     | North <u>40° 44' 34.10"</u>                                      |
| Elevation of Top of Inner Casing (cap off)              |                                                                  |
| (one-hundredth of a foot.) (NAVD '88):                  | 38.06'                                                           |
| Source of elevation datum (benchmark, etc.)             |                                                                  |
| and elevation. (If an alternate datum has               |                                                                  |
| been approved by the Department, identify               |                                                                  |
| here and give approximated elevation):                  | Source: Newark City GPS Mon #89-28                               |
|                                                         | Elev.: <u>8.11'</u>                                              |
| Owner's Well Number (as shown on application            |                                                                  |
| or plans):                                              | MW-1A                                                            |
|                                                         |                                                                  |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

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MATTHEW L. MARTINI, Land Surveyor License No.. 30088 m:\survey\980704\misc\form-b.smt

SEAL

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| Killam DR                                                                   |              |               |                        |                 |           | DR        | ILLING LOG                                                          | LOG:<br>PERMIT | MW-1A<br>: 26-51014                 |
|-----------------------------------------------------------------------------|--------------|---------------|------------------------|-----------------|-----------|-----------|---------------------------------------------------------------------|----------------|-------------------------------------|
|                                                                             |              | July 14, 1998 |                        |                 |           |           | PROJECT: PSE&G, Former Front St                                     |                |                                     |
|                                                                             | LCIEL        |               | •                      |                 | moralad   |           | LOCATION: Front Street, Newark                                      | reel VaS       | TTUINS                              |
| DRILLER: Advanced Drilling Incorporated<br>INSPECTOR: Jonathan B. Seckinger |              |               |                        |                 |           |           |                                                                     |                |                                     |
| SPECTOR                                                                     |              |               |                        | •               |           |           | KILLAM PROJECT NUMBER: 263709                                       |                |                                     |
|                                                                             |              |               | Hollow                 | Stem A          | uger      |           | STATE CASE NUMBER: N/A                                              | ·              |                                     |
| ELL DEVE                                                                    |              | ENT:          |                        |                 |           |           |                                                                     |                |                                     |
| ATE: 7-2                                                                    |              |               |                        |                 | : < 1 GPI | М         | LAT /LONG:                                                          |                |                                     |
| ETHOD: S                                                                    | Submer       | sible Purr    | νp                     | Cs: N           | √A.       |           |                                                                     | DATUM:         | ft above MSL                        |
| NGTH OF                                                                     |              |               |                        |                 |           |           | TOP OF CASING: 38.06                                                | GROUND         | SURFACE: 38.48                      |
| CREEN:                                                                      |              |               |                        |                 |           |           | SCREEN DEPTH (TOC): 49'                                             | WELL DEP       | PTH (TOC): 59"                      |
| SER: (49                                                                    |              |               |                        | 37') 6"         | -ID Steel | Casing    | WATER DEPTH/DATE: 34.56' / 9-16-98                                  |                |                                     |
| OMPLETI                                                                     | 1            | T             | 1                      |                 | <u>г</u>  |           | WATER DEPTH/DATE: 30.87 / 10-14-98                                  |                | T                                   |
| WELL                                                                        | DEPTH        |               | SAMPLES                | BLOW            | RECOVERY  | FIELD     | VISUAL                                                              |                | COMMENTS                            |
| DINSTRUCTION                                                                |              | CLASS.        | <br>                   | COUNTS          | (IN.)     | SCREENING | DESCRIPTION                                                         |                |                                     |
| <b>TXX</b>                                                                  | -0-          |               |                        | 8               | 2         | 0         | Cl, s. f-m-c Sd (5 YR 4/4)                                          |                | Insufficient quantity               |
| 3 88                                                                        | -1-          | l l           |                        | 8               | 1         |           |                                                                     |                | for sample                          |
| 3 18                                                                        |              |               |                        | 9               | 4         |           |                                                                     |                |                                     |
| 1 88                                                                        | -2-          |               | <u>k</u>               | 8               | 2         | 0         | Gov I fam Sd t SH /5 VP 4/4)                                        |                | Incufficia-t                        |
| 3 188                                                                       |              |               | $\left  \right\rangle$ | <u>6</u><br>2   |           | U         | Grv, I. f-m Sd, t. Slt (5 YR 4/4)                                   |                | Insufficient quantity<br>for sample |
| ] [8                                                                        | -3-          | 1             |                        | 5               | 1         |           | FILL                                                                |                |                                     |
| 1 18                                                                        | -4-          | ļ             |                        | 3               | ]         |           | 1                                                                   |                |                                     |
|                                                                             |              | 1             | $\backslash$           | 6               | 8         | 0         | f-m Sd, I. Grv, I. Slt; Fill (5 YR 4/4)                             |                |                                     |
|                                                                             | -5-          |               |                        | 8<br>20         |           |           |                                                                     |                |                                     |
|                                                                             |              | 1             | $ $ $\setminus$        | 10              |           |           |                                                                     |                |                                     |
|                                                                             | -6-          |               |                        | 10              | 15        | 0         | f-m-c Sd a. Grv, t. Slt (5 YR 4/4)                                  |                | 1                                   |
|                                                                             | -7-          |               | $\mathbf{X}$           | 13              |           |           |                                                                     |                |                                     |
|                                                                             |              |               |                        | 18              |           |           |                                                                     |                |                                     |
|                                                                             | -8-          |               |                        | 18<br>6         |           | 0         | f-m-c Sd a. Grv, t. Sit (5 YR 4/4)                                  |                |                                     |
|                                                                             | _            |               | $\mathbf{X}$           | 5               | 10        | U         | 1-m-c Sd a. Giv, I. Sit (5 TR 4/4)                                  |                |                                     |
|                                                                             | -9-          |               |                        | 10              |           |           |                                                                     |                |                                     |
|                                                                             | -10-         | SP-SM         |                        | 11              |           |           | Poorly Graded SAND with GRAVEL and SIL                              | т              |                                     |
| 1 88                                                                        |              |               | $\setminus$            | 6               | 9         | 0         | f-m Sd, f, Grv, I, Sit (5 YR 4/4)                                   |                |                                     |
|                                                                             | -11-         |               | $\langle \rangle$      | 6<br>6          |           |           |                                                                     |                |                                     |
|                                                                             | -12-         |               |                        | 6               |           |           |                                                                     |                |                                     |
|                                                                             | -12-         |               |                        | 6               | 18        | 0         | f-m Sd, I. Grv, I. Sit (5 YR 4/4)                                   |                |                                     |
|                                                                             | -13-         | [ ]           | $\mathbf{X}$           | 7               |           |           |                                                                     |                |                                     |
| 3 88                                                                        |              | [ ]           |                        | 10              |           |           |                                                                     |                |                                     |
|                                                                             | -14-         | ML            | <u></u>                | 12<br>5         | 17        | 0         | 3" SIt, I. f Sd (5 YR 4/4) SILT                                     |                |                                     |
|                                                                             | -15-         |               | $\mathbf{X}$           | 2               |           | v         | 14" f-m Sd, t. Slt (5 YR 4/4)                                       |                |                                     |
|                                                                             | -1,01        |               |                        | 3               |           |           |                                                                     |                |                                     |
|                                                                             | -16-         |               | <u>`</u> `             | 4               |           |           |                                                                     |                |                                     |
|                                                                             |              |               | $\mathbf{X}$           | 6               | 15        | 0         | f-m Sd, t. Slt (5 YR 4/4)                                           |                |                                     |
|                                                                             | -17-         | SP-SM         | $\sim$                 | 4               |           |           | Poorly Graded SAND with SILT                                        |                |                                     |
|                                                                             | -18-         |               | $ \ge $                | 4               |           |           |                                                                     |                |                                     |
|                                                                             | - 10-        | [             |                        | 5               | 18        | 10        | f-m Sd, t. Slt, t. Grv (5 YR 4/4)                                   |                |                                     |
|                                                                             | -19-         |               | $\mathbf{X}$           | 5               |           |           |                                                                     |                |                                     |
|                                                                             |              |               |                        | 4               |           |           |                                                                     |                |                                     |
|                                                                             | -20-         |               |                        | 12              | 18        | 6         | 6" f Sd a. Sit (5 YR 4/4)                                           |                |                                     |
|                                                                             | -21-         |               | $\mathbf{X}$           | 6               | -         | õ         | 8" Grv, I. f-m Sd, t. Slt (5 YR 4/4)                                |                |                                     |
|                                                                             | <b>-</b> · · |               | $\sim$                 | 11              |           | 21        | 4" f Sd a. Slt (10 YR 2/2)                                          |                |                                     |
|                                                                             | •22-         |               | <u> </u>               | 30              |           |           |                                                                     |                |                                     |
|                                                                             |              |               | $\searrow$             | <u>18</u><br>17 | 16        | 0         | 10" m-c Sd a. Grv, t. Sit (10 YR 4/4)<br>6" f Sd a. Sit (10 YR 4/4) |                |                                     |
|                                                                             | -23-         | sw-sm         |                        | 15              |           |           | Well Graded SAND with SILT                                          |                |                                     |
| 1 1983                                                                      | -24-         |               |                        | 11              | {         |           |                                                                     |                |                                     |
|                                                                             | <b>T</b> 4.  |               |                        | 10              | 20        | 47        | f Sd a. Sit (10 YR 4/4)                                             |                |                                     |
| a 12-1883                                                                   | .25          | I Í           |                        | 8               |           |           |                                                                     |                |                                     |

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| Killa                 | m                                                                                                 | n DRILLI      |           |                       | D                 | RILLI                                                                                                            | NG LOG                                                                                      | MW-1A<br>: 26-51014 |                  |   |
|-----------------------|---------------------------------------------------------------------------------------------------|---------------|-----------|-----------------------|-------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|---------------------|------------------|---|
| ATE COMP<br>RILLER: A | E COMPLETED: July 14, 1998<br>LER: Advanced Drilling Incorporated<br>ECTOR: Jonathan B. Seckinger |               |           |                       |                   | PROJECT: PSE&G, Former Front Street Gas Works<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |                                                                                             |                     |                  |   |
| WELL<br>DISTRUCTION   | DEPTH<br>(FT)                                                                                     | SOIL<br>CLASS | SAMPLES   | BLOW                  | RECOVERY<br>(IN.) | FIELD<br>SCREENING                                                                                               | VISUAL<br>DESCRIPTION                                                                       |                     | COMMENTS         |   |
|                       | -25<br>-26-                                                                                       |               |           | 16<br>17              |                   |                                                                                                                  |                                                                                             |                     |                  |   |
|                       | -27-                                                                                              |               | $\square$ | 11<br>9<br>13<br>16   | 20                | 84<br>38                                                                                                         | 11" f Sd a. Sit (5 YR 6/4)<br>9" f Sd a. Sit (5 YR 4/4)                                     |                     |                  | i |
|                       | -28-<br>-29-                                                                                      | sw-sm         |           | 8<br>9<br>14          | 11                | 803                                                                                                              | f Sd a. Sil (5 YR 3/2)<br>Well Graded SAND with SILT                                        |                     | Product          |   |
|                       | -30-                                                                                              |               |           | <u>19</u><br>11       | 18                | 1,418                                                                                                            | f Sd a. Slt (5 YR 2/2)                                                                      |                     |                  |   |
|                       | -31-                                                                                              |               |           | 10<br>22<br>19        | 10                | 1,410                                                                                                            |                                                                                             |                     | Heavy Product    |   |
|                       | -32-<br>-33-                                                                                      |               |           | 16<br>25<br>29        | 20                | 3,779                                                                                                            | f Sd a. Sit (5 YR 2/2)                                                                      |                     | Heavy Product    |   |
|                       | -34-                                                                                              |               |           | _ 37<br>12            | 16                | 34                                                                                                               | Sit a. f Sd (5 YR 4/4)                                                                      |                     |                  |   |
|                       | -35-<br>-36-                                                                                      | SM            |           | 16<br>23<br>30        |                   |                                                                                                                  | Silty SAND                                                                                  |                     |                  |   |
|                       | -37-                                                                                              |               |           | 28<br>30<br>38<br>46  | 18                | 2.1                                                                                                              | Sit a. f Sd (5 YR 4/4)                                                                      |                     |                  |   |
|                       | •38-<br>-39-                                                                                      |               |           | 9<br>20<br>17         | 18                | 1.3                                                                                                              | Cl a, Sit (5 YR 5/6)                                                                        |                     |                  |   |
|                       | -40-<br>-41-                                                                                      |               |           | 12<br>13<br>19<br>32  | 18                | 0.5                                                                                                              | 6" Cl a. Slt (5 YR 5/6)<br>12" Slt a. f-m-c Sd; Till (5 YR 5/6)                             |                     |                  |   |
|                       | -42-<br>-43-                                                                                      |               |           | 39<br>18<br>42<br>21  | 12                | 0                                                                                                                | f-m Sd a. Grv, CI matrix (5 YR 5/6)                                                         |                     | MW-1A (41.5-42') |   |
|                       | -44-<br>-45-                                                                                      | ĸ             |           | 15<br>15<br>27        | 13                | 0                                                                                                                | GLACIAL TILL<br>f-m Sd a. Grv, CI matrix (5 YR 4/4)                                         |                     |                  |   |
|                       | -46-                                                                                              | k             |           | 28<br>42<br>9<br>21   | 8                 | 0                                                                                                                | f-m Sd a. Grv, Cl matrix (5 YR 4/4)                                                         |                     |                  |   |
|                       | -47-<br>-48-                                                                                      | Ę             |           | 43<br>100<br>32       | 10                | 0                                                                                                                | f-m Sd a. Grv, CI matrix (5 YR 4/4)                                                         |                     |                  |   |
|                       | -49-<br>-50-                                                                                      |               |           | 22<br>72<br>74<br>N/R | N/D               | N/O                                                                                                              | Boulder (50-50.5')                                                                          |                     |                  |   |
|                       | -51.                                                                                              | ĸ             |           | <u>100/5</u>          | <u>N/R</u><br>5   | <u>N/R</u><br>0                                                                                                  | Boulder (50-50.5 <sup>-</sup> )<br>f-m Sd a. Grv, t. Weathered Siltstone, Cl matrix (5 YR 4 | 1/4)                |                  |   |
|                       | -52·<br>-53-                                                                                      | K             |           | 38<br>79<br>97        | 18                | 0                                                                                                                | f-m Sd, I. Grv, I. Weathered Siltstone, CI matrix (5 YR 4<br>Weathered Bedrock              | /4)                 |                  |   |
|                       | -54-                                                                                              | -             | $\neg$    | 100/4<br>54<br>100/5  | 11                | 0                                                                                                                | f-m Sd, I. Grv, s. Weathered Siltstone (5 YR 4/4)                                           | 1                   |                  |   |

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Sheet 2 of 3

| <sup>∎</sup> Killa | m          | DRILLI           |               |             |          |           | NG LOG                                                 | LOG:       | MW-1A<br>26-51014 |
|--------------------|------------|------------------|---------------|-------------|----------|-----------|--------------------------------------------------------|------------|-------------------|
| DATE COMPI         | FTED       | Juby             | 14, 1998      |             |          |           | PROJECT: PSE&G, Former Front                           | Street Gas | Works             |
| DRILLER: A         |            |                  |               |             |          |           | LOCATION: Front Street, Newark                         |            |                   |
| NSPECTOR:          | Jona       | tha <b>n B</b> , | Seckinger     |             |          |           | KILLAM PROJECT NUMBER: 263709                          |            | 1                 |
| WELL               | DEPTH      | SOIL             | SAMPLES       | BLOW        | RECOVERY |           | VISUAL                                                 |            | COMMENTS          |
|                    | <u>روم</u> | CLASS.           |               | COUNTS      | (IN.)    | SCREENING | DESCRIPTION                                            |            |                   |
|                    | -54        |                  |               | 54          | 11       | 0         | f-m Sd, I. Grv, s. Weathered Siltstone (5 YR 4/4)      |            | -                 |
|                    | -55-       |                  | $ \ge $       | 100/5       |          |           |                                                        |            |                   |
|                    | -00-       |                  |               | 39          | 14       | 0         | f-m Sd a. Grv, s. Weathered Siltstone, Cl matrix (5    | YR 4/4)    |                   |
|                    | -56-       |                  |               | 62<br>100/5 |          |           | Weathered Bedrock                                      |            |                   |
|                    | -57-       |                  | $\overline{}$ | 50          | 13       | 0         | Weathered Siltstone, I. f-m Sd, I. Grv, Ci matrix (5 Y | (R 4/4)    |                   |
|                    | -57-       |                  |               | 94          |          |           |                                                        |            |                   |
|                    | -58-       |                  |               | 100/4       |          | ļ         | Marthand Cilletone (EMD 4/4)                           |            |                   |
|                    |            |                  |               | 27<br>100/3 | 7        | 0         | Weathered Sittstone (5 YR 4/4)<br>Bedrock - SILTSTONE  |            | MW-1A (58-58.5')  |
|                    | -59-       |                  |               | 100/3       |          |           |                                                        |            |                   |
|                    | -60-       |                  |               |             |          |           | End of Boring at 59 Feet                               |            |                   |
|                    |            |                  |               |             |          |           | Bottom of Well at 59 Feet                              |            |                   |
|                    | -61-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -62-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -63-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -64-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -65-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -66-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -67-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -68-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -69-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -70-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -71.       |                  |               |             |          |           |                                                        |            |                   |
|                    | -72-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -73-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -74-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -75-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -76-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -77-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -78-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -79-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -80-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -81-       |                  |               |             |          | 1<br>-    |                                                        |            |                   |
|                    | -82-       |                  |               |             |          |           |                                                        |            |                   |
|                    | -83-       | ]                |               |             |          |           |                                                        |            |                   |

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Sheet 3 of 3

# MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION

(One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |  |
|--------------------|-------------------------------|--|
| Name of Facility:  | Former Front Street Gas Works |  |
| Location:          | McCarter Highway, Newark, NI  |  |
| NJPDES Permit No.: |                               |  |

#### **CERTIFICATION**

| Well Permit Number:                                | <u>26-51015-</u> |
|----------------------------------------------------|------------------|
| Owner's Well Number (As shown on the               |                  |
| application or plans):                             | <u>MW-2</u>      |
| Well Completion Date:                              | July 1, 1998     |
| Distance from Top of Casing (cap off) to           |                  |
| ground surface (one-hundredth of a foot):          | 0.37'            |
| Total Depth of Well to nearest 1/2 foot:           | 15.5'            |
| Depth to Top of Screen (or Top of Open Hole)       |                  |
| From Top of Casing (one-hundredth of a foot):      | 2.5'             |
| Screen Length (or length of open hole) in feet:    | <u>13'</u>       |
| Screen or Slot Size:                               | 0.010            |
| Screen or Slot Material:                           | PVC Sch. 40      |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40      |
| Casing Diameter (inches):                          | 2"               |
| Static Water Level From Top of Casing at the Time  |                  |
| of Installation (one-hundredth of a foot):         | <u>6.90 '</u>    |
| Yield (gallons per minute):                        | ≈1               |
| Development Technique (specify)                    | Submersible Pump |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour           |
| Lithologic Log:                                    | Attached         |
| -                                                  |                  |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility/pf fine and imprisonment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

SIGNATURE **SEAL** 

### CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

TITLE

DATE

### MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

#### THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:                          | 2 6 - 5 1 0 1 5                     |
|----------------------------------------------|-------------------------------------|
| (This number must be permanently             |                                     |
| affixed to the well casing.)                 |                                     |
| Longitude (NAD '83):                         | West 74° 09' 57.99"                 |
| Latitude (NAD '83):                          | North <u>40° 44' 38.03"</u>         |
| Elevation of Top of Inner Casing (cap off)   |                                     |
| (one-hundredth of a foot.) (NAVD '88):       |                                     |
| Source of elevation datum (benchmark, etc.)  |                                     |
| and elevation. (If an alternate datum has    |                                     |
| been approved by the Department, identify    |                                     |
| here and give approximated elevation):       | Source: Newark City GPS Mon #89-28_ |
|                                              | Elev.: 8.11'                        |
| Owner's Well Number (as shown on application |                                     |
| or plans):                                   | MW-2                                |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

#### AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

MATTHEW L. MARTINI, Land Surveyor License No.. 30088

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|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------|---------------------------------|-------------------|----------|--------------------------------------------------------------------------------------------------------|-----|---------------------------------------------------|
| <sup>⊯</sup> Kill                                                                               | am                                                           |                                                  |                                                 |                                 |                   | DR       |                                                                                                        | DG: | MW-2                                              |
| DRILLER: Advanced Drilling Incorporated<br>INSPECTOR: Jonathan B. Seckinger                     |                                                              |                                                  |                                                 |                                 |                   |          | PROJECT: PSE&G, Former Front Street<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |     | <u>26-51015</u><br>Works                          |
| DRILLING M<br>WELL DEVE<br>DATE: 7-2<br>METHOD: 5<br>LENGTH OF<br>SCREEN:<br>RISER:<br>COMPLETI | ELOPMI<br>23-98<br>Submer<br><u>TIME:</u><br>(13')<br>(2.5') | ENT:<br>sible Puri<br><u>60 mini</u><br>2"-ID Sc | <sup>np</sup><br>utes<br>≿h. 40 PV<br>ch. 40 P∖ | YIELD<br>Cs: N                  | ): ~ 1 GPI<br>V/A | м        | TOP OF CASING: 9.51 GR                                                                                 |     | ft above MSL<br>SURFACE: 9.88<br>'TH (TOC): 15.5' |
| WELL                                                                                            | DEPTH                                                        | 1                                                | SAMPLES                                         |                                 | RECOVERY          | 4        | · VISUAL                                                                                               |     | COMMENTS                                          |
|                                                                                                 | -0-<br>-1-<br>-2-                                            | CLASS                                            |                                                 | 11<br>5                         | 12                | O        | Fill                                                                                                   |     | MW-2 (1-1.5′)                                     |
|                                                                                                 | -3-<br>-4-<br>-5-<br>-6-                                     |                                                  |                                                 | 4<br>6<br>3<br>3<br>3<br>4      | N/R<br>11         | N/R<br>0 | No Recovery<br>Fill; f-m Sd a. Slt, s. concrete fragments (5 YR 3/4)<br><i>FILL</i>                    |     | MW-2 (5.5-6°)                                     |
|                                                                                                 | -7-<br>-7-<br>-8-<br>-9-                                     |                                                  |                                                 | 5<br>3<br>4<br>3<br>3<br>2<br>4 | 3                 | 0        | f-m-c Sd I. Slt (5 YR 3/4)<br>f-m-c Sd I. Slt; brick pieces; Fill (5 YR 3/4)                           |     | Wet                                               |
|                                                                                                 | •10•<br>•11-                                                 | SP-SM                                            |                                                 | 8<br>2<br>1<br>2<br>3           | 10                | 0        | f-m-c Sd s. Sit (10 YR 2/2)<br>Poorly Graded SAND with SILT                                            |     |                                                   |
|                                                                                                 | -12-<br>-13-<br>-14-                                         | GP                                               |                                                 | 2<br>5<br>3<br>2                | 3                 | 0        | Grv, I. f-m Sd,I. Sit (5 YR 3/2)<br>Poorly Graded GRAVEL                                               |     |                                                   |
|                                                                                                 | -15-<br>-16-                                                 | SP-SM<br>CL                                      |                                                 | 3<br>3<br>2<br>1<br>N/A         | 12<br>24          |          | 8" (-m-c Sd, t, Slt (5 YR 3/4)<br>4" Cl (5 G 4/1)<br>CLAY                                              |     | MW-2 (15-15.5')                                   |
|                                                                                                 | -17-<br>-18-                                                 | ·                                                |                                                 |                                 | 24                | N/A      | Shelby Tube from 16-18                                                                                 |     |                                                   |
|                                                                                                 | -19-<br>-20-<br>-21-                                         |                                                  |                                                 |                                 |                   |          | End of Boring at 18 Feet<br>Bottom of Well at 15.5 Feet                                                |     |                                                   |
|                                                                                                 | -22-                                                         |                                                  |                                                 |                                 |                   |          |                                                                                                        |     |                                                   |
|                                                                                                 | -23-<br>-24-                                                 |                                                  |                                                 |                                 |                   |          |                                                                                                        |     |                                                   |
|                                                                                                 | -25-                                                         |                                                  |                                                 |                                 |                   |          |                                                                                                        |     | ·. ·                                              |

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#### MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION (One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |
|--------------------|-------------------------------|
| Name of Facility:  | Former Front Street Gas Works |
| Location:          | McCarter Highway, Newark, NJ  |
| NIPDES Permit No.: |                               |

#### CERTIFICATION

| CERTIFICATION                                      |                      |
|----------------------------------------------------|----------------------|
| Well Permit Number:                                | <u>26-51016-</u>     |
| Owner's Well Number (As shown on the               |                      |
| application or plans):                             | MW-2A                |
| Well Completion Date:                              | <u>lulv 28, 1998</u> |
| Distance from Top of Casing (cap off) to           |                      |
| ground surface (one-hundredth of a foot):          | 0.28'                |
| Total Depth of Well to nearest 1/2 foot:           | 34'                  |
| Depth to Top of Screen (or Top of Open Hole)       |                      |
| From Top of Casing (one-hundredth of a foot):      | 24'                  |
| Screen Length (or length of open hole) in feet:    | 10'                  |
| Screen or Slot Size:                               | 0.010                |
| Screen or Slot Material:                           | PVC Sch. 40          |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40          |
| Casing Diameter (inches):                          | 2"                   |
| Static Water Level From Top of Casing at the Time  |                      |
| of Installation (one-hundredth of a foot):         | 7.02'                |
| Yield (gallons per minute):                        | ≈2                   |
| Development Technique (specify)                    | Submersible Pump     |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour               |
| Lithologic Log:                                    | Attached             |
|                                                    |                      |

#### **AUTHENTICATION**

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Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

GNATURE SEAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

TITLE

DATE

### MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

### THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| 2 6 - 5 1 0 1 6                    |
|------------------------------------|
|                                    |
|                                    |
| West <u>74° 09' 57.97"</u>         |
| North <u>40° 44' 37.98"</u>        |
|                                    |
| 9.58'                              |
|                                    |
|                                    |
|                                    |
| Source: Newark City GPS Mon #89-28 |
| Elev.:8.11'                        |
|                                    |
| MW-2A                              |
|                                    |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

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ATTHEW L. MARTINI, Land Surveyor License No.. 30088 m:\survey\980704\misc\form-b.smt

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| <sup>∎</sup> Killa | am                                                                                                                                                                                   |            |               |                |              | DR        | ILLING LOG                                              | LOG:     | MW-2A<br>26-51016 |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------|----------------|--------------|-----------|---------------------------------------------------------|----------|-------------------|
|                    |                                                                                                                                                                                      | ۲          | July 28       | 1998           |              |           | PROJECT: PSE&G, Former Front \$                         |          |                   |
| DRILLER:           | IPLETED:         July 28, 1998         PROJECT:         PSE&G, Former Front Street Gas Works           Advanced Drilling Incorporated         LOCATION:         Front Street, Newark |            |               |                |              |           |                                                         |          |                   |
| NSPECTOR           |                                                                                                                                                                                      |            | an B. Se      | -              |              |           |                                                         |          |                   |
| -                  |                                                                                                                                                                                      |            |               | -              |              |           |                                                         |          |                   |
| DRILLING MI        |                                                                                                                                                                                      |            | Hollow        | Stem A         | uger         |           | STATE CASE NUMBER: N/A                                  |          |                   |
| WELL DEVE          |                                                                                                                                                                                      |            |               |                |              |           |                                                         |          |                   |
| DATE:              | 8-12-                                                                                                                                                                                | 98         |               | YIELD          | : ~2 gpm     |           | LAT JONG:                                               |          |                   |
| METHOD:            | Subm                                                                                                                                                                                 | nersible F | oump          | Cs:            | N/A          |           | SURVEYED ELEVATIONS:                                    | DATUM:   | ft MSL            |
| ENGTH OF           | TIME:                                                                                                                                                                                | 60 min     | utes          |                |              |           | TOP OF CASING: 9,58                                     | GROUND   | SURFACE: 9.86     |
| SCREEN:            | (10') 3                                                                                                                                                                              | 2"-ID Scl  | h. 40 PV      | C, 10 s        | lot          |           | SCREEN DEPTH (TOC): 24                                  | WELL DEP | PTH (TOC): 34'    |
| RISER:             | (24')                                                                                                                                                                                | 2"-ID Scl  | h. 40 PV      | с              |              |           | WATER DEPTH/DATE: 7.02 / 9-16-98                        |          |                   |
| COMPLETI           | ON :                                                                                                                                                                                 | Flushm     | ount          |                |              |           | WATER DEPTH/DATE: 9.22' / 10-14-98                      |          |                   |
| WELL               | DEPTH                                                                                                                                                                                | SOIL       | SAMPLES       | BLOW           | RECOVERY     | FIELD     | VISUAL                                                  |          | COMMENTS          |
| CONSTRUCTION       | (FT)                                                                                                                                                                                 | CLASS.     |               | COUNTS         | <u>(IN.)</u> | SCREENING | DESCRIPTION                                             |          |                   |
|                    | -0-                                                                                                                                                                                  |            |               | ļ              |              |           |                                                         |          |                   |
| 8 - IXX            |                                                                                                                                                                                      |            |               |                |              |           |                                                         |          |                   |
| 3 🗱                | -1-                                                                                                                                                                                  |            |               | 11             | 12           | 0         | l Fill                                                  |          | 1                 |
| X 🗱                | -2-                                                                                                                                                                                  |            |               | 6              | ``           | •         |                                                         |          |                   |
| 3 🗱                | -2-                                                                                                                                                                                  |            |               | 5              | 1            |           |                                                         |          |                   |
| 3 🗱                | -3-                                                                                                                                                                                  |            |               | 4              |              |           | 4                                                       |          |                   |
| X 🗱                |                                                                                                                                                                                      |            | $\sim$        | 6              | N/R          | N/R       | No Recovery                                             |          |                   |
| X XX               | -4-                                                                                                                                                                                  |            |               | 5              |              |           |                                                         |          |                   |
| X 🗱                | _                                                                                                                                                                                    |            | $\backslash$  | 3              | 11           | 0         | Fill; f-m Sd a. Slt, s. concrete fragments (5 YR 3/4)   |          |                   |
| X XX               | -5-                                                                                                                                                                                  |            |               | 3              |              |           | FILL                                                    |          |                   |
| X 🗱                | -6-                                                                                                                                                                                  |            |               | 4              |              |           | ]                                                       |          |                   |
| X XX               | -0^                                                                                                                                                                                  |            |               | 5              | 3            | 0         | f-m-c Sd I. Sit (5 YR 3/4)                              |          |                   |
| 8 XX               | -7-                                                                                                                                                                                  |            | $\mathbf{X}$  | 3              |              |           |                                                         |          |                   |
| X XX               |                                                                                                                                                                                      |            | $\sim$        | 4              |              |           |                                                         |          |                   |
| 3 8                | -8-                                                                                                                                                                                  |            | <u> </u>      | 3              | $\vdash$     |           |                                                         |          |                   |
| XX XX              |                                                                                                                                                                                      |            | $\mathbf{X}$  | 3              | 9            | ٥         | f-m-c Sd I. Slt; brick pieces; Fill (5 YR 3/4)          |          |                   |
| X XX               | -9-                                                                                                                                                                                  |            |               | 4              |              |           |                                                         |          |                   |
| ** ***             | -10-                                                                                                                                                                                 |            | $\sim$        | 8              |              |           |                                                         |          |                   |
| X XX               | - 10-                                                                                                                                                                                |            |               | 2              | 10           | 0         | f-m-c Sd s. Sit (10 YR 2/2)                             |          |                   |
| 왜 🗱                | -11-                                                                                                                                                                                 |            | $\mathbf{X}$  | 1              |              |           |                                                         |          |                   |
| 3 🗱                |                                                                                                                                                                                      | SP-SM      | $\sim$        | 2              |              |           | Poorly Graded SAND with SILT                            |          |                   |
| 3 📖                | -12-                                                                                                                                                                                 | ┝──-┡      | ——            | 3              | 3            |           | Could medd SH(5 YP 3/2)                                 |          |                   |
| X 🕅                |                                                                                                                                                                                      |            | $\setminus$   | 5              | 3            | 0         | Grv, I. f-m Sd,I. Slt (5 YR 3/2)                        |          |                   |
| 8 👹                | -13-                                                                                                                                                                                 | GP         |               | 3              |              |           | Poorly Graded GRAVEL                                    |          |                   |
| 3 🗱                | -14-                                                                                                                                                                                 |            |               | 2              |              |           | • • • • • • • • • • • • • • • • • • • •                 |          |                   |
| 3 📖                |                                                                                                                                                                                      |            |               |                |              |           |                                                         |          |                   |
| 3 🕅                | -15-                                                                                                                                                                                 | SP-SM      |               |                |              | <u>-</u>  | Poorly Graded SAND with SILT                            |          |                   |
| 3 83               |                                                                                                                                                                                      |            | $\setminus$   | 5              | 18           | 0         | 9" f-m-c Sd. t. Slt (5 YR 3/4)                          |          |                   |
| 3 88               | -16-                                                                                                                                                                                 |            |               | 7 2            |              |           | 9" CI, t. organic (5 Y 4/1)                             | ····     |                   |
| 3 👹                | 17                                                                                                                                                                                   | CL         |               | 2              |              |           | CLAY                                                    |          |                   |
| 3 🗱                | -17-                                                                                                                                                                                 |            |               |                |              |           |                                                         |          |                   |
| 월 🗱                | -18-                                                                                                                                                                                 | [          |               |                |              |           |                                                         |          |                   |
| 3 88               |                                                                                                                                                                                      | ľ          | $ \top$       | 100            | 20           | 0         | Cl a. Grv; v. loose; f-m-c Sd in tip of spoon (5 Y 4/1) |          |                   |
| 3 🗱                | -19-                                                                                                                                                                                 |            | $\mathbf{X}$  | 5              |              |           | ·                                                       |          |                   |
| 3 🗱                |                                                                                                                                                                                      | CL         | $\sim$        | -6             |              |           | CLAY with GRAVEL                                        |          |                   |
| 3 📖                | -20-                                                                                                                                                                                 | k          | <del>}</del>  | <u>11</u><br>3 | . 8          | 0         | f-m-c Sd (N2)                                           |          |                   |
|                    |                                                                                                                                                                                      | 1          | $\mathbf{n}$  | 6              | 5            | U         |                                                         |          | •                 |
|                    | -21-                                                                                                                                                                                 | SP         |               | 5              |              |           | Poorly Graded SAND                                      |          |                   |
| 4 🔟                | -22-                                                                                                                                                                                 |            |               | 5              |              |           |                                                         |          |                   |
|                    | - 2 2 -                                                                                                                                                                              | Ĩ          | $\backslash$  | 4              | 8            | O         | CI (N3)                                                 |          |                   |
|                    | -23-                                                                                                                                                                                 |            | $\sim$        | 3              |              |           |                                                         |          |                   |
| 日 間間               |                                                                                                                                                                                      | CL         |               | 2              |              |           | CLAY                                                    |          |                   |
| ~ [~~~~            |                                                                                                                                                                                      |            | $\sim 100$ M  | 2              |              |           | ······································                  |          |                   |
|                    | -24-                                                                                                                                                                                 | ······     | $\overline{}$ | 5              | 17           | 0         | f-m-c Sd, t. Slt (5 Y 2/1)                              |          |                   |

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| <sup>⊯</sup> Killa                    | m        |            |               |                 | C        | RILLI     | NG LOG                                                                                            | LOG:                                  | MW-2A                           |        |
|---------------------------------------|----------|------------|---------------|-----------------|----------|-----------|---------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------|--------|
| DATE COMP<br>DRILLER: A<br>INSPECTOR: | dvance   | d Drilling |               |                 |          | •         | PROJECT: PSE&G, Former Front S<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |                                       | <u>26-51016</u><br>Works        | 1      |
| WELL                                  | DEPTH    | SOIL       | SAMPLES       | BLOW            | RECOVERY |           | VISUAL                                                                                            |                                       | COMMENTS                        |        |
|                                       | (FT)     | CLASS.     |               | COUNTS          | (IN.)    | SCREENING | DESCRIPTION                                                                                       |                                       |                                 |        |
|                                       | -25      |            |               | 6               |          |           | Poorly Graded SAND with SILT                                                                      | · · · · · · · · · · · · · · · · · · · |                                 |        |
|                                       | -26-     | SP-SM      |               | 9               | NR       | NR        | No Recovery                                                                                       |                                       |                                 |        |
|                                       | -27-     |            |               | 7               |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -28-     |            |               | 9               |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -        | SP         | $\backslash$  | 9<br>5          | 18       | 0.3       | 17" f-m-c Sd (N2)                                                                                 |                                       | Visible Product;<br>Strong Odor |        |
|                                       | -29-     |            |               | 20              |          |           | Poorly Graded SAND                                                                                |                                       | -                               |        |
|                                       | -30-     |            | <u> </u>      | 26<br>10        | 2        | 0         | 1" Till; f-m-c Sd; Cl matrix (10 YR 4/2)<br>f-m-c Sd a. Grv; Cl matrix (10 YR 4/2)                |                                       | MW-2A (29.5-30')<br>Product     |        |
|                                       | -31-     |            | $\mathbf{X}$  | 9               | -        | Ū         |                                                                                                   |                                       | FIODUCI                         |        |
|                                       | <u>.</u> |            |               | 15              |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -32-     |            |               | 19<br>32        | 12       | 0         | Till; f-m-c Sd; CI matrix (5 YR 4/4)                                                              |                                       | No Product                      |        |
|                                       | -33-     |            | $\mathbf{X}$  | 39              |          |           |                                                                                                   |                                       |                                 |        |
|                                       |          |            |               | 46<br>50        |          |           | GLACIAL TILL                                                                                      |                                       |                                 |        |
|                                       | -34-     |            | $\overline{}$ | 16              | 12       | 0         | Till; f-m-c Sd s. Weathered Siltstone; CI matrix (5 YR                                            | 4/4)                                  | No Product                      |        |
|                                       | -35-     |            | $\mathbf{X}$  | <u>49</u><br>51 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -36-     |            |               | 56              |          |           |                                                                                                   |                                       |                                 |        |
|                                       |          |            |               | 47              | 11       | 0         | Till; Weathered Siltstone; I. f-m-c Sd; CI matrix (5 YR                                           | 4/4)                                  | No Product                      |        |
|                                       | -37-     |            |               | <u>85</u><br>69 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -38-     |            |               | 100/2<br>32     | 14       | 0         | Micelbergel Redreek (5 XD 414)                                                                    |                                       |                                 |        |
|                                       | -39-     |            | $\mathbf{X}$  | 2<br>26         | 14       | U         | Weathered Bedrock (5 YR 4/4)                                                                      |                                       |                                 | l et l |
|                                       | -55-     |            |               | 52              |          | 1         | Weathered Bedrock                                                                                 |                                       | MW-2A (39-39.5')                |        |
|                                       | -40-     |            |               | 100/2           |          |           | · · · · · · · · · · · · · · · · · · ·                                                             |                                       | Bedrock at 39.5 Feet            | -1     |
|                                       | -41-     |            |               |                 |          |           | End of Boring at 40 Feet                                                                          |                                       |                                 |        |
|                                       | -42-     |            |               |                 |          |           | Bottom of Well at 34 Feet                                                                         |                                       |                                 |        |
|                                       | -42-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -43-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -44-     |            |               |                 |          |           |                                                                                                   |                                       |                                 | 1      |
|                                       | -45-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -46-     | ĺ          |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -47-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -48-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -49-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -50-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -51-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -52-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -53-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -54-     |            |               |                 |          |           |                                                                                                   |                                       |                                 |        |
|                                       | -55-     |            |               |                 |          |           |                                                                                                   |                                       |                                 | I      |

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Sheet 2 of 2

#### MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION (One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |
|--------------------|-------------------------------|
| Name of Facility:  | Former Front Street Gas Works |
| Location:          | McCarter Highway, Newark, N   |
| NJPDES Permit No.: |                               |

#### CERTIFICATION

| CERTIFICATION                                      |                  |
|----------------------------------------------------|------------------|
| Well Permit Number:                                | <u>26-51017-</u> |
| Owner's Well Number (As shown on the               |                  |
| application or plans):                             | MW-3             |
| Well Completion Date:                              | June 30, 1998    |
| Distance from Top of Casing (cap off) to           |                  |
| ground surface (one-hundredth of a foot):          | 0.39'            |
| Total Depth of Well to nearest 1/2 foot:           | 14'              |
| Depth to Top of Screen (or Top of Open Hole)       |                  |
| From Top of Casing (one-hundredth of a foot):      | 3'               |
| Screen Length (or length of open hole) in feet:    | <u>11'</u>       |
| Screen or Slot Size:                               | 0.010            |
| Screen or Slot Material:                           | PVC Sch. 40      |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40      |
| Casing Diameter (inches):                          | <u>2"</u>        |
| Static Water Level From Top of Casing at the Time  |                  |
| of Installation (one-hundredth of a foot):         | <u>6.15'</u>     |
| Yield (gallons per minute):                        | ≈1               |
| Development Technique (specify)                    | Submersible Pump |
| Length of Time Well is Developed/Pumped or Bailed: | <u>1 hour</u>    |
| Lithologic Log:                                    | Attached         |
|                                                    |                  |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of the and imprisonment,

Jonathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

SIGNATURE SÉAL

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

DATE

### MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

#### THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:<br>(This number must be permanently                              | 2 6 - 5 1 0 1 7                    |
|--------------------------------------------------------------------------------------|------------------------------------|
| affixed to the well casing.)                                                         | West 749 001 56 96"                |
| Longitude (NAD '83):                                                                 | West 74° 09' 56.86"                |
| Latitude (NAD '83):                                                                  | North 40° 44' 34.76"               |
| Elevation of Top of Inner Casing (cap off)<br>(one-hundredth of a foot.) (NAVD '88): | 8.74'                              |
| Source of elevation datum (benchmark, etc.)                                          |                                    |
| and elevation. (If an alternate datum has                                            |                                    |
| been approved by the Department, identify                                            |                                    |
| here and give approximated elevation):                                               | Source: Newark City GPS Mon #89-28 |
|                                                                                      | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application                                         |                                    |
| or plans):                                                                           | MW-3                               |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

MATTHEW L. MARTINI, Land Surveyor License No.. 30088

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| <b>■</b> Kill | am          |               |                        |            |            | DR        |                                                             | OG:     | MW-3             |  |
|---------------|-------------|---------------|------------------------|------------|------------|-----------|-------------------------------------------------------------|---------|------------------|--|
|               |             | June 30, 1998 |                        |            |            |           | PROJECT: PSE&G, Former Front Street Gas Works               |         |                  |  |
| DATE COMP     | LETED       |               |                        |            |            |           |                                                             | eet Gas | Works            |  |
|               |             |               | ced Drillin            |            |            |           |                                                             |         |                  |  |
| INSPECTOR     |             |               | an B. Se               | -          |            |           | KILLAM PROJECT NUMBER: 263709                               |         |                  |  |
| DRILLING M    |             |               | Hollow                 | Stem A     | uger       |           | STATE CASE NUMBER: N/A                                      |         |                  |  |
| WELL DEVE     |             | INT:          |                        |            |            |           |                                                             |         |                  |  |
| DATE: 7-2     |             |               |                        |            | : ~ GPM    |           | LAT JONG:                                                   |         |                  |  |
| METHOD: S     | Submers     | sible Pun     | np                     | Cs: N      | <b>√</b> A |           | 1                                                           | ATUM:   | ft above MSL     |  |
| LENGTH OF     |             |               |                        |            |            |           | TOP OF CASING: 8.74 GF                                      | ROUND S | SURFACE: 9.13    |  |
| SCREEN:       | (11') 2     | 2"-ID Sc      | h. 40 PV               | C, 10 s    | lot        |           | SCREEN DEPTH (TOC): 3' W                                    | ELL DEP | TH (TOC): 14'    |  |
| RISER:        | (3') 2"     | -ID Sch       | . 40 PVC               | :          |            |           | WATER DEPTH/DATE: 6.15' / 9-16-98                           |         |                  |  |
| COMPLETI      | <u>ON :</u> | Flushn        | nount                  |            |            |           | WATER DEPTH/DATE: 8.04' / 10-14-98                          |         |                  |  |
| WELL          | DEPTH       | SOIL          | SAMPLES                |            | RECOVERY   |           | VISUAL                                                      |         | COMMENTS         |  |
| CONSTRUCTION  | (FT)        | CLASS.        |                        | COUNTS     | (IN.)      | SCREENING | DESCRIPTION                                                 |         |                  |  |
|               | -0-         |               | <u>k</u>               | 4          | 8          | 0         | Fill; Shale                                                 |         | MW-3 (0-0.5')    |  |
|               | -1-         |               | $  \rangle$            | 5          | 1 °        | Ŭ         |                                                             |         | 11111-0 (0-0.5 ) |  |
|               | -1-         |               |                        | 9          | 1          |           |                                                             |         |                  |  |
|               | -2-         |               |                        | 4          | ]          |           |                                                             |         |                  |  |
|               | -           |               |                        | 4          | 8          | 0         | f-m-c Sd, I. Sit (5 YR 3/4)                                 |         |                  |  |
|               | -3.         |               |                        | 3          | ļ          |           |                                                             |         |                  |  |
|               |             |               |                        |            | 4          |           |                                                             |         |                  |  |
|               | -4-         |               | $\vdash$               | 4          | 10         | 0         | f-m-c Sd, I. Sit (5 YR 3/4)                                 | 1       | MW-3 (3.5-4')    |  |
|               | -5-         |               | $\backslash$           | 1          |            | U .       |                                                             |         |                  |  |
|               | -5-         |               |                        | 1          |            |           | FILL                                                        |         | Wet at 5 Feet    |  |
|               | -6-         |               |                        | 1          |            |           |                                                             |         |                  |  |
|               |             |               | $\wedge$               | . 4        | 11         | 0         | f-m-c Sd, I. Grv, I. Slt (5 YR 3/4)                         |         |                  |  |
|               | -7-         |               |                        | 3          |            |           |                                                             |         |                  |  |
|               |             |               | $  \setminus$          | 3          |            |           |                                                             |         |                  |  |
|               | -8-         |               | <u> </u>               | 4          | 20         | 0         | 14" f-m Sd a. Grv, v. loose formation (5 YR 3/4)            |         |                  |  |
|               | <b>.</b> 9. |               | $\left  \right\rangle$ | 3          | 10         | Ŭ         | 6" f-m-c Sd a. Grv, t. Slt; wood in tip of spoon (5 YR 3/4) |         |                  |  |
|               | 19.         |               |                        | 2          |            |           |                                                             | 1       |                  |  |
|               | -10-        |               |                        | 3          |            |           |                                                             |         |                  |  |
|               |             |               | $\backslash$           | 2          | 22         | 0         | f-m-c Sd, I. Slt (5 YR 3/4)                                 |         |                  |  |
|               | -11-        | SP-SM         |                        | 3<br>3     |            | i         | Poorly Graded SAND with SILT                                |         |                  |  |
|               |             | 37-314        |                        | 3          |            |           | Poony Graded SAND with SILT                                 |         |                  |  |
|               | •12-        |               |                        | 3          | 8          | 0         | 7.5" f-m-c Sd (5 YR 3/4)                                    |         |                  |  |
|               | -13-        |               |                        | 2          |            |           | 0.5" CI (5 Y 4/1)                                           |         | 1                |  |
|               | , T         |               |                        | 2          |            |           |                                                             |         |                  |  |
|               | -14-        | CL            |                        | 2          |            |           | CLAY                                                        | 1       | MW-3 (13.5-14')  |  |
|               |             |               | $\sim$                 | WOH        | 12         | 0         | CI (5 Y 4/1)                                                |         |                  |  |
| 1 1           | -15-        |               |                        | WOH<br>N/A | 24         | N/A       | Shelby Tube from 15-17                                      |         |                  |  |
|               | 10          |               | $\mathbf{X}$           | IN/A       | 24         | INVA.     | Shelby Tube from 13-17                                      |         |                  |  |
|               | -16-        |               |                        |            |            |           |                                                             |         |                  |  |
|               | -17         |               |                        |            |            |           |                                                             |         |                  |  |
|               |             |               |                        |            |            |           |                                                             |         |                  |  |
|               | -18-        | i             |                        |            |            |           | End of Boring at 17 Feet                                    |         |                  |  |
|               |             | i             |                        |            |            |           | Bottom of Well at 14 Feet                                   |         |                  |  |
|               | -19-        |               |                        |            |            |           | ·                                                           | -       |                  |  |
|               | ·20-        |               |                        |            |            |           |                                                             |         |                  |  |
|               | ·20·        |               |                        |            |            |           |                                                             |         |                  |  |
|               | -21-        |               |                        |            |            |           |                                                             |         |                  |  |
|               | 1           | j             |                        |            | 1          |           |                                                             |         |                  |  |
|               | -22-        |               |                        |            |            |           |                                                             |         |                  |  |
|               |             |               |                        |            |            |           |                                                             |         |                  |  |
|               | -23-        |               |                        | Ì          |            | 1         |                                                             |         |                  |  |
|               | -24-        |               |                        | ·          |            |           |                                                             |         |                  |  |
|               |             |               |                        |            |            | ļ         |                                                             | [       |                  |  |
| L             | -25-        |               |                        | 1          |            |           |                                                             |         |                  |  |

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SHEET 1 OF 1

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#### MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION (One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |   |
|--------------------|-------------------------------|---|
| Name of Facility:  | Former Front Street Gas Works |   |
| Location:          | McCarter Highway, Newark, NI  | _ |
| NJPDES Permit No.: |                               |   |

### CERTIFICATION

| CERTIFICATION                                      |                  |
|----------------------------------------------------|------------------|
| Well Permit Number:                                | 26-51018-        |
| Owner's Well Number (As shown on the               |                  |
| application or plans):                             | MW-3A            |
| Well Completion Date:                              | July 16, 1998    |
| Distance from Top of Casing (cap off) to           |                  |
| ground surface (one-hundredth of a foot):          | 0.44'            |
| Total Depth of Well to nearest 1/2 foot:           | 29'              |
| Depth to Top of Screen (or Top of Open Hole)       |                  |
| From Top of Casing (one-hundredth of a foot):      | 24'              |
| Screen Length (or length of open hole) in feet:    | 5'               |
| Screen or Slot Size:                               | 0.010            |
| Screen or Slot Material:                           | PVC Sch. 40      |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40      |
| Casing Diameter (inches):                          | 2"               |
| Static Water Level From Top of Casing at the Time  |                  |
| of Installation (one-hundredth of a foot):         | 2.65'            |
| Yield (gallons per minute):                        | <i>≈</i> 1       |
| Development Technique (specify)                    | Submersible Pump |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour           |
| Lithologic Log:                                    | Attached         |
|                                                    |                  |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprise

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

| sionity of the and imprisorment. |          |
|----------------------------------|----------|
| 11211                            |          |
| anture Veluno                    |          |
| SIGNATURE                        | <u> </u> |
|                                  |          |

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CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

DATE

TITLE

### MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

#### THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:                          | 2 6 - 5 1 0 1 8                    |
|----------------------------------------------|------------------------------------|
| (This number must be permanently             |                                    |
| affixed to the well casing.)                 |                                    |
| Longitude (NAD '83):                         | West 74° 09' 56.96"                |
| Latitude (NAD '83):                          | North <u>40° 44' 34.70"</u>        |
| Elevation of Top of Inner Casing (cap off)   |                                    |
| (one-hundredth of a foot.) (NAVD '88):       | 8.38'                              |
| Source of elevation datum (benchmark, etc.)  |                                    |
| and elevation. (If an alternate datum has    |                                    |
| been approved by the Department, identify    |                                    |
| here and give approximated elevation):       | Source: Newark City GPS Mon #89-28 |
|                                              | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application |                                    |
| or plans):                                   | MW-3A                              |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

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I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

MATTHEW L. MARTINI, Land Surveyor License No.. 30088

SEAL

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| Kill               | am          |                |                        |          |            | DR        |                                                                                                          | LOG:     | MW-3A          | <i>,</i> |
|--------------------|-------------|----------------|------------------------|----------|------------|-----------|----------------------------------------------------------------------------------------------------------|----------|----------------|----------|
|                    |             | 1              | <u> </u>               |          |            |           |                                                                                                          |          | 26-51018       |          |
| DATE COMP          | PLETED      |                | July 16,               |          |            |           | PROJECT: PSE&G, Former Front St                                                                          | reet Gas | Works          |          |
| ORILLER:           |             |                | ed Drillin             | -        | porated    |           | LOCATION: Front Street, Newark                                                                           |          |                |          |
| NSPECTOR           |             |                | an B. Sec              | -        |            |           | KILLAM PROJECT NUMBER: 263709                                                                            |          |                |          |
| DRILLING M         |             |                | Hollow S               | Stem A   | uger       |           | STATE CASE NUMBER: N/A                                                                                   | <u> </u> |                |          |
| WELL DEVE          | LOPME       | INT:           |                        |          |            |           |                                                                                                          |          |                |          |
| DATE: 7-2          |             |                |                        |          | : ~1 GPM   | Л         | LAT . LONG:                                                                                              |          |                |          |
| METHOD: S          |             |                | •                      | Cs: N    | I/A        |           | SURVEYED ELEVATIONS:                                                                                     | DATUM:   | ft above MSL   |          |
| ENGTH OF           |             |                |                        | ·        |            |           | TOP OF CASING: 8.38                                                                                      | GROUND   | SURFACE: 8.82  |          |
| SCREEN:            | · ·         |                |                        |          |            |           | SCREEN DEPTH (TOC): 24'                                                                                  | NELL DEF | PTH (TOC): 29' |          |
| RISER: (2          |             |                |                        | 15.5') 6 | "-ID Stee  | I Casing  | WATER DEPTH/DATE: 2.65' / 9-16-98                                                                        |          |                |          |
| COMPLETI           |             | Flushm         | 1                      | r        |            |           | WATER DEPTH/DATE: 2.43 / 10-14-98                                                                        | <u> </u> |                |          |
| WELL               | DEPTH       | SOIL           | SAMPLES                |          | RECOVERY   | FIELD     | VISUAL                                                                                                   |          | COMMENTS       |          |
| CONSTRUCTION       | 1           | CLASS.         | <u> </u>               | COUNTS   | (IN.)      | SCREENING | DESCRIPTION                                                                                              |          |                |          |
| <u>83</u> [3       | -0-         |                |                        | 4        | 8          | 0         | Fill; Shale                                                                                              |          | -              |          |
|                    | 3<br>-1-    |                | $  \rangle$            | 5        |            |           |                                                                                                          |          |                |          |
| 韵 認                |             | 1              | $  \rangle$            | 9        |            |           |                                                                                                          |          | 1              |          |
| 闷 [翻               | -2-         |                | $ \longrightarrow$     | 4        |            |           |                                                                                                          |          |                |          |
| 钧 [翻               |             |                |                        | 4        | 8          | 0         | f-m-c Sd, I. Slt (5 YR 3/4)                                                                              |          |                |          |
| 钧 瞈                | -3-         | 1              |                        | 3        |            |           |                                                                                                          |          |                |          |
| 挖 🕅                | -4-         | ł              | $\square$              | 4        |            |           |                                                                                                          |          |                |          |
| 挖 総                |             |                | $\wedge$               | 2        | 10         | 0         | f-m-c Sd, I. Sit (5 YR 3/4)                                                                              |          |                |          |
| 樹上翻                | -5-         |                |                        |          |            |           | FILL                                                                                                     |          |                |          |
|                    |             |                |                        | 1        |            |           | FILL                                                                                                     |          |                |          |
| 图 総数               | -6-         |                | $\sim$                 | 4        | 11         | 0         | f-m-c Sd, I. Grv, I. Sit (5 YR 3/4)                                                                      |          |                |          |
| 图 88               | -7.         |                |                        | 3        |            |           |                                                                                                          |          |                |          |
|                    |             |                |                        | 3        |            |           |                                                                                                          |          |                |          |
| 図 段                | -8-         |                | $ \longrightarrow$     | 2        | - <u>-</u> | 0         | ( m Ed.a. Cov. v. Jance (amontan / MD 2/4)                                                               |          |                |          |
| \$1   \$ <b>\$</b> |             |                | $\left  \right\rangle$ | 4        | 14<br>6    | U<br>C    | f-m Sd a. Grv, v. loose formation (5 YR 3/4)<br>f-m-c Sd a. Grv, t. Sit; wood in tip of spoon (5 YR 3/4) |          |                |          |
|                    | <b>-</b> 9. |                |                        | 2        | · ·        | ŭ         |                                                                                                          |          |                | Í        |
|                    | -10-        |                |                        | 3        |            |           |                                                                                                          |          |                |          |
|                    |             |                |                        | 2        | 22         | 0         | f-m-c Sd, I. Slt (5 YR 3/4)                                                                              |          |                |          |
| 61 62              | -13-        | SP-SM          |                        | 3        |            |           | Ready Creded SAND with SILT                                                                              |          |                |          |
|                    |             | 3 <b>7~3</b> M |                        | 3        |            |           | Poorly Graded SAND with SILT                                                                             |          |                |          |
|                    | -12-        |                |                        | 3        | 8          | 0         | 7.5" f-m-c Sd (5 YR 3/4)                                                                                 |          |                | 1        |
| 81 82              | -13-        |                |                        | 2        |            |           | 0.5" CI (5 Y 4/1)                                                                                        |          | 1              |          |
|                    |             |                | $  \setminus  $        | 2        |            |           |                                                                                                          |          | 1              |          |
| 图 2数               | -14-        |                | <u> </u>               | 2        | 7          | 0         | Slightly Organia CL/EM 4/11                                                                              |          |                |          |
| 18 - 18 <b>1</b>   |             |                | $  \rangle  $          | 1        | '          | U         | Slightly Organic CI (5 Y 4/1)                                                                            |          |                |          |
| 8 88               | -15-        |                |                        | 1        |            |           |                                                                                                          |          |                |          |
| 3 🗱                | -16-        |                |                        | 1        |            |           |                                                                                                          |          | 1              |          |
| X XX               |             |                |                        |          |            |           |                                                                                                          |          |                |          |
| X 🗱                | -17-        |                | <u></u>                | 2        | 4          | 0         | Slightly Organic CI (5 Y 4/1)                                                                            |          |                |          |
| 3 88               | -18-        |                | $  \rangle$            | 2        | -          | U         | Gignity Organic Or (O T. 4rt)                                                                            |          |                |          |
| 8 XX               | -18-        | CL             |                        | 1        |            |           | CLAY                                                                                                     |          |                |          |
| 8 XX               | -19-        |                | $\square$              | 1        |            |           |                                                                                                          |          |                |          |
| <u> 88</u>         |             |                |                        | N/A      | 24         | 0         | Slightly Organic CI (5 Y 4/1)                                                                            |          |                |          |
| ) XX               | -20-        |                |                        |          |            |           |                                                                                                          |          |                |          |
| 71 🕅               |             |                |                        |          |            |           |                                                                                                          |          |                |          |
|                    | -21.        |                |                        | N/A      | 24         | 0         | Slightly Organic CI (5 Y 4/1)                                                                            |          |                |          |
| 4   4              | -22-        |                |                        |          |            |           |                                                                                                          |          |                |          |
|                    |             |                |                        |          |            |           |                                                                                                          |          |                |          |
|                    | -23-        |                | <u> </u>               | - NVA    | 24         |           | 15" Slightly Organia CL (S.V. 411)                                                                       |          |                |          |
|                    |             |                | $\left  \right\rangle$ | N/A      | 24         | 0         | 15" Slightly Organic Cl (5 Y 4/1)                                                                        |          |                |          |
|                    | -24-        |                |                        |          |            |           | 9" f-m-c Sd a. Grv, I. Slt; Till (5 YR 4/4)                                                              |          |                | ĺ        |
|                    | .25.        |                |                        |          |            |           | GLACIAL TILL                                                                                             |          | 1              | 1        |

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| ™Killam                 |         |            |              |          | C            | RILLI     | NG LOG MW-3A<br>PERMIT: 26-51018                                                                  |                        |                                           |  |
|-------------------------|---------|------------|--------------|----------|--------------|-----------|---------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------|--|
| DATE COMP<br>DRILLER: A | Advance | d Drilling |              |          |              |           | PROJECT: PSE&G, Former Front S<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 | Front Street Gas Works |                                           |  |
| WELL                    | DEPTH   | SOIL       | SAMPLES      |          | RECOVERY     | FIELD     | VISUAL                                                                                            |                        | COMMENTS                                  |  |
| CONSTRUCTION            | (FD_    | CLASS      | <u> </u>     | COUNTS   | <u>(IN.)</u> | SCREENING | DESCRIPTION                                                                                       |                        |                                           |  |
|                         | -25-    |            |              | N/A      | 16           | 0         | f-m-c Sd a. Grv, t. Weathered Siltstone, CI matrix (5 \                                           | YR 5/6)                |                                           |  |
|                         | -26-    |            |              |          |              |           | GLACIAL TILL                                                                                      |                        | -                                         |  |
|                         | -27-    |            | $\leftarrow$ | 100/6    | 2            | 0         | Weathered Sittstone, I, f-m Sd, CI matrix (5 YR 5/6)                                              |                        | MW-3A (26.5-27')<br>Insufficient Recovery |  |
|                         | -28-    |            | $  \rangle$  | <u> </u> |              |           |                                                                                                   |                        |                                           |  |
|                         | -29-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -30-    |            | $\square$    | 100/0    | N/R          | N/R       | Bedrock                                                                                           |                        |                                           |  |
|                         | -31-    |            |              |          |              |           | Bedrock - SILTSTONE                                                                               |                        |                                           |  |
|                         | -32-    |            |              |          |              |           | End of Boring at 31 Feet                                                                          |                        |                                           |  |
|                         | -33-    |            |              |          |              |           | Bottom of Well at 29 Feet                                                                         |                        |                                           |  |
|                         | -34-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         |         |            |              |          |              |           |                                                                                                   |                        |                                           |  |
| Ì                       | -35-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -36-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -37-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -38-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -39-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -40-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
| l i                     | -41-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -42-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -43-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -44-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -45-    |            | ļ            |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -46-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -47-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -48-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -49-    |            |              |          |              |           |                                                                                                   | <b></b>                |                                           |  |
|                         | -50-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -51-    |            |              |          |              | Í         |                                                                                                   |                        |                                           |  |
|                         | -52-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | -53-    |            |              |          |              |           |                                                                                                   |                        |                                           |  |
|                         | •54-    |            | 1            |          |              |           |                                                                                                   |                        |                                           |  |
|                         | •55-    |            | :            |          |              |           |                                                                                                   |                        |                                           |  |

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Sheet 2 of 2

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## MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION

(One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |  |
|--------------------|-------------------------------|--|
| Name of Facility:  | Former Front Street Gas Works |  |
| Location:          | McCarter Highway, Newark, NI  |  |
| NJPDES Permit No.: |                               |  |

### **CERTIFICATION**

| CERTIFICATION                                      |                  |
|----------------------------------------------------|------------------|
| Well Permit Number:                                | <u>26-51019-</u> |
| Owner's Well Number (As shown on the               |                  |
| application or plans):                             | MW-3BR           |
| Well Completion Date:                              | luly 31, 1998    |
| Distance from Top of Casing (cap off) to           |                  |
| ground surface (one-hundredth of a foot):          | 0.25'            |
| Total Depth of Well to nearest 1/2 foot:           | 55'              |
| Depth to Top of Screen (or Top of Open Hole)       |                  |
| From Top of Casing (one-hundredth of a foot):      | 35'              |
| Screen Length (or length of open hole) in feet:    | 20'              |
| Screen or Slot Size:                               | 0.010            |
| Screen or Slot Material:                           | PVC Sch. 40      |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40      |
| Casing Diameter (inches):                          | 2"               |
| Static Water Level From Top of Casing at the Time  | -                |
| of Installation (one-hundredth of a foot):         | 4.05'            |
| Yield (gallons per minute):                        | ≈2               |
| Development Technique (specify)                    | Submersible Pump |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour           |
| Lithologic Log:                                    | Attached         |
|                                                    |                  |

### AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisorment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

IGNATURE

<u>258-E</u>

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

DATE

SEAL

TITLE

# MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

# THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee:PSE&GName of Facility:MGP-017 - Front StreetLocation:McCarter Highway, Newark, New Jersey

#### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:                          | 2 6 - 5 1 0 1 9                    |
|----------------------------------------------|------------------------------------|
| (This number must be permanently             |                                    |
| affixed to the well casing.)                 |                                    |
| Longitude (NAD '83):                         | West <u>74° 09' 56.97"</u>         |
| Latitude (NAD '83):                          | North <u>40° 44' 34.77"</u>        |
| Elevation of Top of Inner Casing (cap off)   |                                    |
| (one-hundredth of a foot.) (NAVD '88):       | - <u></u>                          |
| Source of elevation datum (benchmark, etc.)  |                                    |
| and elevation. (If an alternate datum has    |                                    |
| been approved by the Department, identify    |                                    |
| here and give approximated elevation):       | Source: Newark City GPS Mon #89-28 |
|                                              | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application |                                    |
| or plans):                                   | MW-3BR                             |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

#### AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

MATTHEW L. MARTINI, Land Surveyor License No.. 30088

SEAL

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| ™Killa                                                                      | m     |           |                        |          |            | DR        | ILLING LOG                                               | LOG:      | MW-3BR         | ,  |  |
|-----------------------------------------------------------------------------|-------|-----------|------------------------|----------|------------|-----------|----------------------------------------------------------|-----------|----------------|----|--|
|                                                                             |       |           | 1.1.0                  | 1000     |            |           | PERMIT: 26-51019                                         |           |                |    |  |
|                                                                             | LETED |           | July 31                | -        |            |           | PROJECT: PSE&G, Former Front S                           | treet Gas | Works          |    |  |
| DRILLER: Advanced Drilling Incorporated<br>INSPECTOR: Jonathan B. Seckinger |       |           |                        |          |            |           | LOCATION: Front Street, Newark                           |           |                |    |  |
| INSPECTOR: Jonathan B. Seckinger<br>DRILLING METHOD: Mud Rotary             |       |           |                        |          |            |           | KILLAM PROJECT NUMBER: 263709                            |           |                |    |  |
|                                                                             |       |           | iviua Ro               | stary    |            |           | STATE CASE NUMBER: N/A                                   |           |                |    |  |
|                                                                             |       | :NT:      |                        |          |            |           |                                                          |           |                |    |  |
| DATE: 8-1                                                                   |       | -ible Due |                        |          | ): ~ 2 GPI | M         |                                                          |           |                |    |  |
| IETHOD: S<br>ENGTH OF                                                       |       |           | •                      | Cs: I    | N/A        |           | SURVEYED ELEVATIONS:<br>TOP OF CASING: 8.81              |           | ft MSL         |    |  |
| CREEN:                                                                      |       |           |                        | C 10     | elot       |           |                                                          |           | SURFACE: 9.04  |    |  |
| SISER: (35                                                                  |       |           |                        |          |            | Casina    | WATER DEPTH/DATE: 4.05' / 9-16-98                        | WELL DE   | PTH (TOC): 55' |    |  |
|                                                                             |       | Flushn    |                        | (00)0    | -ID Steel  | Casing    | WATER DEPTH/DATE: 8.14' / 10-14-98                       |           |                |    |  |
| WELL                                                                        | DEPTH | SOIL      | SAMPLES                | BLOW     | RECOVERY   | FIELD     | VISUAL                                                   |           | COMMENTS       |    |  |
| ONSTRUCTION                                                                 | (FT)  | CLASS.    |                        | COUNTS   | (IN.)      | SCREENING | DESCRIPTION                                              |           |                |    |  |
| स्ट्रान्स्ट                                                                 | -0-   | ┣───      | <u> </u>               | 4        | 8          | 0         | Fill; Shale                                              | ·         |                |    |  |
| 8 KX                                                                        | -1-   |           | $\left  \right\rangle$ | 5        | °          |           | ra, snale                                                |           |                |    |  |
| 3 KX                                                                        | - 1-  |           |                        | 9        | ]          |           |                                                          |           |                |    |  |
| 1 88                                                                        | -2-   |           |                        | 4        |            |           |                                                          |           |                |    |  |
|                                                                             | _     |           | $\left  \right\rangle$ | 4        | 8          | 0         | f-m-c Sd, I. Sit (5 YR 3/4)                              |           |                |    |  |
|                                                                             | -3-   |           |                        | 3        | 1          |           |                                                          |           |                |    |  |
| ) (X                                                                        | -4-   | ł         |                        | 4        | 1          |           |                                                          |           |                |    |  |
| 3 88                                                                        |       |           | $\mathbb{N}^{-}$       | 2        | 10         | D         | ím-c Sd, I. Sit (5 YR 3/4)                               |           |                |    |  |
| 3 88                                                                        | -5-   |           |                        | 1        | 1          |           | FILL                                                     |           |                |    |  |
| 8 88                                                                        | -6-   |           |                        | 1        |            |           |                                                          |           |                |    |  |
|                                                                             | •     |           | $\backslash$           | 4        | 11         | 0         | f-m-c Sd, I. Grv, I. Sit (5 YR 3/4)                      |           |                |    |  |
|                                                                             | -7-   |           |                        | 3        |            |           |                                                          |           |                | 1  |  |
|                                                                             |       |           |                        | 3        |            |           |                                                          |           |                |    |  |
| 3 88                                                                        | -8-   |           |                        | 4        | 14         | 0         | f-m Sd a. Grv, v. loose formation (5 YR 3/4)             |           |                |    |  |
| 3 188                                                                       | -9-   |           |                        | 3        | 6          | 0         | f-m-c Sd a. Grv, t. Slt; wood in tip of spoon (5 YR 3/4) |           |                | Í  |  |
| 3 88                                                                        |       | Í         |                        | 2        |            |           |                                                          |           |                |    |  |
| 3 88                                                                        | -10-  |           |                        | 2        | 22         | 0         | I-m-c Sd, I. Sit (5 YR 3/4)                              |           |                |    |  |
| 3 🔯                                                                         | -11-  |           |                        | 3        |            |           |                                                          |           | -              | 1  |  |
| 3 (88                                                                       |       | SP-SM     |                        | 3        |            |           | Poorly Graded SAND with SILT                             |           |                |    |  |
| 1 88                                                                        | -12-  |           |                        | 3        | 8          | 0         | 7.5 "f-m-c Sd (5 YR 3/4)                                 |           |                | Į  |  |
|                                                                             | -13-  |           | $\mathbf{X}$           | 2        |            |           | 0.5 °Cl (5 Y 4/1)                                        |           |                | Í  |  |
|                                                                             |       | ~         | $\mathbf{X}$           | 2        |            |           |                                                          |           |                | ł  |  |
|                                                                             | -14-  | CL        | $\overline{}$          | 2<br>WOH | 12         | 0         | CLAY<br>CI (5 Y 4/1)                                     |           | ļ              | Í  |  |
| 3 BB                                                                        | -15-  |           |                        |          | 12         | Ŭ         |                                                          |           | 1              |    |  |
|                                                                             |       |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             | -16-  |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             | -17-  |           |                        | <u> </u> |            |           |                                                          |           |                |    |  |
|                                                                             | -1/-  |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             | -18-  |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             |       |           | }                      |          |            |           |                                                          |           |                |    |  |
|                                                                             | -19-  |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             | -20-  |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             |       |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             | -21-  | ĺ         | ŀ                      |          |            |           |                                                          |           |                |    |  |
|                                                                             |       |           | ŀ                      |          |            |           |                                                          |           |                |    |  |
|                                                                             | -22-  |           |                        |          |            |           |                                                          |           |                |    |  |
|                                                                             | -23-  |           | ĺ                      |          |            | ł         |                                                          |           |                |    |  |
|                                                                             |       |           | -                      |          |            |           |                                                          |           |                |    |  |
|                                                                             | •24-  |           | ŀ                      |          |            |           |                                                          |           |                | 1  |  |
| 1 ESS-                                                                      | .25.  |           | 1                      |          |            |           |                                                          |           |                | Ĵ, |  |

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| Killa                  | m          |            |              |                | NGLOG | DG: MW-3BR<br>ERMIT: 26-51019 |                                                                                                                        |                                             |       |
|------------------------|------------|------------|--------------|----------------|-------|-------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|-------|
| ATE COMPI<br>RILLER: A | dvance     | d Drilling |              | ated           |       |                               | PROJECT: PSE&G, Former Front Street Gas Works<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709       |                                             |       |
| WELL                   | DEPTH      | SOIL       | SAMPLES      | BLOW<br>COUNTS | RQD   | FIELD                         |                                                                                                                        | COMMENTS                                    |       |
|                        | ۲۳۱<br>-25 | CLASS      |              | COUNTS         |       | SCREENING                     | DESCRIPTION                                                                                                            |                                             |       |
|                        |            |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -26-       |            | i            |                |       |                               |                                                                                                                        |                                             |       |
|                        | -27-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -28-       |            |              |                |       |                               | Bedrock at 28 Feet                                                                                                     |                                             |       |
|                        | -29-       |            |              |                |       |                               | Beuruck al zo reel                                                                                                     |                                             |       |
|                        |            |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -30-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -31-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -32-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -33-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -34-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        |            |            | $\backslash$ |                | 44%   |                               | (5 YR 3/4) Shale Siltstone                                                                                             |                                             |       |
|                        | -35-       |            | $\backslash$ |                |       |                               |                                                                                                                        | L                                           |       |
|                        | -36-       |            |              |                |       |                               | Horizontally fractured @ 36' (~45* angle), not significant<br>weathered in Shale/Mudstone (5GY 6/1),                   | iy .                                        |       |
|                        | -37-       |            |              |                | 29%   | -                             | moderate weathering<br>(5 YR 3/4) f. grained Sandstone; non-distinct contact                                           | pore spaces second                          | laril |
|                        | -38-       |            | $\mathbf{i}$ |                | 2376  |                               | between shale and sandstone;                                                                                           | mineralized with 5YF                        | R 8/  |
|                        |            |            |              |                |       |                               | sandstone moderately porous (1/16") to (3/16")<br>~ 45° angle @ 38.8' ; no weathering                                  | calcite to 5GY6/1 ch<br>numerous horz, frac |       |
|                        | -39-       |            | $\backslash$ |                | 64%   |                               | (5 YR 3/4) Siltstone horizontally fractured;                                                                           |                                             |       |
|                        | -40-       |            | $\setminus$  |                |       |                               | no significant weathering                                                                                              |                                             |       |
|                        | -41-       |            |              |                |       | ŀ                             | - 45° fracture @ 41'; no weathering                                                                                    | coal tar product in fr                      | actu  |
|                        | -42-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        |            |            |              |                |       |                               | horizontal fracture @ approximately 43'<br>v. porous f-m grained friable Sandstone                                     |                                             |       |
|                        | -43-       |            |              |                |       |                               | Horizontal fracture from 43.3-43.8'; no weathering                                                                     |                                             |       |
|                        | -44-       |            | \)           |                | 56%   |                               | (5 YR 3/4) f-m grained Sandstone; friable; v. porous                                                                   |                                             |       |
|                        | -45-       |            | $\backslash$ |                |       |                               | 75° fracture @ 44.5'; black staining; no noticeable weath<br>75° fracture @ 45'; black staining; no noticeable weather |                                             |       |
|                        | -46-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        | -47-       |            |              |                |       |                               |                                                                                                                        |                                             |       |
|                        |            |            |              |                |       |                               | 75* fracture @ 47.6'; black staining; no noticeable weath                                                              | ering                                       |       |
|                        | -48-       |            |              |                |       |                               | - 75° fracture @ 48.5'                                                                                                 | @ ~ 48.5' tar globs                         |       |
|                        | -49-       |            |              |                | 55%   | ł                             | 49-52' (5 YR 3/4) f-m grained Sandstone; friable; v. poro                                                              | (1/16" - 2/16")<br>us                       |       |
|                        | -50-       |            | $\backslash$ |                |       |                               | · -                                                                                                                    |                                             |       |
|                        | -51-       |            | $\setminus$  |                |       |                               |                                                                                                                        |                                             |       |
|                        |            |            |              |                |       |                               | @ 51' highly fractured; broken up zones                                                                                |                                             |       |
|                        | -52-       |            |              |                |       |                               | two weathered fractures at 52 & 52.5'                                                                                  | ab                                          |       |
|                        | -53-       |            |              |                |       |                               | 52-54' (5 YR 3/4) Sittstone; 8 horizontal fractures                                                                    | sheens observed in<br>most fractures        |       |
|                        | -54-       |            |              |                |       | -                             | (see next page for description of 54' to 59' interval)                                                                 |                                             |       |
|                        | -55-       |            |              |                |       |                               |                                                                                                                        |                                             |       |

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| ¤Killa                  | <b>Nulatin</b> |               |                                    |                |     | RILLI              | NGLOG                                                                                                            | LOG:    | MW-3BR<br>: 26-51019     |  |
|-------------------------|----------------|---------------|------------------------------------|----------------|-----|--------------------|------------------------------------------------------------------------------------------------------------------|---------|--------------------------|--|
| DATE COMP<br>DRILLER: A | Advance        | d Drillir     | 31, 1998<br>ng Incorpo<br>Seckinge |                |     |                    | PROJECT: PSE&G, Former Front Street Gas Works<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |         |                          |  |
| WELL<br>CONSTRUCTION    | DEPTH<br>(FT)  | SOIL<br>CLASS | SAMPLES                            | BLOW<br>COUNTS | RQD | FIELD<br>SCREENING | VISUAL<br>DESCRIPTION                                                                                            |         | COMMENTS                 |  |
| ]                       | -54-           |               | <u> </u>                           |                | 98% |                    | (5 YR 3/4) Siltstone                                                                                             |         | -                        |  |
|                         | -55-           |               | $\left  \right\rangle$             |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -56-           |               | $  \rangle$                        |                |     |                    | ~ 75* fracture @ 56'; little/no evidence of weathering;                                                          |         |                          |  |
|                         | •57-           |               |                                    |                | •   |                    | 57-58.5' verticle fracture; no weathering                                                                        |         |                          |  |
|                         | -58-           |               | $  \setminus$                      |                |     |                    | @ 58.5' sheen in horizontal fracture                                                                             |         |                          |  |
|                         | -59-           |               |                                    |                | 0%  |                    | (5 YR 3/4) Siltstone; highly fractured; horizontal fract                                                         | ures    |                          |  |
|                         | -60-           |               |                                    |                | 45% | <u> </u> _         | (5 YR 3/4) Siltstone; slight sheen @ horizontal fractur                                                          | res;    |                          |  |
|                         | -61-           |               | $  \rangle  $                      |                |     |                    | @ 60-61.5' weathered fractures                                                                                   |         |                          |  |
|                         | -62-           |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -63-           |               | $\setminus$                        |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -64-           |               |                                    |                | 69% |                    | (5 YR 3/4) Siltstone                                                                                             |         | sheen in horizontal      |  |
|                         | -65-           |               |                                    |                |     |                    | @ 65-65.5' highly fractured; weathered                                                                           |         | fractures; slight odor   |  |
|                         | -66-           |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -67-           | :             |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -68-           |               | $\setminus$                        |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -69-           | ţ             | $\overline{)}$                     | ŀ              | 97% |                    | (5 YR 3/4) Siltstone; few non-weathered horizontal fra calcite deposits                                          | ctures; | Sheen @ 71.6' horizontal |  |
| 1                       | -70-           |               |                                    |                |     |                    |                                                                                                                  |         | fracture                 |  |
|                         |                |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -72-           |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -73-           |               | N                                  |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -74-           | Ī             |                                    |                | 85% |                    | (5 YR 3/4) Siltstone; occasional chlorite clasts;<br>~ 45* fractures @ 74.8 & 75'; non-weathered;                |         |                          |  |
|                         | -76-           |               | $\setminus$                        |                |     |                    | slightly weathered horizontal fracture @ 75.2';<br>~ 25* fracture @ 75.5'; non-weathered                         |         |                          |  |
|                         | -77-           |               |                                    |                | ĺ   |                    |                                                                                                                  |         |                          |  |
|                         | -78-           |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -79-           |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | -80-           | Γ             | $\backslash$                       |                | 83% |                    | (5 YR 3/4) Siltstone<br>vertical fracture @ 79.1-79.5'; calcite deposits                                         |         |                          |  |
|                         | -81-           |               |                                    |                |     |                    | horizontal, weathered fracture @ 79.5'                                                                           |         |                          |  |
|                         | -82-           |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |
|                         | 83-            |               |                                    |                |     |                    |                                                                                                                  |         |                          |  |

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| K:11-               | m             |               |              |                | C     | RILLI              | NG LOG                                                                                     | LOG:        | MW-3BR                  |
|---------------------|---------------|---------------|--------------|----------------|-------|--------------------|--------------------------------------------------------------------------------------------|-------------|-------------------------|
|                     | ull           |               |              |                |       |                    |                                                                                            |             | 26-51019                |
| ATE COMP<br>RILLER: | \dvance       | d Drillir     |              | rated          |       |                    | PROJECT: PSE&G, Former Front S<br>LOCATION: Front Street, Newark                           | Street Gas  | Works                   |
| SPECTOR             |               | T             | Seckinge     | T              |       | 1                  | KILLAM PROJECT NUMBER: 263709                                                              |             |                         |
| WELL                | DEPTH<br>(FT) | SOIL<br>CLASS | SAMPLES      | BLOW<br>COUNTS | ROD   | FIELD<br>SCREENING | VISUAL<br>DESCRIPTION                                                                      |             | COMMENTS                |
|                     | -84-          |               |              |                |       |                    |                                                                                            |             |                         |
|                     |               |               | Λ            |                | 75%   | -                  | (5 YR 3/4) Siltstone; occasional chlorite clasts;<br>~ 20° fracture @ 84.6'; no weathering |             |                         |
|                     | -85-          |               | $  \rangle$  |                |       |                    |                                                                                            |             |                         |
|                     | -86-          |               | $  \rangle$  |                |       |                    | ~ 60° non-uniform fracture @ 86.4-86.7'                                                    |             |                         |
|                     | -87-          |               | $  \rangle$  |                |       |                    |                                                                                            |             |                         |
|                     | •             |               |              |                |       |                    | two perpendicular 45° fractures @ 87' and 87.5'                                            |             |                         |
|                     | -88-          |               | $  \rangle$  |                |       |                    | 88-89' well weathered vuggy siltstone;                                                     |             | }                       |
|                     | -89-          |               | <u> </u>     |                | 73%   | <b> </b> •         | vugs filled with calcite/chlorite                                                          |             |                         |
|                     | -90-          |               | Ν            |                | 1.376 |                    | (5 YR 3/4) Siltstone<br>89-89.5' vuggy Silstone                                            |             |                         |
|                     | -90-          |               | \.<br>       |                |       |                    |                                                                                            |             |                         |
|                     | -91-          |               | $  \rangle$  |                |       |                    | weathered horizontal fracture @ 91.8'                                                      |             |                         |
|                     | -92-          |               |              |                |       |                    | 92-93' crossbedding in Siltstone                                                           |             |                         |
|                     |               |               |              |                |       |                    | 92.6' fractured zone                                                                       |             | heavy sheen on rock     |
|                     | -93-          |               |              |                |       |                    | 93.1' weathered fracture                                                                   |             | heavy sheen (2.1 ppm)   |
|                     | -94-          |               | <u> </u>     |                | 54%   |                    | (5 YR 3/4) Siltstone                                                                       |             |                         |
|                     | -95-          |               |              |                | 54 70 |                    | 94.5-95.8' heavily fractured, slightly weathered                                           |             | visible product,        |
|                     | -33-          |               | $  \rangle$  |                |       |                    |                                                                                            |             | heavy sheen, strong odd |
|                     | •96-          |               |              |                |       |                    |                                                                                            |             |                         |
|                     | -97-          |               |              |                |       |                    |                                                                                            |             |                         |
|                     | -98-          |               |              |                |       |                    |                                                                                            |             |                         |
|                     | -90-          |               |              |                |       | -                  |                                                                                            |             |                         |
|                     | -99-          |               | <u> </u>     |                | 76%   | <u> </u>           | (5 YR 3/4) Siltstone                                                                       |             | While drilling 99-104'  |
|                     | -100          |               | $\backslash$ |                |       |                    | 99.5' horizontal fracture; heavy sheen; strong MGP or                                      | lor;        | heavy product found     |
| ·                   |               |               |              |                |       |                    |                                                                                            |             | in drilling fluid       |
|                     | -101          |               |              |                |       |                    | ~ 45* fracture @ 101'; calcite deposits                                                    |             |                         |
|                     | -102-         |               |              |                |       |                    |                                                                                            |             |                         |
|                     | -103          |               |              |                |       |                    |                                                                                            |             |                         |
|                     |               |               | $  \rangle$  |                |       |                    | @ 103' Siltstone grades into f. grained Sandstone                                          |             |                         |
|                     | -104-         |               |              | ŀ              | 60%   |                    | (5 YR 3/4) f. grained Sandstone grades into Siltstone.                                     | at approxim | ļ                       |
|                     | -105-         |               |              |                |       |                    |                                                                                            |             | ļ                       |
|                     | -106-         |               |              |                |       |                    |                                                                                            |             |                         |
|                     |               |               |              |                |       |                    | @ 106.5' Siltstone grades into f. grained Sandstone                                        |             |                         |
|                     | -107-         |               |              |                |       |                    | vertical fracture @ 107'; calcite crystaline deposits                                      |             | heavy product           |
|                     | -108          |               |              |                |       |                    |                                                                                            |             |                         |
|                     |               |               |              |                |       |                    |                                                                                            |             |                         |
|                     | -109-         |               | $\backslash$ | ŀ              | 59%   |                    | (5 YR 3/4) Siltstone; numerous horizontal fractures;                                       |             |                         |
|                     | -110-         |               | $\backslash$ |                |       |                    | @ 109.1' vertical fracture from 106.5 ends<br>~ 46* fracture @ 111', slightly weathered    |             |                         |
|                     | -111          |               |              |                |       |                    | ~ 25° fracture @ 111.5'                                                                    |             | tar has smeared down    |
|                     |               |               |              |                |       |                    |                                                                                            |             | into core sample        |
|                     | -112          |               |              |                |       |                    |                                                                                            |             |                         |
|                     | -113          |               | \            |                |       |                    |                                                                                            |             | 1                       |

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| <sup>⊯</sup> Killa   | am                                  | D: July 31, 1998<br>need Drilling Incorporated |         |                |     |                    | NG LOG                                                                                                    | LOG:     | MW-38R                               |
|----------------------|-------------------------------------|------------------------------------------------|---------|----------------|-----|--------------------|-----------------------------------------------------------------------------------------------------------|----------|--------------------------------------|
| ATE COMP             | LETED                               |                                                |         |                |     |                    | PROJECT: PSE&G, Former Front Street Ga<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |          | <u>r: 26-51019</u><br>is Works       |
| WELL<br>CONSTRUCTION | DEPTH                               | SOIL<br>CLASS.                                 | SAMPLES | BLOW<br>COUNTS | RQD | FIELD<br>SCREENING | VISUAL                                                                                                    |          | COMMENTS                             |
| •                    | -11<br>-11<br>5-<br>-11<br>6-       |                                                |         |                | 95% |                    | (5 YR 3/4) Siltstone interbedded with fine grained sa<br>3 horizontal fractures                           | ndstone; | sheen observed on<br>outside of core |
|                      | -11<br>7-<br>-11<br>8-<br>-11<br>9- | :                                              |         |                | 75% |                    | (5 YR 3/4) Siltstone with 7 horizontal fractures                                                          |          |                                      |
|                      | -12<br>0-<br>-12<br>1-<br>-12<br>2- |                                                |         |                |     |                    | vertical fracture @ 123.6'                                                                                |          | little staining and<br>MGP odor      |
|                      | -123-<br>-124                       |                                                |         |                |     |                    | ······································                                                                    |          |                                      |
|                      | -125-                               |                                                |         |                |     |                    | End of Boring at 124 Feet<br>Bottom of Well at 55 Feet                                                    |          |                                      |
|                      | -126                                |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | •127-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -128                                |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -129-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -130-                               |                                                | [       |                |     |                    |                                                                                                           |          |                                      |
|                      | -131-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -132-                               | ľ                                              |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -133-<br>-134-                      |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -134-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -135-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
| ļ                    | -137-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -138-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -139-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -140-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -141-                               |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -142                                |                                                |         |                |     |                    |                                                                                                           |          |                                      |
|                      | -143-                               |                                                | 1       |                |     |                    |                                                                                                           |          |                                      |

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Sheet 5 of 5

# MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION

(One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |
|--------------------|-------------------------------|
| Name of Facility:  | Former Front Street Gas Works |
| Location:          | McCarter Highway, Newark, NI  |
| NIPDES Permit No.: |                               |

#### **CERTIFICATION**

| CERTIFICATION                                      |                  |
|----------------------------------------------------|------------------|
| Well Permit Number:                                | 26-51020-        |
| Owner's Well Number (As shown on the               |                  |
| application or plans):                             | MW-4BR           |
| Well Completion Date:                              | August 11, 1998  |
| Distance from Top of Casing (cap off) to           |                  |
| ground surface (one-hundredth of a foot):          | 0.25'            |
| Total Depth of Well to nearest 1/2 foot:           | <u>62'</u>       |
| Depth to Top of Screen (or Top of Open Hole)       |                  |
| From Top of Casing (one-hundredth of a foot):      | 42'              |
| Screen Length (or length of open hole) in feet:    | 20'              |
| Screen or Slot Size:                               | 0.010            |
| Screen or Slot Material:                           | PVC Sch. 40      |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40      |
| Casing Diameter (inches):                          | 2"               |
| Static Water Level From Top of Casing at the Time  |                  |
| of Installation (one-hundredth of a foot):         | 7.65'            |
| Yield (gallons per minute):                        | ≈2               |
| Development Technique (specify)                    | Submersible Pump |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour           |
| Lithologic Log:                                    | <u>Attached</u>  |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

SIGNATURE

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

TITLE

DATE

SEAL

# MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

# THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

Name of Permittee: PSE&G Name of Facility: MGP-017 - Front Street Location: McCarter Highway, Newark, New Jersey

# LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:                          | 2 6 - 5 1 0 2 0                    |
|----------------------------------------------|------------------------------------|
| (This number must be permanently             |                                    |
| affixed to the well casing.)                 |                                    |
| Longitude (NAD '83):                         | West 74° 09' 58.53"                |
| Latitude (NAD '83):                          | North <u>40° 44' 34.67"</u>        |
| Elevation of Top of Inner Casing (cap off)   |                                    |
| (one-hundredth of a foot.) (NAVD '88):       | 13.28'                             |
| Source of elevation datum (benchmark, etc.)  |                                    |
| and elevation. (If an alternate datum has    |                                    |
| been approved by the Department, identify    |                                    |
| here and give approximated elevation):       | Source: Newark City GPS Mon #89-28 |
|                                              | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application |                                    |
| or plans):                                   | MW-4BR                             |

or plans):

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

#### AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

ATTHEW L. MARTIN, Land Surveyor License No.. 30088

SEAL

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| <sup>¤</sup> Killa                                              | m          |        |         |          |          | DR        | ILLING LOG                         | LOG:<br>PERMIT: | MW-4BR<br>26-51020                                             |
|-----------------------------------------------------------------|------------|--------|---------|----------|----------|-----------|------------------------------------|-----------------|----------------------------------------------------------------|
|                                                                 |            |        | August  | 11 199   | 98       |           | PROJECT: PSE&G Former Front S      |                 |                                                                |
| DRILLER: Advanced Drilling Incorporated                         |            |        |         |          |          |           | LOCATION: Front Street, Newark     |                 |                                                                |
|                                                                 |            |        |         |          |          |           | KILLAM PROJECT NUMBER: 263709      |                 |                                                                |
| INSPECTOR: Jonathan B. Seckinger<br>DRILLING METHOD: Mud Rotary |            |        |         |          |          |           | STATE CASE NUMBER: N/A             |                 |                                                                |
|                                                                 |            |        |         | uary     |          |           | STATE CASE ROMDER. N/A             |                 |                                                                |
| VELL DEVEL                                                      |            |        |         |          |          |           |                                    |                 |                                                                |
| DATE: 8-1                                                       |            |        |         |          | : 2 GPM  |           | LAT LONG:                          |                 |                                                                |
| METHOD: S                                                       |            |        |         | Cs: N    | I/A      |           | SURVEYED ELEVATIONS:               | DATUM:          | ft MSL                                                         |
| ENGTH OF                                                        |            |        |         |          |          |           | TOP OF CASING: 13.28               |                 | SURFACE: 13.53                                                 |
| CREEN:                                                          |            |        |         |          |          | _         | SCREEN DEPTH (TOC): 42'            | WELL DEP        | PTH (TOC): 62'                                                 |
| RISER: (42                                                      | •          |        |         | 37') 6"- | ID Steel | Casing    | WATER DEPTH/DATE: 7.65' / 9-16-98  |                 |                                                                |
| OMPLETI                                                         |            | Flushm |         |          |          |           | WATER DEPTH/DATE: 8.14' / 10-14-98 |                 | r                                                              |
| WELL                                                            | DEPTH      | SOIL   | SAMPLES | BLOW     | RECOVERY |           |                                    |                 | COMMENTS                                                       |
| CONSTRUCTION                                                    | (FT)       | CLASS. |         | COUNTS   | (IN.)    | SCREENING | DESCRIPTION                        |                 |                                                                |
|                                                                 | -0-<br>-1- |        |         |          |          |           |                                    |                 | Split-spoon samples<br>not collected in<br>overburden deposits |
|                                                                 | -2-        |        |         |          |          |           |                                    | i               | overburden deposits                                            |
|                                                                 | -3-        |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -4-        |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -5-        |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -6-        |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -7-        |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -8-<br>-9- |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -10-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -11-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | •12-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | +13-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -14-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -15-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -16-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -17-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -19-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -20-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -21-       |        | 1       |          |          |           |                                    |                 |                                                                |
|                                                                 | -22-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | •23-       |        |         |          |          |           |                                    |                 |                                                                |
|                                                                 | -24-       |        |         |          |          |           |                                    |                 |                                                                |

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Sheet 1 of 3

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| Killam DRILLI                                                                                                 |             | NG LOG | LOG:                                                                                                             | MW-4BR |     |           |                                                                                       |        |                                    |
|---------------------------------------------------------------------------------------------------------------|-------------|--------|------------------------------------------------------------------------------------------------------------------|--------|-----|-----------|---------------------------------------------------------------------------------------|--------|------------------------------------|
|                                                                                                               | ull         |        |                                                                                                                  |        | L   |           |                                                                                       | PERMIT | : 26-51020                         |
| DATE COMPLETED: August 11, 1998<br>DRILLER: Advanced Dritting Incorporated<br>VSPECTOR: Jonathan B. Seckinger |             |        | PROJECT: PSE&G, Former Front Street Gas Works<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 |        |     |           |                                                                                       |        |                                    |
| VELL                                                                                                          | DEPTH       | SOIL   | SAMPLES                                                                                                          | BLOW   | RQD | FIELD     | VISUAL                                                                                |        | COMMENTS                           |
| FRUCTION                                                                                                      | <u>(FT)</u> | CLASS. | <b> </b>                                                                                                         | COUNTS |     | SCREENING | DESCRIPTION                                                                           |        |                                    |
|                                                                                                               | -25         |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -26-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -27-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -214        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -28-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -29-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -30-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               |             |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -31-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -32-        |        |                                                                                                                  |        | ,   |           |                                                                                       |        | _                                  |
|                                                                                                               | -33-        |        |                                                                                                                  |        |     | · ·       | Bedrock at 32 Feet                                                                    |        |                                    |
|                                                                                                               | -33-        |        |                                                                                                                  |        |     |           | 2                                                                                     |        |                                    |
|                                                                                                               | -34-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -35-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -36-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | .30.        |        |                                                                                                                  | ĺ      |     |           |                                                                                       |        |                                    |
|                                                                                                               | -37-        |        |                                                                                                                  | F      | 0%  |           | (5 YR 3/4) Siltstone                                                                  |        | strong MGP odor, sheen             |
|                                                                                                               | -38-        |        |                                                                                                                  |        |     |           |                                                                                       |        | oil nodules                        |
|                                                                                                               | -39-        |        |                                                                                                                  |        |     |           |                                                                                       |        | very poor recovery                 |
|                                                                                                               | -35-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -40-        | Ì      |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -41-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -42-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | 42.         | Í      | $\langle $                                                                                                       | ſ      | 37% |           | (5 YR 3/4) Siltstone; numerous horizontal fractures                                   |        | sheen                              |
|                                                                                                               | -43-        |        | $\setminus$                                                                                                      |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -44-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -45-        |        | $\langle   \rangle$                                                                                              |        |     |           |                                                                                       |        | oil nodules in fractures<br>at 44' |
|                                                                                                               |             |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |
|                                                                                                               | -46-        | ł      |                                                                                                                  | -      | 0%  |           | Weathered (5 YR 3/4) Siltstone with horizontal                                        |        |                                    |
| 3                                                                                                             | -47-        |        | $ \rightarrow $                                                                                                  | Ļ      |     |           | unweathered fractures, fracture zone @ 46                                             |        |                                    |
|                                                                                                               | -48-        | ſ      | $\setminus$                                                                                                      |        | 66% |           | (5 YR 3/4) Siltstone                                                                  |        |                                    |
|                                                                                                               |             |        | $\setminus$                                                                                                      |        |     |           | fractured rock @ 47-47.8                                                              |        |                                    |
|                                                                                                               | -49-        |        |                                                                                                                  |        |     |           | (numerous fractures, varying angles)<br>highly weathered horizontal fracture @ 49.3   |        |                                    |
|                                                                                                               | •50-        |        |                                                                                                                  |        |     |           | - 75° fracture @ 49.7-50.3'                                                           |        |                                    |
|                                                                                                               | 51          |        |                                                                                                                  |        |     |           | (Siltstone appears gray around fracture)                                              |        |                                    |
|                                                                                                               | -51-        |        |                                                                                                                  |        |     | Ì         |                                                                                       |        |                                    |
|                                                                                                               | -52-        |        | <u> </u>                                                                                                         |        | 53% |           | (5 YR 3/4) Siltstone                                                                  |        |                                    |
|                                                                                                               | -53-        |        | $\setminus$                                                                                                      |        |     |           | fracture zone @ 52'                                                                   |        |                                    |
|                                                                                                               | 5.4         |        | $\setminus$                                                                                                      |        |     |           | (numerous horizontal fractures throughout interval)<br>vertical fracture @ 54.3-54.6' |        | MGP Odor                           |
|                                                                                                               | -54-        |        | $\setminus$                                                                                                      |        |     |           | slightly weathered horizontal fracture @ 55.6                                         |        |                                    |
| -                                                                                                             | -55-        |        |                                                                                                                  |        |     |           |                                                                                       |        |                                    |

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| ™Kill    | am                                   |                                                                        |         |  | [   | DRILLI             | NG LOG                                                                                                                                                                                                       | LOG:       | MW-4BR<br>26-51020 |
|----------|--------------------------------------|------------------------------------------------------------------------|---------|--|-----|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------|
| DRILLER: | Advance                              | D: August 11, 1998<br>ced Drilling Incorporated<br>nathan B. Seckinger |         |  |     |                    | PROJECT: PSE&G, Former Front<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709                                                                                                              | Street Gas | Works              |
|          | DEPTH                                | SOIL<br>CLASS                                                          | SAMPLES |  | RQD | FIELD<br>SCRÉENING | VISUAL<br>DESCRIPTION                                                                                                                                                                                        |            | COMMENTS           |
|          | -54<br>-55-<br>-56-                  |                                                                        |         |  |     |                    | (see previous page for description of 52-57' interval)                                                                                                                                                       |            |                    |
|          | -57-<br>-58-<br>-59-<br>-60-<br>-61- |                                                                        |         |  | 54% |                    | (5 YR 3/4) Siltstone from 57-59'<br>well weathered horizontal fracture @ 57.8'<br>numerous horizontal fractures from 57.8-59'<br>well weathered fracture @ 59'<br>@ 59-62' grades into f-m grained Sandstone |            |                    |
|          | -62-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -63-                                 |                                                                        |         |  |     |                    | End of Boring at 62 Feet<br>Bottom of Well at 62 Feet                                                                                                                                                        |            |                    |
|          | -64-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -65-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -66-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -67-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -68-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | •69-                                 | i                                                                      |         |  |     |                    |                                                                                                                                                                                                              | ļ          |                    |
|          | -70-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -71-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | .72.                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              | 1          |                    |
|          | -73-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -74-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -75-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -76-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -77-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -78-                                 |                                                                        |         |  |     |                    | · -                                                                                                                                                                                                          | -          |                    |
|          | -79-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -80-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -81-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -82-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              |            |                    |
|          | -83-                                 |                                                                        |         |  |     |                    |                                                                                                                                                                                                              | 1          |                    |

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Sheet 3 of 3

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# MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION

(One form must be completed for each well)

| Name of Permittee:   | Public Service Electric & Gas |
|----------------------|-------------------------------|
| Name of Facility:    | Former Front Street Gas Works |
| Location:            | McCarter Highway, Newark, N   |
| NJPDES Permit No.: _ |                               |

# CERTIFICATION

| CERTIFICATION                                      |                    |
|----------------------------------------------------|--------------------|
| Well Permit Number:                                | <u>26-51021</u> -  |
| Owner's Well Number (As shown on the               |                    |
| application or plans):                             | MW-5BR             |
| Well Completion Date:                              | August 11, 1998    |
| Distance from Top of Casing (cap off) to           |                    |
| ground surface (one-hundredth of a foot):          | 0.02'              |
| Total Depth of Well to nearest 1/2 foot:           | 72'                |
| Depth to Top of Screen (or Top of Open Hole)       |                    |
| From Top of Casing (one-hundredth of a foot):      | 52'                |
| Screen Length (or length of open hole) in feet:    | 20'                |
| Screen or Slot Size:                               | 0.010              |
| Screen or Slot Material:                           | <u>PVC Sch. 40</u> |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40        |
| Casing Diameter (inches):                          | 2"                 |
| Static Water Level From Top of Casing at the Time  |                    |
| of Installation (one-hundredth of a foot):         | 14.55'             |
| Yield (gallons per minute):                        | <1                 |
| Development Technique (specify)                    | Submersible Pump   |
| Length of Time Well is Developed/Pumped or Bailed: | 1 hour             |
| Lithologic Log:                                    | Attached           |
|                                                    |                    |

# AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

| onity of fine and impris | ionment. 7 |
|--------------------------|------------|
|                          |            |
| 1. JFK                   | MAL.       |
| MUNIAMI /~               | Xeikenk    |
| SIGNATURE                |            |
| //                       |            |

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

DATE

/SEAL

TITLE

# MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

# THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

| Name of Permittee: | PSE&G                                |
|--------------------|--------------------------------------|
| Name of Facility:  | MGP-017 - Front Street               |
| Location:          | McCarter Highway, Newark, New Jersey |

### LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:<br>(This number must be permanently | 2 6 - 5 1 0 2 1                    |
|---------------------------------------------------------|------------------------------------|
| affixed to the well casing.)                            |                                    |
| Longitude (NAD '83):                                    | West 74° 09' 59.68"                |
| Latitude (NAD '83):                                     | North40° 44' 37.71"                |
| Elevation of Top of Inner Casing (cap off)              |                                    |
| (one-hundredth of a foot.) (NAVD '88):                  | 19.22'                             |
| Source of elevation datum (benchmark, etc.)             |                                    |
| and elevation. (If an alternate datum has               |                                    |
| been approved by the Department, identify               |                                    |
| here and give approximated elevation):                  | Source: Newark City GPS Mon #89-28 |
|                                                         | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application            |                                    |
| or plans):                                              | MW-5BR                             |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

### AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

THEW L. MART 7, Land Surveyor License No.. 30088

SEAL

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| Killa       | m             |                |                        |                |           | DRI       | LLING LOG                           | LOG:<br>PERMIT: | MW-5BR<br>26-51021 |  |  |  |  |  |
|-------------|---------------|----------------|------------------------|----------------|-----------|-----------|-------------------------------------|-----------------|--------------------|--|--|--|--|--|
| TE COMP     |               | L              | August                 | 10, 199        | 98        |           | PROJECT: PSE&G, Former Front        |                 |                    |  |  |  |  |  |
| ULLER:      |               |                | ed Drillin             |                |           |           | LOCATION: Front Street, Newark      |                 |                    |  |  |  |  |  |
| SPECTOR     |               |                | an B. Sec              | -              |           |           | KILLAM PROJECT NUMBER: 263709       |                 |                    |  |  |  |  |  |
| RILLING ME  |               |                | Mud Rol                |                |           |           | STATE CASE NUMBER: N/A              |                 |                    |  |  |  |  |  |
| ELL DEVE    |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
| ATE: 8-1    | 2-98          |                |                        | YIELD          | : < 1 GPN | N         | LAT/LONG:                           | LAT /LONG:      |                    |  |  |  |  |  |
| ETHOD: S    | ubmers        | ible Pum       | P                      | Cs: N          | I/A       |           | SURVEYED ELEVATIONS:                | DATUM:          | ft MSL             |  |  |  |  |  |
| NGTH OF     | TIME:         | 60 minu        | tes                    |                |           |           | TOP OF CASING: 19.22                | GROUND          | SURFACE: 19.24     |  |  |  |  |  |
| CREEN:      | (20') 2       | "-ID Sci       | n. 40 PV(              | C, 10 s        | lot       |           | SCREEN DEPTH (TOC): 52'             | WELL DEP        | PTH (TOC): 72'     |  |  |  |  |  |
| SER: (5     |               | ) Sch. 4       | 0 PVC, (4              | 47') 6"-       | ID Steel  | Casing    | WATER DEPTH/DATE: 14.55' / 9-16-98  |                 |                    |  |  |  |  |  |
| OMPLETI     |               | Flushm         |                        |                | ı İ       | ·         | WATER DEPTH/DATE: 14.60' / 10-14-98 |                 |                    |  |  |  |  |  |
| WELL        | DEPTH<br>(FT) | SOIL<br>CLASS. | SAMPLES                | BLOW<br>COUNTS | RECOVERY  | FIELD     | VISUAL<br>DESCRIPTION               |                 | COMMENTS           |  |  |  |  |  |
| NSTRUCTION  | -0-           | CDG3.          |                        | COORTS         |           | SCREEKING |                                     |                 |                    |  |  |  |  |  |
| <u>- 18</u> |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -1-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 | ļ                  |  |  |  |  |  |
|             | -2-           |                |                        |                |           |           |                                     |                 | -                  |  |  |  |  |  |
|             | -3-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                | 1         |           |                                     |                 |                    |  |  |  |  |  |
|             | -4-           |                |                        |                |           | l         |                                     |                 |                    |  |  |  |  |  |
|             | -5-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -6-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -7-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -8-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -9-           |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -10-          |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -11-          |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | •12•          |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -13-          |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -14-          |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -15-          |                |                        |                |           |           |                                     |                 | ]                  |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -16-          |                |                        |                | ·         |           |                                     |                 | 1                  |  |  |  |  |  |
|             | -17-          |                |                        | ļ              |           |           |                                     |                 | 1                  |  |  |  |  |  |
|             |               |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             | -18-          |                |                        |                | 1         |           |                                     |                 | i                  |  |  |  |  |  |
| 1 - 198     | -19-          |                |                        |                |           |           |                                     |                 |                    |  |  |  |  |  |
|             |               |                |                        |                | ļ         |           |                                     |                 |                    |  |  |  |  |  |
|             | -20-          |                | <u> </u>               | 7              | 12        | 0         | f-m Sd, I, Slt                      |                 | Slight MGP odor;   |  |  |  |  |  |
|             | 3             |                | $\left  \right\rangle$ | 7              | 1 '2      |           | inn 99,1, 21                        |                 | some staining      |  |  |  |  |  |
|             | 3 -21-        |                |                        | 14             | 1         |           |                                     |                 | -                  |  |  |  |  |  |
|             | -22-          | ļ              |                        | 14             |           |           |                                     |                 | Slight MCD adar    |  |  |  |  |  |
| &           |               | 1              | $\backslash$           | 13<br>10       | 18        | 0         | f Sd, I. Slt                        |                 | Slight MGP odor    |  |  |  |  |  |
|             | -23-          | sw-sm          |                        | 14             | 1         |           | Well Graded SAND with SILT          |                 |                    |  |  |  |  |  |
|             | -24-          |                |                        | 15             | ]         |           |                                     |                 |                    |  |  |  |  |  |
| SI 6392     | 8 -           |                |                        | 12             | 16        | 0         | f Sd, I. Slt                        |                 | Slight MGP odor    |  |  |  |  |  |

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| ■Kill    | llam DRILL                                                                                                 |            |              |           |     | RILLI     | NGLOG                                                            | LOG:                                  | OG: MW-5BR<br>ERMIT: 26-51021 |  |  |
|----------|------------------------------------------------------------------------------------------------------------|------------|--------------|-----------|-----|-----------|------------------------------------------------------------------|---------------------------------------|-------------------------------|--|--|
| DATE COM | PLETED:<br>Advance                                                                                         | d Drilling | Incorpora    | B<br>Ited |     |           | PROJECT: PSE&G, Former Front S<br>LOCATION: Front Street, Newark | treet Gas                             | Works                         |  |  |
|          | DRILLER: Advanced Drilling Incorporated<br>NSPECTOR: Jonathan B. Seckinger<br>WELL DEPTH SOIL SAMPLES BLOW |            |              |           |     | FIELD     | KILLAM PROJECT NUMBER: 263709                                    |                                       | COMMENTS                      |  |  |
|          |                                                                                                            | CLASS      |              | COUNTS    | RQD | SCREENING |                                                                  |                                       |                               |  |  |
|          | -25                                                                                                        | i          |              | - 16      |     |           | · · · · · · · · · · · · · · · · · · ·                            | · · · · · · · · · · · · · · · · · · · |                               |  |  |
|          | -26-                                                                                                       |            |              | 16<br>16  | 6   | 0         | Brn Cl, t. Slt                                                   |                                       |                               |  |  |
|          | -27-                                                                                                       | CL         | $\mathbf{X}$ | 17        |     |           | CLAY                                                             |                                       |                               |  |  |
|          | -28-                                                                                                       | •          |              | 20<br>14  |     |           |                                                                  |                                       |                               |  |  |
|          |                                                                                                            |            |              |           |     |           |                                                                  | -                                     |                               |  |  |
|          | -29-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -30-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -31-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -32-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | 3                                                                                                          |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -33-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -34-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -35-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | 36-                                                                                                        |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          |                                                                                                            |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -37-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -38-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -39-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -40-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -40-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -41-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -42-                                                                                                       |            |              |           |     |           | Bedrock at 42 Feet                                               |                                       |                               |  |  |
|          | -43-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -44-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -44-                                                                                                       |            | 1            |           |     |           |                                                                  |                                       |                               |  |  |
|          | -45-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -46-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -47-                                                                                                       |            |              | Ļ         |     |           | ·                                                                |                                       |                               |  |  |
|          | -48-                                                                                                       |            | $\setminus$  |           | 11% |           | (5 YR 3/4) highly horizontally fractured Sittstone               |                                       | No MGP odors or sheen         |  |  |
|          | -40-                                                                                                       |            | $\setminus$  |           |     |           |                                                                  |                                       |                               |  |  |
|          | -49-                                                                                                       |            |              |           |     | Ĩ         |                                                                  |                                       |                               |  |  |
|          | <sup>-</sup> -50-                                                                                          |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -51-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          |                                                                                                            |            | \            |           |     |           |                                                                  |                                       |                               |  |  |
|          | -52-                                                                                                       |            | $\backslash$ | Ī         | 0%  |           | (5 YR 3/4) highly horizontally fractured Siltstone;              |                                       |                               |  |  |
|          | •53-                                                                                                       |            |              |           |     |           |                                                                  |                                       |                               |  |  |
|          | -54-                                                                                                       |            | _            |           |     |           |                                                                  |                                       |                               |  |  |
|          | -55-                                                                                                       |            | - ^\         | ľ         | •   |           | @ 55.5' thin Shale interbedded with Siltstone;                   |                                       |                               |  |  |
|          |                                                                                                            |            | V            |           |     |           | good weathering at this interval                                 |                                       |                               |  |  |

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Sheet 2 of 3

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| <sup>⊯</sup> Killa      | m                                            |               | _          | _              | E      | RILLI | NG LOG                                                                                                                                                              | LOG:                    | MW-5BR                                                                                               |
|-------------------------|----------------------------------------------|---------------|------------|----------------|--------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------|
| DATE COMP<br>DRILLER: / | Advance                                      | d Drillin     | ng Incorpo | rated          | - ·    |       | PROJECT: PSE&G, Former Front<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709                                                                     | PERMIT:<br>t Street Gas | 26-51021<br>Works                                                                                    |
|                         | DEPTH<br>(FT)                                | SOIL<br>CLASS | SAMPLES    | BLOW<br>COUNTS | RQD    | FIELD | VISUAL                                                                                                                                                              |                         | COMMENTS                                                                                             |
|                         | -54<br>-55-<br>-56-<br>-57-                  |               |            |                |        |       |                                                                                                                                                                     |                         |                                                                                                      |
|                         | -58-<br>-59-<br>-60-<br>-61-                 |               |            |                | 23%    |       | (5 YR 3/4) highly horizontally fractured Sittstone;<br>@ approximately 60' well weathered horizontal fract<br>@ 61.1-61.3' vertical fracture; no significant weathe | ture;<br>iring          | While coring 57-62'<br>blackish substance<br>entering tub; no MGP odor;<br>smells like grease or oil |
|                         | -62-<br>-63-<br>-64-<br>-65-<br>-66-         |               |            |                | 35%    |       | (5 YR 3/4) highly horizontally fractured Siltstone;<br>@ 62-62.5' vuggy Siltstone;<br>@ 65' v. fractured (horizontal & vertical) zone                               |                         |                                                                                                      |
|                         | -67-<br>-68-<br>-69-<br>-70-<br>-71-<br>-72- |               |            |                | 0%     |       | (5 YR 3/4) highly horizontally fractured Siltstone;<br>vuggy fractures @ 69.2', 70.2', 71.3' & 71.5'                                                                |                         |                                                                                                      |
|                         | -73-<br>-74-                                 |               |            |                | ,<br>, |       | End of Boring at 72 Feet<br>Bottom of Well at 72 Feet                                                                                                               |                         |                                                                                                      |
|                         | -75-<br>-76-                                 |               |            |                |        |       |                                                                                                                                                                     | 1                       |                                                                                                      |
|                         | -77.                                         |               |            |                | ļ      |       |                                                                                                                                                                     |                         |                                                                                                      |
|                         | -78-                                         |               |            |                |        |       |                                                                                                                                                                     |                         |                                                                                                      |
|                         | ·79-                                         | į             |            |                |        |       |                                                                                                                                                                     |                         |                                                                                                      |
|                         | -80-                                         |               |            |                |        |       |                                                                                                                                                                     |                         |                                                                                                      |
|                         | -82-                                         |               |            |                |        |       |                                                                                                                                                                     |                         |                                                                                                      |
|                         | -83-                                         |               |            |                |        |       |                                                                                                                                                                     |                         |                                                                                                      |

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Sheet 3 of 3

### MONITORING WELL CERTIFICATION - FORM A AS-BUILT CERTIFICATION (One form must be completed for each well)

| Name of Permittee: | Public Service Electric & Gas |  |
|--------------------|-------------------------------|--|
| Name of Facility:  | Former Front Street Gas Works |  |
| Location:          | McCarter Highway, Newark, NI  |  |
| NJPDES Permit No.: |                               |  |

# COTICICATION

| CERTIFICATION                                      |                          |
|----------------------------------------------------|--------------------------|
| Well Permit Number:                                | <u>2 6 - 5 1 6 9 4 -</u> |
| Owner's Well Number (As shown on the               |                          |
| application or plans):                             | MW-6                     |
| Well Completion Date:                              | <u>August 29, 1998</u>   |
| Distance from Top of Casing (cap off) to           |                          |
| ground surface (one-hundredth of a foot):          | 0.32'                    |
| Total Depth of Well to nearest 1/2 foot:           | 32'                      |
| Depth to Top of Screen (or Top of Open Hole)       |                          |
| From Top of Casing (one-hundredth of a foot):      | <u>17'</u>               |
| Screen Length (or length of open hole) in feet:    | 15'                      |
| Screen or Slot Size:                               | 0.010                    |
| Screen or Slot Material:                           | PVC Sch. 40              |
| Casing Material (PVC, Steel or Other-Specify):     | PVC Sch. 40              |
| Casing Diameter (inches):                          | 2"                       |
| Static Water Level From Top of Casing at the Time  |                          |
| of Installation (one-hundredth of a foot):         | 27.95'                   |
| Yield (gallons per minute):                        | <1                       |
| Development Technique (specify)                    | Submersible Pump         |
| Length of Time Well is Developed/Pumped or Bailed: | <u>1 hour</u>            |
| Lithologic Log:                                    | Attached                 |
| >                                                  |                          |

#### **AUTHENTICATION**

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Ionathan B. Seckinger, P.G. NAME (TYPE OR PRINT)

Pennsylvania Professional Geologist #PG-003258-E CERTIFICATION OR LICENSE NUMBER

TURE

CERTIFICATION BY EXECUTIVE OFFICER OR DULY AUTHORIZED REPRESENTATIVE

NAME (TYPE OR PRINT)

SIGNATURE

TITLE

DATE

# MONITORING WELL CERTIFICATION FORM B-LOCATION CERTIFICATION

# THIS FORM MUST BE COMPLETED BY THE PERMITTEE AND/OR SURVEYOR

| Name of Permittee: | PSE&G                                |
|--------------------|--------------------------------------|
| Name of Facility:  | MGP-017 - Front Street               |
| Location:          | McCarter Highway, Newark, New Jersey |

## LAND SURVEYOR'S CERTIFICATION

| Well Permit Number:                          | 2 6 - 5 1 6 9 4                    |
|----------------------------------------------|------------------------------------|
| (This number must be permanently             |                                    |
| affixed to the well casing.)                 |                                    |
| Longitude (NAD '83):                         | West 74° 10' 02.79"                |
| Latitude (NAD '83):                          | North 40° 44' 33.79"               |
| Elevation of Top of Inner Casing (cap off)   |                                    |
| (one-hundredth of a foot.) (NAVD '88):       | 38.39'                             |
| Source of elevation datum (benchmark, etc.)  |                                    |
| and elevation. (If an alternate datum has    |                                    |
| been approved by the Department, identify    | -                                  |
| here and give approximated elevation):       | Source: Newark City GPS Mon #89-28 |
|                                              | Elev.: 8.11'                       |
| Owner's Well Number (as shown on application |                                    |
| or plans):                                   | MW-6                               |

Elevations are to be determined by double run, three wire leveling methods using balance sights, commencing form a well marked and described point. This beginning point shall either be derived from Federal or State benchmarks if not more than 1000 feet from the site or, if the Department has approved an alternate datum, based on an assumed datum of 100. Tolerances should meet third order standards, which are 0.05 ft. x (mile)  $\frac{1}{2}$ . For sections less than 0.1 mile, let miles = 0.1.

## AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

TTHEW L. MA **BAINI**, Land Surveyor License No., 30088

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| <b>™Kill</b>                                     | am                                                                         |                           | · · · · · · <u>·</u>                           |                        |          | DR                 | ILLING LOG                                                                                                                                 | LOG:<br>PERMIT:               | MW-6<br>26-51694        |  |  |  |  |
|--------------------------------------------------|----------------------------------------------------------------------------|---------------------------|------------------------------------------------|------------------------|----------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------|--|--|--|--|
| DATE COMP<br>DRILLER:<br>INSPECTOR<br>DRILLING M | ł:                                                                         | Advan<br>Jonath           | August<br>ced Drillin<br>an B, Sec<br>Hollow S | ig Incoi<br>skinger    | rporated |                    | PROJECT: PSE&G, Former Front Street Gas Works<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709<br>STATE CASE NUMBER: N/A |                               |                         |  |  |  |  |
| WELL DEVE<br>DATE: 8-3<br>METHOD: 1<br>LENGTH OF | 29-98<br>Hand-Ba<br>TIME:                                                  | ailing<br><u>95 min</u> u |                                                | YIELD<br>Cs: N         | ŧ∕A      |                    | LAT JLONG:<br>SURVEYED ELEVATIONS:<br>TOP OF CASING: 38.11                                                                                 | SURVEYED ELEVATIONS: DATUM: 1 |                         |  |  |  |  |
| SCREEN:<br>RISER: (1<br>COMPLETI                 | 7') 2"-I                                                                   |                           | 10 PVC                                         | 3, 10 S                | ·····    |                    | WATER DEPTH/DATE: NA / 9-16-98<br>WATER DEPTH/DATE: 27.95' / 10-14-98                                                                      | WELL DEF                      | PTH (TOC): 32'          |  |  |  |  |
| WELL                                             | TRUCTION (FT) CLASS. COUNTS (IN.) SCRE                                     |                           |                                                |                        | RECOVERY | FIELD<br>SCREENING | VISUAL<br>DESCRIPTION                                                                                                                      |                               | COMMENTS                |  |  |  |  |
|                                                  | -0-<br>-1-<br>-2-<br>-3-<br>-4-<br>-5-<br>-6-<br>-7-<br>-8-<br>-9-<br>-10- |                           |                                                | 14<br>14<br>17<br>21   | 12       | 10                 | f-m-c Sd a. Grv, I. Slt; Fill (5 YR 4/4)<br><i>FILL</i>                                                                                    |                               | Slight Chemical<br>odor |  |  |  |  |
|                                                  | -11-<br>-12-<br>-13-<br>-14-<br>-15-                                       | GP                        |                                                | 10<br>31<br>36<br>50/3 | 10       | 4.3                | Grv, I. f-m Sd, t. Slt (5 YR 4/4)<br>Poorly Graded GRAVEL                                                                                  |                               | Slight odor             |  |  |  |  |
|                                                  | -16-<br>-17-<br>-18-<br>-19-                                               | SW-SM                     |                                                | 14<br>17<br>11<br>8    | 16       | 0                  | 1-m Sd, I. Grv, I. Sit (5 YR 4/4)<br>Well Graded SAND with SILT                                                                            |                               |                         |  |  |  |  |
|                                                  | -20.<br>-21-<br>-22-<br>-23-<br>-24-<br>-25-                               | sw                        |                                                | 6<br>6<br>5<br>5       | 17       | 0                  | f Sd, t. Slt (5 YR 4/4)<br>Well Graded SAND                                                                                                |                               |                         |  |  |  |  |

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| <sup>⊯</sup> Killa                    | am                   |            |                                        |             | E                           | RILLI     | NG LOG                                                                                          | LOG:       | MW-6              | ] |  |
|---------------------------------------|----------------------|------------|----------------------------------------|-------------|-----------------------------|-----------|-------------------------------------------------------------------------------------------------|------------|-------------------|---|--|
| DATE COMP<br>DRILLER: A<br>INSPECTOR: | Advance              | d Drilling | ist 29, 199<br>9 Incorpor<br>Seckinger | ated        |                             |           | PROJECT: PSE&G, Former Front<br>LOCATION: Front Street, Newark<br>KILLAM PROJECT NUMBER: 263709 | Street Gas | 26-51694<br>Works |   |  |
| WELL                                  | DEPTH                | SOIL       | SAMPLES                                | BLOW        | RECOVERY                    | 1         | VISUAL                                                                                          |            | COMMENTS          |   |  |
|                                       | -25                  | CLASS      |                                        | COUNTS      | (IN.)                       | SCREENING |                                                                                                 |            |                   | - |  |
|                                       | -26-                 |            |                                        | 8<br>7<br>8 | 20                          | 0         | f Sd, t. Slt (5 YR 4/4)                                                                         |            |                   |   |  |
|                                       | -27- SW              |            |                                        |             | Well Graded SAND            |           | Wet at 26.5'                                                                                    |            |                   |   |  |
|                                       | -28-<br>-29-<br>-30- |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       |                      |            |                                        |             | ]                           |           |                                                                                                 |            |                   |   |  |
|                                       |                      |            | 18                                     |             | 12" f Sd, I. Sit (5 YR 4/4) |           |                                                                                                 |            |                   |   |  |
|                                       | -31-                 | ML         |                                        | 1           |                             |           | 4" Sit, t. f Sd (5 YR 4/4)                                                                      |            |                   |   |  |
|                                       | -32-                 | CL         |                                        | 1           |                             |           | 2" CI (5 YR 4/4)                                                                                |            |                   | _ |  |
|                                       | -33-                 |            |                                        |             |                             |           | End of Boring at 32 Feet<br>Bottom of Well at 32 Feet                                           |            |                   |   |  |
|                                       | -34-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -35-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -36-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
| i i                                   | -37 <b>-</b><br>-38- |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -39-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -40-                 |            |                                        |             |                             |           |                                                                                                 |            |                   | 1 |  |
|                                       | -41-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -42-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -43-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -44-                 |            |                                        |             |                             | -         |                                                                                                 |            |                   |   |  |
|                                       | -45-                 |            |                                        |             |                             |           |                                                                                                 | 1          |                   |   |  |
|                                       | -46-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -47-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -48-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -49-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -51-                 |            |                                        | F           |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -52-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -53-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -54-                 |            |                                        |             |                             |           |                                                                                                 |            |                   |   |  |
|                                       | -55-                 |            |                                        |             |                             |           |                                                                                                 |            |                   | ļ |  |

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Sheet 2 of 2

| 1. PROJ  | ETT<br>PASSIAC                                      | RIVER E    | BANK RES          | TORATION                    | NEWARK                    | 1                                                  | E AND TYPE                    |             | 5" AUGER &                  | 2 3 1/8 R8                                               |       |  |  |  |
|----------|-----------------------------------------------------|------------|-------------------|-----------------------------|---------------------------|----------------------------------------------------|-------------------------------|-------------|-----------------------------|----------------------------------------------------------|-------|--|--|--|
|          | DON (Coord                                          | Set        | SIL PLA           | N                           |                           | 12. 14                                             | NUFACTORE                     | rs design   | ATION OF DRUL<br>FAILING 31 |                                                          |       |  |  |  |
| REL      | ING AGENCE                                          | MOBILE     | DISTRICT          |                             |                           | 13, 101                                            | 4 UNOSTUREED                  |             |                             |                                                          |       |  |  |  |
| A HOLE   | NO. (As at file number)                             | norm on dr | uning title       | H                           | 5                         | TIL TUTUL HO, OF OVER-<br>BURDEN SAMPLES TWEEN 8 0 |                               |             |                             |                                                          |       |  |  |  |
| S. NULLE | OF DRULE                                            | R MOC      | N N               |                             |                           | <b></b>                                            | WITCH GRO                     |             |                             | ~                                                        |       |  |  |  |
|          | TION OF H                                           |            | LINED             |                             | DEG. FROM VERT.           | 15. DA                                             | E HOLE                        |             | 6-20-94                     | 6-20-94                                                  |       |  |  |  |
| 7. 1100  | HESS OF O                                           | FREURODA   |                   |                             | 16.0                      |                                                    | ACT NOLIN                     |             |                             | -                                                        |       |  |  |  |
|          | H DRILLED I                                         |            |                   |                             | 0.0                       |                                                    | NL CORE RE                    |             |                             | N/A                                                      |       |  |  |  |
| S. TOTAL | DEPTH OF                                            | HOLE       |                   | 16.0                        |                           | 1                                                  |                               | · · · · · · | M. RUGALSKI                 |                                                          |       |  |  |  |
|          | рертн<br>в                                          | ເກລະນ<br>ຈ |                   | SFICKTION<br>echotion)<br>d |                           |                                                    | X CORE<br>RECOVERT<br>OR W.C. |             | (Oriting time, we           | er loss, depth of<br>"Y significant)<br><u>SPT BLOWS</u> | 5./FT |  |  |  |
|          |                                                     |            | (SP) PO<br>GRAVEL | OORLY G<br>& CON            | RADED SAND<br>CRETE FRAG. | w/<br>(티나)                                         |                               | JAR<br>∄1   |                             | 4-17-12-12                                               |       |  |  |  |
|          | 3.0                                                 |            | SAME              | .*                          |                           |                                                    |                               | JAR<br>#2   | WATER LEVEL                 |                                                          |       |  |  |  |
|          | רודןרוי                                             |            | SAME              |                             |                           |                                                    |                               | JAR<br>∄3   |                             | 10-15-50÷-5                                              |       |  |  |  |
|          | 6.0                                                 |            | SAME              |                             |                           |                                                    |                               | JAR<br>#4   | VOA 7.5 - 8.                |                                                          |       |  |  |  |
|          | 9.0<br>9.0                                          |            | (GP) BR           | Rown Sa                     | NDY GRAVEL                |                                                    |                               | JAR<br>#5   | -                           | -7-6-5                                                   |       |  |  |  |
|          | $\dot{\tau}$                                        |            | SAME W            | / WOOD                      | FRAG.                     |                                                    |                               | JAR<br>∄6   | -                           | 5-3-2-2                                                  |       |  |  |  |
|          |                                                     |            | SAME              |                             |                           |                                                    |                               | JAR<br>#7   | -                           | 5-8-9-7                                                  |       |  |  |  |
|          | <del>ין ין אין אין אין אין אין אין אין אין אי</del> |            | -<br>SAME         |                             |                           |                                                    |                               | JAR<br>#8   | *-                          | -12-17-21                                                |       |  |  |  |
|          | ארו.<br>היו.                                        |            | BOTTOM            | OF BOR                      | ING 16.0                  | ,I                                                 |                               |             | HOLE GOUTE<br>W/ 1 BAG (    | Ð                                                        |       |  |  |  |
|          |                                                     |            |                   |                             |                           |                                                    |                               |             |                             |                                                          |       |  |  |  |

TIERRA-B-018243

| DRIL           | LING LO                  | G                                                                                                | ORD                                |                                        |          |                               |                  |                                              | OF 3 SHEETS         |              |
|----------------|--------------------------|--------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------|----------|-------------------------------|------------------|----------------------------------------------|---------------------|--------------|
| NE             | WARK S                   | REAMB                                                                                            | ANK REST. PROJ.,                   |                                        |          | E AND TIPE                    |                  | 2" & SPTSPN<br>HOWN (TBALLIESL, OR H         | : 3 AUGER           | _            |
| I CAT          | TON (Coord               | inclus or                                                                                        | Station)                           | ······································ |          |                               | •                |                                              |                     |              |
|                |                          |                                                                                                  | TER HWY., NEWARK<br>C; MOBILE      | L, NU                                  | 12. 144  | AFACTORER                     | liz design       | FAILING 314                                  |                     |              |
|                |                          |                                                                                                  |                                    |                                        |          | NO. OF                        |                  | DISTURBED<br>2                               | UNDESTURBED         |              |
| HOLE<br>and fi | HO. (As st<br>le sumber) | 0.000                                                                                            | H-                                 | 7 -                                    |          | L. NUMBER                     |                  | 1                                            |                     |              |
| UNE.           | OF DRULE                 | CHAR                                                                                             | LE BROWN                           |                                        | 15. 815  | ATION GRO                     | UNDWATER         | <u></u>                                      | 4                   |              |
|                | TION OF HO               |                                                                                                  |                                    | DEG. FROM VERT.                        | 16. OKT  | HOLE                          | 1                | 1-30-94                                      | 12-3-94             |              |
|                |                          |                                                                                                  |                                    |                                        | 17. 815  | ATTON TOP                     | OF HOLE          |                                              | <b>_</b> .          |              |
|                | DRELLED                  |                                                                                                  |                                    |                                        |          | L CORE RE                     |                  |                                              |                     |              |
|                | DEFTH OF                 |                                                                                                  | 45.0*                              |                                        | 19. SICH | NTURE OF                      |                  |                                              |                     |              |
| ATION          | рертн<br>Р               | 5<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2<br>2 | (Description)                      |                                        |          | X CORE<br>RECOVERY<br>OR X.C. |                  | (Draing time, wate<br>weathering, etc.,<br>g | r ious, depth of    | <del>1</del> |
| 1              |                          | 1111                                                                                             | (ML) FILL. SILT-L                  |                                        |          | HP                            |                  | 2" SPT. SPN.                                 | 28-50+              | E            |
|                | 0.8                      |                                                                                                  | BROWN, DRY, SAN                    |                                        |          |                               | A I              | REC. 0.8<br>DRL & CD- 0.1                    |                     | Ē            |
|                |                          |                                                                                                  | <u> </u>                           |                                        | ĺ        |                               |                  | 5 AUGER<br>DRL & CD- 2.0                     |                     | F            |
| -              | 2.0                      |                                                                                                  | (GM) FILL, GRAVE                   |                                        |          | HP                            |                  | 20 SPT. SPN.<br>REC. 2.0                     |                     |              |
|                | 3.0 -                    | •   •  <br>  •   •                                                                               | ANGULAR, LOOSE,<br>SILTY, W/WOOD F | DAMP, BLACK,<br>RAGMENTS.              |          |                               | ES .             | PID- 21 PPM                                  |                     | F            |
|                | 4.0 -                    | •   •  <br>  •   •                                                                               |                                    |                                        |          |                               | SAMPLES .        | DRL & CD- 4.0                                | 0 <u>10-6-6-7</u>   | Ŀ            |
|                |                          |                                                                                                  | (GM), WET, CONT.                   |                                        | Í        | HP                            | SAI              | 2"Ø SPT. SPN.<br>REC. 2.0                    |                     | F            |
|                | Ē                        |                                                                                                  |                                    |                                        |          | ļ                             | 9                | PID- 42 PPM                                  |                     |              |
|                | 6.0                      | Ĭ                                                                                                |                                    |                                        | ļ        |                               | 1                | <u>DRL &amp;</u> CD- 6.0                     | 0 <u>13-</u> 8-3-15 | <u>~</u>     |
|                |                          |                                                                                                  | (GM) (SM), CONT.                   |                                        |          | HP                            |                  | 2 & SPT. SPN.<br>REC. 2.0                    |                     | F            |
|                |                          |                                                                                                  |                                    |                                        | ļ        |                               | Ť                | PID- 58 PPM<br>VOA SAMPLE                    |                     | -            |
|                | 8.0                      |                                                                                                  |                                    |                                        |          |                               |                  | DRL & CD- 8.0                                |                     | F            |
|                |                          | <b>0</b>                                                                                         | (SM) SAND, MED.<br>ANGULAR, LOOSE, | GRAINED,<br>WET, BLACK,                |          | HP                            |                  | END OF 1ST. CO<br>2 & SPT. SPN.              | UNPUSIL             | F            |
|                | 9.0                      | é Í e                                                                                            | GRAVELLY, SANDY                    |                                        |          |                               | Î                | REC. 1.0<br>PID- 60 PPM                      | -                   | E            |
| 1              | 0.0                      | 000                                                                                              |                                    |                                        | +        | HP                            |                  | DRL & CD- 10.<br>REC. 2.0                    | .0 <u>6-4-7-3</u>   |              |
|                |                          | 9   0  <br>9   9                                                                                 | (SM), CONT.                        |                                        |          |                               | 1                |                                              |                     | F            |
|                |                          |                                                                                                  |                                    |                                        |          |                               | ٦<br>د<br>ا<br>ن | PID- 130 PPM<br>VOA SAMPLE                   | _ <b>_</b>          | E            |
| 1              | 2.0                      | 9   9  <br>9   9                                                                                 | <br>(SM), SAT., CONT.              |                                        | ╞        | ΗΡ                            |                  | <u>DRL &amp;</u> CD- 12.<br>REC. 0.5         | .0 <u>5-5-5-6</u>   |              |
|                |                          | 0 0                                                                                              | Um, and, Cont.                     |                                        |          |                               | _                | PID- 70 PPM                                  | •                   | F            |
|                |                          |                                                                                                  |                                    |                                        |          |                               | - i i            | <u>DRL &amp;</u> CD- 14.                     | ∩ <u>5-3-7-6</u>    | E            |
| 1              | 4.0                      | °   °                                                                                            | (SM), CONT. W/SM                   | IL CL AT BOTT                          | гом Г    | HP                            |                  | REC. 2.0                                     |                     |              |
| 1              | ەل_<br>  5.0             | 00                                                                                               | OF SHOE                            |                                        |          |                               |                  | PID- 100 PPM                                 |                     | -            |
|                | i                        | φ   φ                                                                                            |                                    |                                        |          |                               | - '              | 12-2-94<br><u>DRL &amp;</u> CD- 16.          | 0 13-7-3-5          | E            |
| 1              | 6.0 <u></u>              | 777                                                                                              | (CL) CLAY, LOW P                   |                                        |          | HP                            | 1                | END OF 2ND, C                                |                     | ┣            |
|                | ۷_<br>را_                |                                                                                                  | ŠLIGHTLY DAMP, M<br>GRAVELLY       | EDIUM, SLIGHTI                         |          |                               | 1                | 2 0 SPT. SPN.<br>REC. 1.5                    | -                   | F            |
|                |                          | //                                                                                               |                                    |                                        |          |                               |                  | PID- 0.0 PPM<br><u>DRL &amp;</u> CD- 18.     | 0 9-3-3-4           | F            |
| 1              | 8.0                      |                                                                                                  | (CL), CONT.                        |                                        |          | нр і                          |                  | REC. 1.0                                     |                     | E            |
|                | E                        | //                                                                                               |                                    |                                        |          |                               | ທີ່ໄ             | PID- 0.0 PPM                                 |                     | F            |
|                |                          | //                                                                                               |                                    |                                        |          | '                             | പ്പ              | <u>DRL &amp;</u> CD- 20.                     | 0 2-2-2-3           | F            |
| 12             | 20.0                     | ///i                                                                                             | · • •                              |                                        | F        | чр                            |                  | REC 10                                       | TIERRA-             | <b></b>      |

<u>ر</u>، ۲

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| 1        |                        |                                       |                      |                   |                            | -           |                      |                       |                                            |                                       |                       |            |
|----------|------------------------|---------------------------------------|----------------------|-------------------|----------------------------|-------------|----------------------|-----------------------|--------------------------------------------|---------------------------------------|-----------------------|------------|
|          | WARK S                 |                                       |                      | . PROJ.           | NEWARK, NJ                 | · · · · · · | E AND THP            |                       | 2 & SPISPA                                 |                                       | AUGER                 |            |
| •        |                        | McCART                                | ER HWY.,             |                   | (, NJ                      | 12. #*      | NFACTORES            | <del>0230 27</del>    | WITCH OF DRILL                             |                                       | <u>,</u>              | _          |
| , FIL    | NG AGENCI              | USCE-                                 | C: MOBILE            |                   | ÷.                         | 13 11       | AL NO. OF            | 0452-                 | FAILING 314                                | · · · · · · · · · · · · · · · · · · · | NOISTURBED            |            |
| K HOLE   | NO. (As at the number) | noven on de                           | veing title          | H-                | .7                         | BUF         | DEN SALP             | UES TAKEN             | 2                                          |                                       | 0.                    |            |
|          | OF DRILLE              |                                       | LIE BROW             | N                 | ·····                      | <u>}</u>    | AL NUMBER            |                       |                                            | <u> </u>                              |                       | _          |
| 5 0870   | TON OF H               |                                       |                      |                   |                            | 1           |                      |                       |                                            | 1 12                                  | 7.01                  | -          |
|          | VERTICAL               |                                       | ILINED               |                   | , deg. from vert.          | 16. DAT     | E HOLE               |                       | 11-30-94                                   | 12-                                   | -3-94                 | 4          |
|          | NESS OF O              |                                       | !                    | 40.0"             |                            |             |                      |                       | OR BORING                                  | <u> </u>                              | <u> </u>              | $\dashv$   |
|          | DEPTH OF               |                                       |                      | <u>50</u><br>45.0 | ·                          | 19. 55      | NTURE OF             |                       | SUE                                        |                                       |                       | 7          |
| 1EWATION | f                      | 1000                                  |                      | SSECATION         |                            | !           | T CORE               | BCX OR                | REMA                                       | RICS                                  | death of              | -          |
| <u>م</u> | b                      | c                                     | (0                   | d d               |                            |             | RECEIVERY<br>OR W.C. | NO,                   | weathering sta.                            | t signi                               | froant)<br>SPT BLOWS/ |            |
|          |                        |                                       |                      |                   |                            |             |                      | so                    |                                            |                                       |                       | F          |
|          | 21.9                   |                                       | (SP) SAN             | ND. MEDI          | JM GRAINED,                |             | L                    |                       | DRL & CD- 21<br>REC. 1.0                   | 2.0                                   | <u>9-8-9-5</u>        | - <u> </u> |
|          | 22.0/                  |                                       | SUBANGU              | ILÁR, WE          | I, GRAY, LOOS              | Ξ.          |                      | SAM<br>16.            | PID- 0.0 PPM                               |                                       |                       | <u> </u>   |
|          | 23.8                   |                                       | SUGHTLY<br>((CL), CC |                   | ABOVE.                     |             |                      | <u>مح</u> م           |                                            |                                       | ~                     | E          |
|          | 24.0                   |                                       | (SP), CO             |                   |                            |             | HP                   |                       | <u> DRL &amp;</u> CD- 24<br> END OF 3RD. ( |                                       |                       | <u> </u>   |
|          |                        |                                       |                      |                   |                            |             |                      | Ī                     | 2 Ø SPT. SPN.<br>REC. 1.0                  |                                       |                       | F          |
|          |                        |                                       |                      |                   |                            |             |                      |                       | PID- 0.0 PPM                               |                                       |                       | <b>F</b>   |
|          | 26.0-=                 |                                       | (52) 541             |                   | FINE GRAINED               |             | HP                   | I                     | DRL & CD- 26<br>REC. 2.0                   |                                       | 2-2-4-8               | Ē          |
|          | 27.0                   |                                       | ROUND, (             | GRAY, LO          | OSE, SUGHTLY               |             |                      | 1<br>TO               | PID- 0.0 PPM                               |                                       |                       | 1          |
|          |                        |                                       | SILTY. WE            | _1.               |                            |             |                      | АМРЦ<br>14.0<br>50.9± | DRL & CD- 28                               |                                       | 7                     | F          |
|          | 28.0                   |                                       | (MI) SII7            |                   | SLIGHTLY                   |             | HP                   | 300<br>0              | $\frac{DRL}{REC} = \frac{2}{1.0}$          | <u>-</u>                              |                       | Ť          |
|          |                        |                                       | DAMP, ST             |                   |                            |             |                      |                       | PID- 0.0 PPM                               |                                       |                       | E          |
|          | 29.3                   |                                       | (ML) SILT            | RED. H            | IARD, DRY,                 |             |                      |                       |                                            | ••••                                  | 0 01 17 7             | Ļ۲         |
|          | 30.0                   |                                       | ĠRÁVELLY             | , SHALE           | FRAGMENTS,<br>LY WEATHEREI | 、           |                      | I<br>T                | DRL & CD- 30<br>REC. 1.0                   | .0 1                                  | 8-21-13-3             | <u> </u>   |
|          | 30.9                   |                                       | SHALE RO             |                   | .LI WEATHERED              |             |                      |                       | IVOA SAMPLE<br>PID- 0.0 PPM                |                                       |                       | F          |
|          | 31.8                   |                                       |                      |                   |                            |             |                      | 4                     | DRL & CD- 32                               | <u>6</u>                              | -30-39-50-            | <u>_</u>   |
|          | 32.0                   |                                       |                      |                   |                            | {           |                      | ا<br>س                | END OF 4TH. C                              | OMPOS                                 | SITE                  | E          |
|          | 33.0                   |                                       |                      |                   |                            |             |                      | SAMPLE                | 3 RRB                                      |                                       |                       | F          |
| 1        |                        |                                       |                      |                   |                            |             |                      | SAI                   | END HTRW SAM                               | PLING                                 |                       | E          |
|          |                        |                                       |                      |                   |                            | f           |                      |                       |                                            |                                       |                       | E          |
|          | 35.0                   |                                       |                      |                   |                            | }           |                      |                       |                                            |                                       |                       | F          |
|          | 35.5                   |                                       |                      |                   | RY, HARD,<br>INTENSELY     |             | HP                   | JAR                   | 2 ¢ SPT. SPN.<br>REC. 1.0                  |                                       |                       | F          |
|          | 36.0                   |                                       | WEATHERE             |                   |                            |             |                      |                       | DRL & CD- 35                               | .5 <u>1</u>                           | 4-16-22               | F          |
|          |                        |                                       |                      |                   |                            |             |                      |                       | 3 RRB                                      |                                       |                       | Е          |
|          |                        |                                       |                      |                   |                            |             |                      |                       |                                            |                                       |                       | <b> </b> - |
|          |                        |                                       |                      |                   |                            |             |                      |                       |                                            |                                       |                       | F          |
|          | 39.0 -                 |                                       |                      |                   |                            |             |                      |                       |                                            |                                       |                       |            |
|          |                        |                                       | TOP OF F             | ROCK- 4           | 0 <b>.</b> 0               |             |                      | Ť                     |                                            |                                       |                       | E          |
|          |                        | · · · · · · · · · · · · · · · · · · · |                      |                   | CEOUS, SOFT,               | ŀ           | HP                   | <u></u>               | 20 SPT. SPN                                | . 5                                   | 50÷                   | <u> </u>   |
| 4        | +0-2/                  |                                       | #/BR-RE              |                   | , ·                        |             |                      | 54MPI<br>40.0         | \REC. 0.2<br>  JAR                         |                                       |                       | F          |
|          | 410 -                  |                                       |                      |                   |                            |             |                      | . ~x<br>00            | 2 OF 2                                     |                                       |                       | F          |
|          |                        |                                       |                      |                   |                            |             |                      |                       |                                            | T                                     | IERR <b>A</b> -B-0    | 18245      |

| The WARK STREAMENT REST. PROJ., NEWARK, NJ         I. DOWN FOR ELATIN SHORE (DALL), GR HODO           LICENDI (DOWNARCE HWY, NEWARK, NJ         I. DOWN FOR ELATIN SHORE (DALL), GR HODO           PELCE, MACRARCE HWY, NEWARK, NJ         I. MARCH CONTR OF DELATING SHORE (DALL), GR HODO           MECH MARCH AND STREET HWY, NEWARK, NJ         I. MARCH CONTR OF DELATING SHORE (DALL), GR HODO           MECH MARCH AND STREET HWY, NEWARK, NJ         I. MARCH CONTR OF DELATING SHORE (DALL), GR HODO           MECH MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND MARCH AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | PRO        | ECT        | TREAUR    | ANK RES  | T. PROJ NEWARK                        |          |              | E AND TYP |            |                       | : 3 AUGER                             |
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| PETHON ADDRET         Discrete of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of developing the order of the order of developing the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order of the order order of the order of the order of the order order of the order                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            | TICH (Coot | unates or | Station) | · · · · · · · · · · · · · · · · · · · |          |              |           |            |                       |                                       |
| Bases Sub-13 Suc         Description         Description <thdescription< th=""></thdescription<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | R          |            |           |          |                                       | [        | 12. 144      | NUFACTORE | r's design | FAILING 314           |                                       |
| and a minute         initial         initial         initial         initial           AME OF PARLET<br>DEPENDEN OF MALE<br>ICCL WATCOL         ALD ALL<br>BRUNDD         ALD ALL<br>BRUNDD         Initial<br>BRUNDD         Initial<br>BRUNDD         Initial<br>BRUNDD         Initial<br>BRUNDD         Initial<br>BRUNDD         Initial<br>BRUNDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | HOLE       | NO. (A     | nom on d  |          | · · · · · · · · · · · · · · · · · · · |          |              |           |            |                       |                                       |
| Description of Moli (Constraint)         Its. Elevator (ROURDERDR)         Italiant (Constraint)         Italiant (Constrain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            | ~         |          | l                                     | <b>[</b> | 4 10         | al number | CCRE BC    | ×23 -                 |                                       |
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| T. THEORES & COURSES OF OUR DECK         40.7         IS. TOUL CORE RECOVERY FOR BORDE           IDENTING LIDEN FOR SOCK         5.0         IS. TOUL CORE RECOVERY FOR BORDE           IDENTING LIDEN         CLESSFCITION<br>(Description of HOLE)         SCORE RECOVERY FOR BORDE           IDENTING OF HOLE         CLESSFCITION<br>(Description of HOLE)         SCORE RECOVERY FOR BORDE           IDENTING OF HOLE         CLESSFCITION<br>(Description of HOLE)         SCORE RECOVERY FOR BORDE           IDENTING OF HOLE         CLESSFCITION<br>(Description of HOLE)         SCORE RECOVERY FOR BORDE           IDENTING OF HOLE         CLESSFCITION<br>(Description of HOLE)         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         CLESSFCITION<br>(Description of HOLE)         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY FOR BORDE         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY FOR BORDE         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY FOR BORDE         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY FOR BORDE         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY FOR BORDE         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY FOR BORDE         SCORE RECOVERY FOR BORDE           IDENTION OF HOLE         SCORE RECOVERY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |            |           | une      | DEG. FROM                             | VERT.    | <u>e. De</u> | E HOLE    | 1          | 1-30-94               | 12-3-94                               |
| OPPIN BALLIS FIN & HALL         SUM         Fig. Source of Asserting           ITURU 0FH & HALL         4.50"         ISCURPT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 7. THCC    | NESS OF O  | VERSURDEN |          | 40.0*                                 | - F      |              |           |            |                       |                                       |
| TUDE DEPTH         LESUE         ESUMOS         ELESTICATION         X code Summer of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a support of a s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |            |           |          |                                       |          |              |           | ASPECTOR   |                       |                                       |
| DEFM         LEEXO<br>b         Common<br>c         Common<br>b         Common<br>c         Start<br>Common<br>c                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            | 1          | HOLE      |          |                                       |          |              | · · · · · |            | SUE                   | 85                                    |
| 41.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            |            | •         |          | Description)                          |          | •            | RECOVERY  | SUPLE      | (Drilling time, write | r loss, depth of<br>If significant)   |
| 44.0<br>RETUSAL<br>BOTTOM OF HOLE- 45.0<br>47.0<br>50.0<br>55.0<br>55.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0      |            | 41 5-      |           |          |                                       |          | ·            |           | 1          |                       |                                       |
| PREFUSAL           BOTTOM OF HOLE- 45.0           47.0           50.0           50.0           53.0           55.0           55.0           55.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | • <u>.</u> |            |           |          |                                       |          |              |           |            | J RRB                 |                                       |
| REFUSAL         BOITTOM OF HOLE- 45.0         12-3-94<br>GROUT 0-45.0'           47.0-1         50.0         50.0           53.0         55.0         55.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -          |            |           |          |                                       |          |              |           |            |                       |                                       |
| AT.0         BOITTOM OF HOLE- 45.0         12-3-94<br>GROUT 0-45.0'           47.0         50.0         53.0         12-3-94<br>GROUT 0-45.0'           55.0         55.0         55.0         55.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |            |           |          |                                       |          |              |           |            |                       |                                       |
| REFUSAL         BOITTOM OF HOLE- 45.0         12-3-94<br>GROUT 0-45.0'           47.0-1         50.0         50.0           53.0         55.0         55.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | -          | 44_0       |           |          |                                       |          |              |           | 1          |                       |                                       |
| BOTTOM OF HOLE- 45.0<br>47.0-<br>50.0-<br>53.0-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>56.0-<br>10-<br>10-<br>10-<br>10-<br>10-<br>10-<br>10-<br>10-<br>10-<br>1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |            | REFISA    |          |                                       |          |              |           |            |                       |                                       |
| 47.0<br>47.0<br>50.0<br>55.0<br>55.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>56.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0<br>57.0 | -          |            |           | BOTTOM   | LOF HOLE- 45.0                        |          |              | <br>      | <u>+</u>   | 12-3-94               |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |            |            |           | 20110    |                                       |          |              |           |            |                       |                                       |
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| 53.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | :          | 47.0       |           |          |                                       |          | 1            |           |            |                       | •                                     |
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| 59.0-TT<br>TT<br>TT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 15         | 56.0       |           | -        |                                       |          |              |           |            |                       |                                       |
| 59.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |            | 거          |           |          |                                       |          |              |           |            |                       |                                       |
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| 59.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | ]          |            |           |          |                                       |          |              |           |            |                       |                                       |
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| PROJ    | च्च                     |                |                |                     | hơ 2     | TE AND TH  | TE OF BT       | 5 AUGER 8                                                                                                       | 2 3 1/8 RB                            |
|         |                         |                |                | STORATION, NEWARK   | 11. 0    | TUN FOR E  | LEVATION :     | SHOWN (TRULISL, OR I                                                                                            | NCYO)                                 |
| LOCU    | TON (Coort              | dinates or     | Station)       |                     |          |            |                |                                                                                                                 |                                       |
| <b></b> |                         |                | SITE PL        |                     | 12, 🛩    | NUFACTORS  | K2 DE20        | HATICH OF DRLL                                                                                                  |                                       |
| RL      | ING AGENC               |                | DISTRICT       | •                   |          | _          |                | FAILING 31                                                                                                      | 4                                     |
|         |                         |                | N              |                     |          | THE HO, OF |                | DISTURBED                                                                                                       | UNDESTURGED                           |
| HOLE    | NO. (As s<br>Te number, | horm oa d<br>) | lowing title   | H-8.                |          | ROEN SAMP  |                | <u> </u>                                                                                                        | · [ _0                                |
|         |                         | -              | <u> </u>       |                     | _וי⊾ דסו | ol hundes  | R CORE BO      | DES .                                                                                                           |                                       |
| NAME    | OF DRILLE               | n no           | ON             |                     | 15. 11   | VATION OR  | CUNDRATER      |                                                                                                                 | ÷                                     |
| 0000    | TON OF H                | αF             |                | ·····               |          |            |                |                                                                                                                 |                                       |
|         | ERTICAL                 |                |                | DEC. FROM VERT.     | IL DO    | e hole     | 1              | 6-20-94                                                                                                         | 6-20-94                               |
|         |                         |                |                |                     | 17 515   | VATION TOP |                |                                                                                                                 | <u> </u>                              |
| THCO    | 655 OF O                | VERSURCE       | (              | 16.0                |          |            | - 04 1002      | ·                                                                                                               | · · · · · · · · · · · · · · · · · · · |
| DEPTH   | DRILLED                 | NTO ROCK       | _              | 0.0                 |          |            |                | OR BORING                                                                                                       | N/A                                   |
| TOTAL   | DEPTH OF                | HOLE           |                | 16.0                | 19. 500  | WIURE OF   | RESPECTOR      | M. ROGALSKI                                                                                                     |                                       |
| 1       |                         | 4              | 045            | SFICATION           | 1        | X CORE     | BCX DR         | 1 REMA                                                                                                          | Pars                                  |
| VATION  |                         | 100300         |                | escription)         |          | RECOVERT   |                | (Drilling time, wate                                                                                            | r loss, depth of                      |
| •       | ь                       | c              | 1              | ď                   |          | OR W.C.    | HO             | weathering, sta.,                                                                                               | . If significant)<br>                 |
| 1       | L                       | 00             | 1              |                     |          | 1          | 1              | 1                                                                                                               |                                       |
|         |                         |                | -              |                     |          | 1          | JAR            |                                                                                                                 |                                       |
|         | コ                       |                | (SM) S         | ILTY SAND W/ GYPSUK | 1        | 1          |                | VOA 0.0 PPM                                                                                                     |                                       |
|         |                         |                | }              |                     |          |            | <u></u> #1     |                                                                                                                 |                                       |
| •       | _                       | <u>i e i e</u> | <u> </u>       |                     |          |            |                | _                                                                                                               | <u>2-7-7-</u> 6                       |
|         |                         |                |                | · •                 |          | 1          |                | -                                                                                                               |                                       |
|         |                         |                | (SP) F         | LACK POORLY GRADED  | STINU    |            | JAR            | VOA 0.0 FPM                                                                                                     |                                       |
|         | 3.0                     |                |                | AVEL & ASPHALT FRAG |          |            | #2             | WATER LEVEL                                                                                                     |                                       |
|         |                         |                | <b>n</b> / Gro | AVEL & ASPEALI PRAG | •        |            | "-             |                                                                                                                 |                                       |
|         |                         | • • •          |                |                     | -        |            |                |                                                                                                                 | <u>7-7-8-8</u>                        |
| 1       |                         |                |                |                     |          |            |                |                                                                                                                 |                                       |
|         | ;                       |                | SAME           |                     |          |            | JAR            |                                                                                                                 |                                       |
| 1       | 그.                      |                |                |                     |          |            | #3             | VOA 0.0 PPM                                                                                                     |                                       |
|         | 4_                      | • • •          |                | •                   |          |            | ~ ~            |                                                                                                                 | 2-1-1-1                               |
|         | 6.0                     |                |                |                     |          |            |                |                                                                                                                 | 2-1-1-1                               |
|         | ,                       | ••••           | (              |                     |          |            | JAR            |                                                                                                                 | -                                     |
| 1       | <u>-</u>                |                |                | ROWN POORLY GRADED  |          |            |                |                                                                                                                 |                                       |
| -       |                         |                | W/ GRA         | VEL & ORGANICS      |          |            | <del>#</del> 4 | VOA 0.0 PPM                                                                                                     |                                       |
|         |                         | _ • • • •      |                |                     | - 1      |            |                |                                                                                                                 | 1-1-1-1                               |
|         | ⊐ē                      |                |                |                     | t        | 1          |                | ,                                                                                                               |                                       |
|         | -1                      | 9 9            |                |                     |          | 1          | JAR            |                                                                                                                 |                                       |
| 19      | 9.0 — ļģ                |                |                | YOWN & BLACK SILTY  | _        |            | 1              |                                                                                                                 |                                       |
|         | 그나                      | , T , T        | SAND W         | / GRAVEL & ORGANICS | >        |            | <b>#</b> 5     |                                                                                                                 | i                                     |
|         |                         | \$ ] \$ _      |                |                     |          |            |                |                                                                                                                 | 5-3-3-2                               |
|         |                         | <b>\ \  </b>   |                |                     |          |            | ·              |                                                                                                                 |                                       |
| 1       |                         | 9 9            | o              |                     |          | .          | JAR            |                                                                                                                 |                                       |
|         | ^                       | 691            | SAME           |                     | 1        |            | <i></i> #6     |                                                                                                                 |                                       |
|         |                         | T L TI         |                |                     |          | ł          | # -            |                                                                                                                 |                                       |
| 112     | 2.0 —                   | φ T 6 -        |                |                     | -        | · · · ·    |                |                                                                                                                 | 1-1-1-2                               |
|         | 16                      | <b>b</b>       |                |                     | ł        |            |                |                                                                                                                 | ł                                     |
|         |                         | 9 9            | (SM/CL)        | BROWN SILTY SAND    |          |            | JAR            |                                                                                                                 | İ                                     |
|         | P                       | 191            |                | & ORGANICS          | 1        |            | <i></i> #7     |                                                                                                                 | <br>                                  |
|         |                         | ۳ L ۳I         | ,              |                     |          |            | 1              |                                                                                                                 | 1-1-1-1                               |
|         | ٦ř                      | 6 7 61-        | <del></del>    |                     | ┢─       | ——         |                |                                                                                                                 |                                       |
| 1       | 1.                      | 6              |                |                     |          |            | JAR            |                                                                                                                 | ŀ                                     |
| 15      | 5.0                     | φ   φ          | SAME           |                     |          |            |                | VOA 15.5 -                                                                                                      | 16.0 L                                |
|         | 그학                      | ŢġIJ           |                |                     |          | 1          | #8             | -                                                                                                               | F                                     |
|         | _ <u>_</u> _            | <u> </u>       |                |                     |          |            | {              |                                                                                                                 | 1-1-2-3                               |
| 1       |                         | Ī              | BOITOM         | OF BORING 16.0      | 1        | 1          | Ī              | HOLE GOLDED                                                                                                     |                                       |
| 1       |                         |                |                |                     | ļ        |            | 1              | HOLE GOUTED<br>W/ 1 EAG GR                                                                                      | rout L                                |
|         |                         |                |                |                     |          | I          |                | -                                                                                                               |                                       |
| 1       | Ľ                       | 1              |                |                     | 1        |            |                |                                                                                                                 | -                                     |
| 18      | .c –                    | }              |                |                     |          |            | 1              |                                                                                                                 |                                       |
|         |                         |                |                |                     |          | 1          |                |                                                                                                                 | Ξ                                     |
|         |                         | 1              |                | •                   | 1        |            | 1              |                                                                                                                 | <u>+</u>                              |
| 1       |                         | -              |                |                     |          |            | 1              |                                                                                                                 | -                                     |
| 1       |                         | 1              |                |                     | 1        | 1          |                |                                                                                                                 |                                       |
|         |                         | 1              |                |                     |          | 1          | 1              |                                                                                                                 |                                       |
|         |                         |                |                |                     |          |            |                |                                                                                                                 | ÷                                     |
|         |                         |                |                |                     |          |            |                |                                                                                                                 |                                       |

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| DRILL   | JNG LU    | 6           |              | CENAU              |                    |         | 1                                            | しと                     | NAN-FF            |            |                                 | !           | ur a sheelis                          |       |        |
|---------|-----------|-------------|--------------|--------------------|--------------------|---------|----------------------------------------------|------------------------|-------------------|------------|---------------------------------|-------------|---------------------------------------|-------|--------|
| PROJET  |           | RIVER E     | BANK RE      | STORATION          | I. NEWA            | RK      |                                              | AND TYPE               |                   |            | AUGER                           |             | ) 1/8 RB                              | -     |        |
|         |           | Inches or S | terion)      |                    |                    |         | 1                                            | NFACTORER              |                   |            | OF DRUL                         |             |                                       | _     |        |
| TRELLA  | G AGENCI  |             | SITE PL      |                    |                    |         | <u>]                                    </u> |                        |                   | <u>ا</u>   | ALING 3                         | 14          |                                       |       | •      |
| `,      |           | hown on dr  |              | r                  |                    |         | IL TOU                                       | n, no. of<br>Den sampl | over-<br>es taken |            | pesturaeen<br>8                 |             | UNDISTUREED<br>0                      |       | •      |
| സര്ത്   | e sumber) | )           |              | B3-                | -94                |         | 14. 100                                      | L HUMBER               | CORE 800          | E          |                                 |             |                                       |       | •<br>• |
| NALIE   | OF DRILLE | R MOC       | N ·          |                    |                    |         | 15. 215                                      | ATION GRO              | UNINUTER          |            | <u>`</u> `                      | <u> </u>    | · · · · · · · · · · · · · · · · · · · | _     |        |
| DIRECT  | ION OF HE |             | I INED       |                    | DEG. FRO           | W VERI. | 16. 001                                      | E HOLE                 |                   | 6-20       | 94                              |             | 6-20-94                               |       |        |
|         |           |             |              |                    | 16.0               |         | 17. 8.0                                      | ACTION TOP             | OF HOLE           |            |                                 |             |                                       |       |        |
|         | DRELED    | NERSURDEN   |              |                    | <u>16.0</u><br>0.0 |         |                                              | AL CORE RE             |                   |            |                                 |             | N/A                                   | _     |        |
|         | DEFIH OF  |             |              | 16.0               |                    |         | 192 523                                      | ·                      |                   | М.         | ROGALSK                         |             |                                       | _     |        |
| EVATION | DE541H    | 10000       |              | Description)       |                    |         |                                              | RECOVERT               |                   | 0          | rilling time, a<br>vectoring, a | et ac       | bes, depth of<br>significant)         |       |        |
| a       | -         |             | BLACK        |                    |                    | IFNT    |                                              | •                      |                   | <u> </u>   |                                 |             | SPT_BLOWS/                            | +     |        |
|         |           |             | (SM)         | REDDISH<br>W/ GRAV | BROWN              |         |                                              |                        | JAR<br><i>⋕</i> 1 | PID        | READING                         | 0.0         | PPM<br>3-5-9-6                        |       |        |
|         |           |             | · <u></u>    |                    |                    |         |                                              |                        |                   | İ          |                                 |             |                                       |       |        |
|         | 3.0       |             | SAME         |                    | •                  |         |                                              |                        | JAR<br>#2         | PID        | READING                         | 0.0         | PPM                                   |       |        |
|         | _         |             |              |                    |                    |         |                                              |                        |                   |            |                                 |             | 3-10-7-3                              |       |        |
|         |           |             | (51()        | REDDISH            | PROWN              | רוו די  | SAND                                         |                        | JAR               |            |                                 |             |                                       |       |        |
|         |           |             | (SM)<br>W/ ( | GRAVEL &           | ROCK               | FRAG.   |                                              |                        | <b>#</b> 3        | PID        | READING                         | 0.0         |                                       | F     |        |
|         | 6.0       |             | <u></u>      |                    |                    |         |                                              |                        |                   | 1          |                                 |             | 3-9-6-22                              | E     |        |
|         |           |             | SAME         |                    |                    |         |                                              |                        | JAR               |            | READING                         | 0.0         | PPV                                   | F     |        |
|         |           |             | J.C.M.C.     |                    |                    |         |                                              |                        | <del>7</del> 4    |            | READING                         | 0.0         | 20-9-23-18                            | Ē     |        |
|         |           |             |              |                    |                    |         |                                              |                        |                   |            | •                               |             | <u> </u>                              |       |        |
|         |           | ]           | SAME         |                    | ۰°                 |         |                                              |                        |                   | PID<br>WAT | READING                         | 0.0<br>JNTE | red o                                 | F     |        |
|         | 9.0 —     |             | 20           |                    |                    |         |                                              |                        | £5                | d. 1       | 10.5                            |             | 11-30-50                              | E     |        |
|         | -         | 000         |              |                    |                    |         |                                              |                        |                   | Ţ          |                                 |             |                                       | F     |        |
|         |           |             | SAME         |                    |                    |         |                                              |                        | JAR<br>≇6         | 1          | READING                         | 0.0         | PPM                                   | F     |        |
| Ì       |           |             |              |                    |                    |         |                                              |                        | 70                |            |                                 |             | 8-5-10-9                              | F     |        |
|         | 12.0 —    |             |              |                    |                    |         |                                              |                        | JAR               | ]          |                                 |             |                                       | F     |        |
|         |           |             | SAME         |                    |                    |         |                                              |                        | #7                | PID        | READING                         | 0.0         | PPM                                   | E     |        |
|         |           |             |              |                    |                    |         |                                              |                        |                   | 1          |                                 |             | 2-3-2-5                               |       |        |
|         | _         |             |              |                    |                    |         |                                              |                        | JAR               |            |                                 |             |                                       | F     |        |
|         | 15.0 —    |             | SAME         | W/ TR. V           | NOOD F             | RAG.    |                                              |                        | <i>#</i> 8        | PID        | READING                         | 0.0         |                                       |       |        |
|         |           |             |              |                    |                    |         |                                              | <u> </u>               | <br>              | <u> </u>   |                                 |             | 4-4-5-9                               |       |        |
|         |           |             | BOTTO        | OM OF BO           | RING 1             | 6.0     |                                              |                        |                   | HOL        | E GOUTEI<br>1 BAG G             | )<br>ROU    | τ                                     |       |        |
|         |           |             |              |                    |                    |         |                                              |                        |                   | 7          | PVC NON                         | ΠOR         | ING                                   | F     |        |
|         | <br>18.0  |             |              |                    |                    |         |                                              |                        |                   | WE         | L SET Ø                         | ď.          | 15.0                                  |       |        |
|         |           |             |              |                    |                    |         |                                              |                        |                   |            |                                 |             |                                       | E     |        |
|         |           | -           |              |                    |                    |         |                                              |                        |                   | 1          |                                 |             |                                       |       |        |
|         |           | _           |              |                    |                    |         |                                              |                        | }                 |            |                                 |             |                                       | Ļ     |        |
|         | _         | -           |              |                    |                    |         |                                              |                        |                   |            |                                 |             |                                       | F     |        |
|         |           |             |              |                    |                    |         |                                              |                        |                   |            |                                 |             | TIERRA                                | -B-01 | 18     |

| DRIL     | LING LO              | G           | DATSION CENAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | POINU             | CE                     | NAN-P      | R                           | OF 2 SHEETS                   |          |
|----------|----------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------|------------|-----------------------------|-------------------------------|----------|
| Ľ        |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   | E AND TYPE             |            | 5" AUGER &                  |                               |          |
| ុ ។      | ASSING               |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 11. DAT           | UN FOR EL              | EVATION 5  | HOWN (TEXLICS, OR H         | CAO)                          |          |
| 2 1001   | ION (Coord           | induse or S | SITE FLAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 12                | AFACTORER              |            | WITCH OF DRUL               | <b></b>                       | 1        |
| AU       | NG AGENCT            |             | DISTRICT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                        |            | FAILING 314                 |                               | 4        |
|          |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | nizi, toti<br>Bur | al ho, of<br>Den sampl | es then    | DESTURBED<br>8              | 0                             |          |
| I and f  | NCL (As an internet) |             | B-3-94                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 14. 100           | AL HONCER              | CORE BO    | 23                          |                               | ]        |
| IS NUCE  | OF DRUD              | R MOC       | N                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 15. ELD           | WITCH GRO              | UNDICATER  |                             |                               |          |
| S. DREL  | DON OF HO            | IE .        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16. 04            | EHOLE                  |            | 6-20-94                     | 6-20-94                       |          |
|          | ERTICAL              |             | CLINED DEC. FROM VERT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 17. EE            | YATION TOP             | OF HOLE    |                             |                               | 1        |
| 7. THOO  | 053 OF 0             |             | 16.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 18. 101           | NL CORE RE             | COVERY F   | OR BORING                   | N/A                           | 1        |
|          | DRULED 1             |             | 0.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 19. 503           | KTURE OF               | RSPECTO    | M. ROGALSKI                 |                               | ł        |
| 2 7004   | DEPTH OF             |             | CLASSFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | /                 | X CORE                 |            | for the training the second | r loss depth of               | 7        |
| TEVATION | рертн<br>ь           | 10000       | (ටසෙන්දර්ගා)<br>ජ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | RECOVERT<br>OR W.C.    | NO         | weathering, sta.            | Y significant)<br>SPT BLO#5/F |          |
| .        |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   | 1                      | <u> </u>   |                             |                               | E        |
| • •      | -                    |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               | E        |
| 1        |                      |             | AIR MON. READINGS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                        |            |                             |                               |          |
|          | -                    |             | CGI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                        |            |                             |                               | F        |
|          |                      |             | PID O <sub>2</sub> I LEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                        |            |                             |                               | E        |
|          | -                    |             | Ectow BreathingBreathingEreath<br>c. IGround Zone Zone Zone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                        |            |                             |                               | F        |
| '        | _                    |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               | F        |
| F        |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        | 1          |                             |                               | F        |
|          |                      |             | 5.0 10 ppm 0 ppm 1 20.9 1 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                        |            |                             |                               | E        |
| ļ        |                      |             | E.0 10         porm         0         porm         20.9         0           10.0 10         porm         0         porm         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0         0< |                   |                        |            |                             |                               |          |
|          |                      |             | 12.010 ppm 0 ppm 20.9 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                        |            |                             |                               | F        |
|          |                      |             | 14.010 00m 0 00m 20.9 0<br>15.010 00m 0 00m 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                        |            |                             |                               |          |
|          |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               | F        |
|          |                      |             | SOIL SAMPLES MAILED TO NE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Ð                 |                        |            |                             |                               | F        |
|          |                      |             | LABS 7-19-94 @ 1630 HRS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | S.                |                        |            |                             | _ ·                           | F        |
|          | -                    |             | 0.0-8.0'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                        |            |                             |                               | F        |
|          |                      |             | $\frac{\#1}{\#1} - 2 - 40 \text{ ML} - \text{VOA}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | {                 |                        |            |                             |                               | E        |
|          |                      |             | #2 - 1-8 OZ - SEMI-VOL<br>#3 - 1-8 OZ - TAL META                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                        |            |                             |                               | E        |
|          |                      |             | $\frac{\pi}{4} - 1 - 8 \text{ OZ} - \text{TRPH}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                        |            |                             |                               |          |
|          |                      |             | <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                        | <b>!</b> . |                             |                               | F        |
|          |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               | F        |
|          |                      |             | 8.0-16.0*                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 1                 |                        | 1          |                             |                               | F        |
|          |                      |             | #5 - 2-40 ML - VOA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   | 1                      |            |                             |                               | F        |
|          |                      |             | #5 - 1-8 OZ - SEMI-VOL<br>#7 - 1-8 OZ - TAL META                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                        |            |                             |                               | E        |
|          |                      |             | #7 - 1-8 OZ - TAL MEIA<br>#8 - 1-8 OZ - TRPH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                        |            |                             |                               | E        |
|          |                      | }           | $\frac{\pi O}{\pi O} = 1 - 40 \text{ ML} - \text{TRIP BL}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ANK               |                        |            |                             |                               | E        |
|          |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               |          |
| 1        |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               |          |
| 1        |                      | 1           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               | <u> </u> |
|          |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               | F        |
|          |                      | 1           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        | 1          |                             |                               | F        |
|          |                      |             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                        |            |                             |                               |          |
| ł        |                      | 1           | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | l                      | ł          | 1                           | TIERRA-B-01                   | 8249     |

| DRILL          |                           | <br>;        | DMISICH C                                                                                                       | <br>ENAD                            | POTAL    |                     | NAN-P               | R                             | STEET 1<br>OF 1 STEET | 5         |
|----------------|---------------------------|--------------|-----------------------------------------------------------------------------------------------------------------|-------------------------------------|----------|---------------------|---------------------|-------------------------------|-----------------------|-----------|
| 1. PROJE       | <del></del>               |              |                                                                                                                 |                                     |          | E AND TYP           |                     |                               |                       |           |
|                |                           |              |                                                                                                                 | ATION, NEWARK                       | 11. DAT  | UN FOR E            | EVADON 3            | HOWN (TBULKS, OR M            | GVD)                  |           |
| •              | ION (Coord)               | SE           | <u>e site plan</u>                                                                                              |                                     | 12       | UFACTORE            | CC 20 27            | FAILING 314-                  | .c                    |           |
| J. DRILLA      | NG AGENCT                 | MOBIL        | E DISTRICT                                                                                                      |                                     | 13. 101  | AL NO. OF           | OMER-               | 05708950                      | UNDISTURES            | $\neg$    |
| 4. HOLE        | HO. (As she<br>le number) | <b>00 mm</b> | drowing title                                                                                                   | NKG-20                              |          | AL NUMBER           |                     |                               | 0                     |           |
|                | OF DRUE                   |              | BUSH                                                                                                            |                                     | ]        | AL NUMBER           |                     |                               | ~                     |           |
|                | NON OF HO                 |              |                                                                                                                 |                                     | +        |                     |                     | 4-7-94                        | 4-7-94                |           |
|                | ERNCAL                    |              | INCLINED                                                                                                        | DEG. FROM VERT.                     | 16. DAT  |                     |                     |                               | 4-7-3-                | _         |
| 7. THOM        | IESS OF ON                | CRURD        | EN                                                                                                              | 15.0                                | 1        | VATION TOP          |                     | 14.9 ± -                      | N/A                   |           |
|                | DRILLED \$                | _            | the second second second second second second second second second second second second second second second se | 0.0                                 |          | NTURE OF            | NSPECTO             |                               |                       |           |
| 9. TOTAL       | יס אויישט                 | HOLE         |                                                                                                                 | 5.0                                 | <u> </u> |                     | BOX OR              |                               | bCS<br>from denth of  |           |
| CLEVATION<br>C | DED-LH<br>P               | LEED(<br>c   | D (Descri                                                                                                       | ption)                              |          | RECOVERY<br>OR W.C. | NO                  | section, etc.                 | t significant)        | <u>۴1</u> |
|                |                           |              |                                                                                                                 |                                     | 7        |                     | JAR                 |                               |                       | <u> </u>  |
|                |                           |              | W/ SAND,                                                                                                        | ALT OVER (ML) SIL<br>GRAVEL & BRICK | FRAG.    | 1.0                 | #1                  |                               | 7-12                  |           |
|                |                           |              |                                                                                                                 | DISH BROWN SILT                     |          |                     | JAR                 | 1                             | <u> </u>              |           |
|                |                           |              | SAND, GR                                                                                                        | VEL & ERICK FRA                     | Ġ.       |                     | #2                  |                               |                       | E         |
|                | 3.C.                      |              |                                                                                                                 |                                     |          | 0.8                 | I                   |                               | 18-14-7               |           |
|                |                           |              | SAME                                                                                                            |                                     |          |                     | JAR<br>#3           |                               |                       | -         |
|                |                           |              |                                                                                                                 |                                     |          | 0.9                 | <i><sup>π</sup></i> |                               | 11-8-14               |           |
|                | 6.C                       |              | SAME ·                                                                                                          |                                     |          |                     | JAR                 |                               |                       | F         |
|                |                           |              | Jom's                                                                                                           |                                     |          | 0.₄                 | <i>₩</i> 4          |                               | 5-6-5                 | <u> </u>  |
|                |                           |              |                                                                                                                 |                                     |          |                     | JAR                 |                               |                       | E         |
|                | 4                         |              | SAME                                                                                                            | REDDISH BR.                         |          | 0.8                 | £5                  |                               | 3-8-14                |           |
| ļ              |                           |              |                                                                                                                 |                                     |          |                     | JAR                 |                               |                       |           |
|                |                           |              | SAME                                                                                                            |                                     |          | 1.0                 | <b>#</b> 6          |                               | 7-14-22               | <u> </u>  |
|                | 9.C —                     |              |                                                                                                                 |                                     |          | 1.0                 | JAR                 |                               |                       | E         |
|                |                           |              | SAME                                                                                                            |                                     |          |                     | #7                  |                               | 4-8-7                 | E         |
|                |                           |              |                                                                                                                 |                                     |          | 1.0                 |                     |                               |                       | Ť-        |
|                |                           |              | SAME                                                                                                            |                                     |          |                     | JAR<br>#8           | OIL ON SPUTSP<br>W/ STRONG OD |                       | E         |
| 1              | 2.0                       |              |                                                                                                                 |                                     |          | -0.5                |                     |                               | 3-4-5                 | <br>      |
|                |                           |              | SAME                                                                                                            |                                     |          |                     | JAR-<br>#9          |                               |                       | Ļ.        |
|                |                           |              |                                                                                                                 | P.P.=0.3 TSF                        |          | 0.5                 | <u>₩</u> Э          | -                             | 3-1-9                 | <u> </u>  |
|                |                           |              | E UE                                                                                                            |                                     |          |                     | JAR                 |                               |                       | F         |
|                |                           |              | SAME                                                                                                            |                                     |          | 0.6                 | <b>#</b> 10         |                               | 4-3-7                 | <u>}-</u> |
| I              | 5.0                       |              | BOTTOM O                                                                                                        | F BORING 15.0                       |          |                     |                     | HOLE GOUTE<br>W/ 1 EAG G      | D<br>ROUT             | E         |
|                | -                         |              |                                                                                                                 |                                     |          |                     |                     |                               |                       | E         |
|                |                           |              |                                                                                                                 |                                     |          |                     |                     |                               |                       |           |
|                |                           |              |                                                                                                                 |                                     |          |                     |                     |                               |                       | F         |
| 1              | 8.0                       |              |                                                                                                                 |                                     |          |                     | 1                   |                               |                       | E         |
|                |                           |              |                                                                                                                 |                                     |          |                     |                     | 1                             |                       |           |
|                |                           |              |                                                                                                                 |                                     |          |                     |                     |                               |                       | <u> </u>  |
|                |                           |              |                                                                                                                 |                                     |          |                     |                     | TABLE                         | B-1 (39)              | -         |
|                |                           |              | 1                                                                                                               |                                     |          |                     |                     | 1                             |                       | <b>→</b>  |

TIERRA-B-018250

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|           | LLING LOC                                  |              | DMSION N          | EW YORK DISTRICT                                | -          |            |            | Hole No.                          | W7-9                                        |
|-----------|--------------------------------------------|--------------|-------------------|-------------------------------------------------|------------|------------|------------|-----------------------------------|---------------------------------------------|
|           |                                            | ·            | P.                | ASSAIC RIVER DIV.                               | INST       | ALLATION   |            |                                   | SHEET :<br>OF 2 SHEETS                      |
| 1. PRO    |                                            | RIVER        | BANK RE           | STORATION, NEWARK                               |            | ZE AND TY  |            |                                   | TER ROTARY                                  |
| -         | ATION (Coordin                             | otes or      | Station)          |                                                 | ם .יין<br> | ATUM FOR   | ELEVATIO   | N SHOWN (TBM,MSL. OR I            | NGVD)                                       |
| J. DBIL   | LING AGENCY                                | SEE          | SITE PL           | AN                                              | 12. M      | ANUFACTOR  | ER'S DES   | IGNATION OF DRILL                 |                                             |
| Į         | WAF                                        |              | GEORGE, I         | NC.                                             |            | TAL NO. OF | MOBIT      | ± 8-61 (SKID RIC                  | G ON BARGE)                                 |
| 4. HOLE   | NO (As sho<br>file number)                 | wh or di     | awing title       | WT-9                                            |            | URDEN SAM  | PLES TAN   | EN DISTURBED                      | UNDISTURGED                                 |
| 5. NAN    | OF DRILLER                                 | J. GOI       |                   |                                                 | 14. TO     | TAL NUMBE  | R CORE     | EOXES                             |                                             |
| 6 DIRE    | CTION OF HOL                               |              |                   |                                                 | 15. EL     | EVATION N/ | 4          |                                   |                                             |
| 1         |                                            | -            | CLINED            | DEC. FROM VERT.                                 | L          | TE HOLE    |            | 1-24-95                           | 1-25-95                                     |
|           | NESS OF OVE                                |              |                   | >30 FT.                                         | · · · · ·  |            |            | DLINE -2.5 FT±                    | ·                                           |
| +         | H DRILLED INT                              |              |                   | 0.0 FT.                                         | 18. TOT    | PECTOR(S)  | ECOVERY    | FOR BORING                        | N/A                                         |
| ELEVATION | 1 1                                        |              | CLAS              | 30 FT.                                          |            |            | D. MA      | ZUJIAN/M. TORSIEL                 |                                             |
| c         | ФЕРТН                                      | LEGEND       |                   | escription)                                     |            | RECOVERY   | SAUP       | C (Drilling time, water           | lott dama of                                |
|           |                                            | 11.53        | (OH) DA           | RK OLIVE GRAY/BLACK OR                          |            | OR W.C.    | I NO       | weathering, etc.,                 | if significant)<br><u>set Elows /6 in l</u> |
|           |                                            |              | CLAY, Wi          | LI. VERY SOFT STRONG P                          | HC         |            | S~1        | I WIN DUNLIN U                    | FSS = -                                     |
|           |                                            |              | ODUR, FI          | REQUENTLY STAINED BLACK                         | -          |            |            | 6.1, 1.4, 1.9                     |                                             |
|           |                                            | 1/10         |                   |                                                 |            |            | S-2        | OVM SCREEN C                      |                                             |
|           |                                            | 112          |                   |                                                 |            |            | -          | BDL                               | E                                           |
|           |                                            |              |                   |                                                 |            |            |            |                                   | WOR/2 FT                                    |
|           |                                            |              |                   |                                                 |            |            | S-3        | OVM SCREEN 0<br>0.5, 0.0, 0.5,    |                                             |
|           |                                            | UA.          |                   |                                                 |            |            |            |                                   | WOR/2 FT                                    |
|           |                                            |              | CRADU             | NG WITH LITTLE CINDERS                          |            |            | S-4        | OVM SCREEN O                      | F SS = -                                    |
|           | ε.c//                                      |              | BROW              | WN SLAG                                         | ND         |            |            | 1.4. 2.4. 2.3 p                   | WOR/2 FT                                    |
|           | -//                                        | 1]) <u>)</u> |                   |                                                 | Ī          |            | S-5        | OVM SCREEN OF                     |                                             |
|           |                                            |              | GRADIN            | NG WITHOUT CINDERS AND                          | SLAG       |            | 0.0        | 1.9, 2.9, 5.8 p                   | pm 🗖                                        |
|           | E E                                        | 1/ix         | GRADIN<br>CINDE   | IG WITH OCCASIONAL PART                         | INGS       |            |            |                                   | WOR/2 FT                                    |
|           |                                            |              |                   |                                                 |            |            | S-ō        | OVM SCREEN OF<br>3.8, 2.3, 2.3, 2 | SS =                                        |
| 1:        | ∑.0 — <u> </u>                             |              |                   | ·                                               | -          |            |            | 2.0, 2.0, 2.0, 2                  | WOR/2 FT                                    |
|           |                                            |              | GRADIN            | G WITH FREQUENT                                 |            |            | S-7        | OVM SCREEN OF                     | SS = -                                      |
|           |                                            |              | DEĈO              | MPOSED SHELL                                    |            |            |            | 3.8, 5.7, 9.9, 2                  | 2.3 ppm                                     |
|           |                                            | 1X           | GRADIN            | G WITH OCCASIONAL LAYER                         |            |            | 5-8        | OVM SCREEN OF                     |                                             |
|           |                                            |              | 2 10              | 5 THICK OF COARSE TO<br>SAND, TRACE FINE GRAVEL |            |            |            | 1.8, 1.4, 1.4 pr                  | om E                                        |
|           | 5.C <u></u>                                | • • (        | SP) DARK          | GRAY COARSE TO EINE E                           |            | <u> </u>   |            |                                   | DR/1_FT-2-2                                 |
|           |                                            |              | RACE FINE         | GRAVEL TRACE SILT, WET                          |            |            | 2-5<br>2-5 | OVM SCREEN OF                     |                                             |
|           |                                            |              | GRADING           | WITH SOME COARSE TO                             |            |            |            | BDL                               | 2-2-3-4                                     |
| ĺ         |                                            | - :          | FINE G            | RAVEL DENSE                                     |            |            | S-10       | OVM SCREEN OF-                    | -S\$ = -                                    |
| 20        | .0                                         |              | <b>66</b> -7      |                                                 |            |            |            |                                   | 6-15-17-14                                  |
|           |                                            |              | GRADING<br>FINE G | WITH LITTLE COARSE TO<br>RAVEL. MEDIUM DENSE    |            |            | 5-11       | OVAL SCREEN OF                    |                                             |
|           |                                            |              |                   |                                                 |            | .          | - ''       | OVM SCREEN OF                     | SS = -15 - 14 - 1212                        |
| Í         |                                            |              | GRADING           | TO YELLOWISH RED AND                            |            |            |            |                                   |                                             |
|           | _:··                                       | •            | MEDIUM<br>-       | DENSE                                           |            | 1          | 5-12       | OVM SCREEN OF                     |                                             |
| 24.       | c •                                        | • I          |                   | TO FINE SAND, LITTLE                            | -          |            |            | BDL -                             | 5-5-5-8                                     |
|           | _                                          |              | SILT, W           | THOUT GRAVEL                                    |            | s          | -13        | OVM SCREEN OF                     |                                             |
|           |                                            | • .          |                   |                                                 |            |            |            | BDL                               | 7-7-8-9 F                                   |
| •         | · _ · · ·                                  | . •          |                   |                                                 | j –        |            | -14        | 0.44 6000000000                   | P                                           |
| 28.       | <del>منعدا</del><br>ریز <sup>را</sup> لت م | / (M         | T) YELLOW         | SH RED SILT AND FINE                            |            |            |            | OVM SCREEN OF BDL                 |                                             |
| IG FORM   | 1636                                       | 1 34         | ND, WET A         | ERY STIFF                                       |            |            | <u> </u>   | _                                 | 5-5-8-8                                     |
|           |                                            |              | P450              | RAIC DIVED DAVIN DECT                           |            | -          |            | HOLE NO                           |                                             |

TIERRA-B-018251

|                                 |                                                              |               |                         |                   | Hole No                                         | wī-9                   |
|---------------------------------|--------------------------------------------------------------|---------------|-------------------------|-------------------|-------------------------------------------------|------------------------|
| DRILLING LOG                    | DMISION NEW YORK DISTRICT<br>PASSAIC RIVER DIV.              | INSTAL        |                         |                   |                                                 | SHEET 2<br>OF 2 SHEETS |
| PASSAIC RIVER                   | BANK RESTORATION, NEWARK                                     |               | E AND TYPE              |                   | 4" NOM WA                                       | NTER ROTARY            |
| 2 LOCATION (Coordinates or      |                                                              | 1             |                         |                   |                                                 |                        |
| 3. DRILLING AGENCY              | SITE PLAN                                                    | 12. MA        | NUFACTOREF              | I'S DESIGNA       | TION OF DRILL<br>B-61 (SKID RI                  | G ON BARGE)            |
| WARREN 4 HOLE NG (As shown on a | GEORGE. INC.                                                 | 13. TOT<br>BU | A. NO. OF<br>RDEN SAMPL | OVER-<br>ES TAKEN | DISTURSED<br>15                                 |                        |
| one file number)                | wi-9                                                         | 14. 101       | AL NUMBER               | CORE BOX          |                                                 |                        |
| J. GC                           | )RMAN                                                        | 15. ELE       | A/N NOITAV              | _                 |                                                 |                        |
| 6. DIRECTION OF HOLE            | CLINED DEC. FROM VERT.                                       | 16. DAT       | TE HOLE                 | 1                 | 1-24-95                                         | 1-25-95                |
| 7 THICKNESS OF OVERBURDE        | × >30 FT.                                                    |               | VATION TOP              |                   |                                                 |                        |
| 8. DEPTH DRILLED INTO ROCH      |                                                              |               | AL CORE RE              |                   |                                                 | <u> </u>               |
| 9. TOTAL DEPTH OF HOLE          | 30 FT.                                                       | 19. 56        | NATURE OF               |                   | UJIAN/M. TORSI                                  |                        |
| ELEVATION DEPTH LEGEND          | (Description)                                                |               | CORE                    | BOX OR<br>SAMPLE  | REMA<br>(Drilling time, wat<br>weathering, etc. |                        |
| c c c                           | I: (SEE ABOVE)                                               |               | OR W.C.                 | NO                | ç                                               | SPT BLOWS / E IN       |
|                                 |                                                              | AND           | -                       | S 15              |                                                 | 8-10-19-26             |
|                                 | NOTES                                                        |               | :                       | -                 | <br>                                            |                        |
|                                 | 1. BORING TERMINATED AT THE DI<br>OF 30.0 FEET BML ON 1-25-  |               |                         |                   |                                                 |                        |
| 32.0 <del></del>                | 2. SURFACE WATER THICKNESS VA<br>WITH TIDE BETWEEN 1.7 FT AN | RIED          |                         |                   |                                                 | •                      |
| -                               | 6.5 FT DURING DRILLING.                                      |               |                         |                   |                                                 |                        |
|                                 | 3. BORING TREMIE GROUTED WITH<br>CEMENT/BENTONITE GROUT.     |               | *<br>*                  | [                 |                                                 | E                      |
|                                 |                                                              |               |                         |                   |                                                 |                        |
|                                 |                                                              |               |                         |                   |                                                 | Ę.                     |
| 36.0                            |                                                              |               |                         |                   |                                                 | <u> </u>               |
|                                 |                                                              |               |                         |                   |                                                 | E I                    |
| -                               |                                                              |               | 1                       |                   |                                                 |                        |
|                                 |                                                              |               | 1                       |                   |                                                 |                        |
|                                 |                                                              |               |                         | ļ                 |                                                 | F                      |
| 40.0                            |                                                              |               |                         |                   |                                                 | <u> </u>               |
|                                 |                                                              |               |                         |                   |                                                 | -                      |
|                                 |                                                              |               |                         | 1                 |                                                 |                        |
|                                 |                                                              |               |                         | 1                 |                                                 |                        |
| · –                             |                                                              |               |                         |                   |                                                 |                        |
| i 44 0                          |                                                              |               |                         |                   |                                                 |                        |
| _                               |                                                              |               | i                       |                   |                                                 |                        |
|                                 |                                                              |               |                         |                   |                                                 |                        |
| ·                               |                                                              |               |                         |                   |                                                 |                        |
|                                 |                                                              |               |                         |                   |                                                 |                        |
|                                 | 1                                                            |               |                         |                   |                                                 | F                      |
| 145.0 <u></u>                   |                                                              |               |                         | -                 |                                                 |                        |
| -=                              | 1                                                            |               |                         |                   |                                                 | F.                     |
|                                 |                                                              |               |                         |                   |                                                 | ►-<br>►                |
|                                 |                                                              |               |                         |                   |                                                 |                        |
|                                 |                                                              | <i></i>       |                         |                   | -                                               | <b>-</b>               |
| 52.0                            |                                                              | -             | :                       |                   | -                                               |                        |
|                                 | 1                                                            |               |                         |                   |                                                 | F                      |
|                                 |                                                              |               |                         |                   |                                                 |                        |
|                                 | 1                                                            |               | : .                     |                   |                                                 |                        |
|                                 |                                                              |               | 1                       |                   |                                                 |                        |
|                                 |                                                              |               |                         | F<br>I<br>I       |                                                 | -                      |
| NO FORM 1836                    | IPROJEC:                                                     |               |                         |                   | HOLE NO                                         |                        |

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|           |                                               |                     |                                                                                                                                                                                                                                                                      |                 |                         |                                | Hole No.                                                        | VTH-9                  |           |
|-----------|-----------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------|--------------------------------|-----------------------------------------------------------------|------------------------|-----------|
| DRILL     | ING LO                                        | G   '               | PASSAIC RIVER DISTRICT                                                                                                                                                                                                                                               |                 |                         |                                |                                                                 | SHEET :<br>OF 1 SHEE   |           |
| 1. PROJE  | ASSAIC                                        | RIVER B             | ANK RESTORATION, NEWARK                                                                                                                                                                                                                                              |                 |                         |                                | NON WATER R                                                     |                        | RE        |
| 2. LOCATI | ON (Coord                                     | notes or St<br>SEE  | alion)<br>SITE PLAN                                                                                                                                                                                                                                                  | 12 MA           | NUFACTOREF              | S DESIGN                       | ATION OF DRILL                                                  |                        |           |
| 3. DRILL  | IG AGENCY                                     | RREN GE             | ORGE, INC.                                                                                                                                                                                                                                                           |                 |                         | MOBILE                         | B-61 (SKID RIG                                                  |                        |           |
|           |                                               | nown on cro         |                                                                                                                                                                                                                                                                      |                 | AL NO. OF<br>RDEN SAMPL |                                | DISTURSED                                                       | UNDISTURBED            |           |
|           | OF DRILLEF                                    |                     |                                                                                                                                                                                                                                                                      |                 | AL NUMBER               | ·                              | ×ES                                                             |                        |           |
|           | IDN OF HO                                     |                     |                                                                                                                                                                                                                                                                      |                 | VATION N/A              | ī                              |                                                                 |                        |           |
|           | ERTICAL                                       |                     | INED DEG. FROM VERT.                                                                                                                                                                                                                                                 | 16. DAT         |                         |                                | 1-19-95                                                         | 1-23-95                |           |
|           |                                               | VERBURDEN           | 18.5 FT.                                                                                                                                                                                                                                                             |                 | AL CORE RE              |                                | NE $-6.0$ FT±                                                   |                        |           |
|           | DEPTH OF                                      | <u> </u>            | 5.0 FT.<br>23.5 FT.                                                                                                                                                                                                                                                  |                 | ECTOR(S)                |                                | D. MAZUJIAN                                                     | i                      |           |
| ELEVATION |                                               | LEGEND              | CLASSIFICATION                                                                                                                                                                                                                                                       | <u>.</u>        | CORE                    | BOX OR                         | (Drilling time, water                                           |                        |           |
| 0         | D                                             | c                   | (Description)<br>d                                                                                                                                                                                                                                                   | -               | OR W.C.                 | NO                             | weathering, etc., S                                             |                        | HN:       |
|           |                                               |                     | (OH) BLACK ORGANIC CLAY, OCCA<br>LAYERS OF BROWN FINE SAND, 1,<br>4 INCH THICK, WET, VERY SOFT, 1<br>ODOR, STAINED BLACK                                                                                                                                             | /2 TO           |                         | S-1                            | OVM SCREEN (<br>BDL                                             | DF SS =<br>WOR/2       | FT        |
|           |                                               |                     |                                                                                                                                                                                                                                                                      |                 |                         | 5-2                            | OVM SCRREEN<br>1.7, 3.2, 2.2                                    |                        | F-        |
|           |                                               |                     |                                                                                                                                                                                                                                                                      |                 |                         | 5-3                            | OVM SCREEN 0<br>1.8. 2.7. 2.9.                                  |                        | 2         |
|           | ,<br> _ _ _ _                                 |                     | GRADING TO ORGANIC SILTY (<br>TRACE FINE SAND                                                                                                                                                                                                                        | CLAY            |                         | S-4                            | OVM SCREEN (<br>BDL                                             | )F SS =<br>1/1FT+1/1F  | T I       |
|           | 2.0 ביין<br>רויזירן -                         | ¢   ¢   !           |                                                                                                                                                                                                                                                                      | 5015            |                         | S-5                            | OVM SCREEN C<br>1.7. 1.2. 1.7.                                  |                        | 25        |
|           |                                               |                     | (SM) YELLOWISH RED COARSE TO<br>SAND, LITTLE MEDIUM FINE GRAVEL<br>LITTLE SILT, WET, MEDIUM DENSE,<br>PHC ODOR<br>GRADING WITH OCCASIONAL LEP                                                                                                                        | WEAK            |                         | 5-6                            | OVM SCREEN C<br>BDL                                             | F SS = 7 - 12 - 15 - 1 | 7         |
|           | 20                                            | 1 6 1 6 1           | OF SILTY CLAY                                                                                                                                                                                                                                                        |                 | -                       | S-7                            |                                                                 |                        |           |
|           |                                               |                     | GRADING TO VERY DENSE. WITH<br>PHC ODOR                                                                                                                                                                                                                              | тион            |                         |                                |                                                                 | 27-30-35-4             | 0         |
|           |                                               |                     | And ODOR                                                                                                                                                                                                                                                             |                 |                         | 8-2                            | -                                                               | <del> </del>           |           |
|           |                                               |                     |                                                                                                                                                                                                                                                                      |                 | -<br>-<br>-             |                                |                                                                 | 11-20-100,             | /6'       |
|           | 6.0                                           |                     |                                                                                                                                                                                                                                                                      |                 |                         | S-9                            |                                                                 |                        |           |
|           | -                                             | o  .e   <br>  e   e | GRADING WITH SOME MEDIUM F                                                                                                                                                                                                                                           | INE             |                         |                                |                                                                 | 11-5-100/3             | 5" ¦      |
|           |                                               | <u>•</u> ]•]        | GRAVEL                                                                                                                                                                                                                                                               |                 |                         | 5-10                           |                                                                 | 100/5                  | 5         |
| 2         | 0.0<br>11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1 |                     | REDDISH BROWN SHALE BEDROCK.<br>MODERATELY TO SLIGHTLY WEATHER<br>VERY STRONG, WIDELY FRACTURED,<br>VERY THICKLY BEDDED, DISTURBED<br>EEDDING TO DO DO TO THE THICKLY                                                                                                | ED.             | 86.7                    | R - 1                          | CORE RUN R-1<br>FROM 18.5 FT<br>REC=26", ZREC<br>>OR=4"=13", R  | TC 21 FT<br>=86.7      |           |
|           | וונלטו                                        |                     | BEDDING 19-20 FEET, FREDUENT<br>CALCITE FILLED 1/8-1/2 INCH VU<br>FREDUENT BLACK INTRUSIONS, FRO<br>18.7 TO 19.2 FEET                                                                                                                                                | GS.             | 50.0                    | R-2                            | CORE RUN E-2<br>FROM 21 FT TO<br>REC=15", %REC<br>>OR=4"=13", R | =50                    |           |
| . 2       |                                               | /                   | NOTES<br>1. BORING TERMINATED AT THE DEI<br>0F ABOUT 23.5 FT ON 1/23/9<br>2 SURFACE WATER THICKNESS VAR<br>WITH TIDE BETWEEN 4.8 FT ANI<br>7.55 FT DURING DRILLING.<br>3. BORING TREMIE GROUTED WITH<br>CEMENT/BENTONITE ON 1/23/9<br>4. ENVIRONMENTAL SAMPLES COLLE | 95.<br>RED<br>D | c) WTH                  | (CONTID)<br>-93. 6-<br>-93. 6- |                                                                 |                        |           |
| ENG FOI   | <u>e.c</u>                                    |                     | AS FOLLOWS<br>c) WTH-9A, 0-6', COMPOSTIE<br>b) WTH-9A, 5-6', DISCRETE<br>FROJECT                                                                                                                                                                                     |                 |                         |                                | HOLE NO                                                         |                        | <br> <br> |
|           | 100                                           | U I                 | PASSAIC RIVER BANK R                                                                                                                                                                                                                                                 | ESTOR           | ATION.                  | NEWARK                         |                                                                 | WT9                    |           |

|                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               |                                                                                                                                                                 |               |                             |                   | Hole No                          | WTH-94                                        |                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|-------------------|----------------------------------|-----------------------------------------------|------------------|
| DRILLING LOG                                                                                                                                                                                                                                                                                                                                                                                                                         | DIVISION N                                    | IEW YORK DISTRICT<br>ASSAIC RIVER DIV.                                                                                                                          | INSTA         | ALLATION                    |                   |                                  | SHEET :<br>OF 1 SHEET                         | ]                |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                    | R BANK RE                                     | STORATION, NEWARK                                                                                                                                               |               | ZE AND TYP                  | ,                 | 4 NOM W                          | ATER ROTARY                                   |                  |
| 2. LOCATION (Coordinates                                                                                                                                                                                                                                                                                                                                                                                                             | er Station)<br>EE SITE PL                     | AN!                                                                                                                                                             |               |                             |                   |                                  |                                               |                  |
| 3. DRILLING AGENCY                                                                                                                                                                                                                                                                                                                                                                                                                   | GEORGE.                                       |                                                                                                                                                                 |               |                             | MOBILE            | B-61 (SKID R                     | IG ON BARGE)                                  | 1                |
| 4. HOLE NO (As shown or                                                                                                                                                                                                                                                                                                                                                                                                              |                                               | r                                                                                                                                                               | 113. TO<br>BU | TAL NO. OF                  | OVER-<br>ES TAKEN | DISTURBED                        | UNDISTURSED                                   | Ī                |
| one file number)                                                                                                                                                                                                                                                                                                                                                                                                                     |                                               | WTH-9A                                                                                                                                                          | _14. TO       | TAL NUMBER                  | CORE BO           | <u> </u>                         | ī                                             | 1                |
| J. (                                                                                                                                                                                                                                                                                                                                                                                                                                 | GORMAN                                        |                                                                                                                                                                 | 15. ELE       | EVATION N/A                 |                   |                                  |                                               |                  |
| 6 DIRECTION OF HOLE                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               | DEG. FROM VERT.                                                                                                                                                 |               | TE HOLE                     |                   | 1-23-95                          | 1-23-95                                       |                  |
| 7 THICKNESS OF OVERBUR                                                                                                                                                                                                                                                                                                                                                                                                               | DEN                                           | >7.5 FT.                                                                                                                                                        | 17. ELE       | EVATION TOP                 | OF MUDLI          | NE -6.0 FT±                      |                                               |                  |
| 18 DEPTH DRILLED INTO RO                                                                                                                                                                                                                                                                                                                                                                                                             | CN                                            | 0.0 FT.                                                                                                                                                         |               | AL CORE RE                  | COVERY F          | OR BORING                        | N/A                                           |                  |
| 9. TOTAL DEPTH OF HOLE                                                                                                                                                                                                                                                                                                                                                                                                               |                                               | 7.5 FT.                                                                                                                                                         |               | PECTOR(S)                   | D. MAZL           | JIAN/M. TORSI                    |                                               |                  |
| ELEVATION DEPTH LEGE                                                                                                                                                                                                                                                                                                                                                                                                                 | )   כא                                        | SSIFICATION<br>Description)<br>d                                                                                                                                |               | CORE<br>RECOVERY<br>OR W.C. | BOX OR            | (Dritting time, wat              | ARKS<br>ler loss, depth of<br>if significant) |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | (Он) в<br>Soft. I                             | LACK ORGANIC CLAY, WET,<br>PHC ODOR, STAINED BLACK                                                                                                              | VERY<br>(     |                             | -                 |                                  | SPT BLOWS / E IN                              | -                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      | // FIN                                        | DING WITH LITTLE MEDIUM<br>RE GRAVEL, FREQUENT LEN<br>YELLOWISH RED CLAYEY                                                                                      | 1555          |                             | U-1               | OSTERBERG SAME<br>5.5-7.5 FT, 21 | PLE, 3" O.D. TUBE.                            | -<br>-<br>-<br>- |
| ε.0<br>12.0<br>16.0<br>11<br>20.0<br>11<br>11<br>22.0<br>11<br>11<br>12.0<br>11<br>11<br>12.0<br>11<br>11<br>12.0<br>11<br>11<br>12.0<br>11<br>11<br>12.0<br>11<br>11<br>11<br>12.0<br>11<br>11<br>12.0<br>11<br>11<br>11<br>12.0<br>11<br>11<br>11<br>12.0<br>11<br>11<br>11<br>12.0<br>11<br>11<br>11<br>12.0<br>11<br>11<br>11<br>12.0<br>11<br>11<br>11<br>11<br>12.0<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>11<br>1 | 2. SURF<br>2. SURF<br>APPI<br>DRIL<br>2. BORI | NG TERMINATED AT THE DI<br>ABOUT 7.5 FEET ON 1-23<br>ACE WATER THICKNESS<br>ROXIMATELY 8.3 FT. DURIN<br>LING.<br>NG TREMIE GROUTED WITH<br>ENT/BENTONITE GROUT. | -95.          |                             |                   |                                  |                                               |                  |
| NG FORM 1835                                                                                                                                                                                                                                                                                                                                                                                                                         | PROJECT                                       | ASSAIC RIVER BANK R.                                                                                                                                            | FSTOPA        |                             |                   | HOLE NO                          | WT 01                                         |                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                               | -JOANC RIVER DAINK M.                                                                                                                                           | LORA          | LIUN, NE                    | MARK              | I                                | WT-94                                         |                  |

11

|           |                      |             |                                                                    |           |                         |               | Hole No                                        | <u>W7-10</u>                             |
|-----------|----------------------|-------------|--------------------------------------------------------------------|-----------|-------------------------|---------------|------------------------------------------------|------------------------------------------|
| DRILL     | ING LO               | G           | DIMISION NEW YORK DISTRICT<br>PASSAIC RIVER DIV                    | INSTAL    | LATION                  |               |                                                | SHEET :<br>OF 2 SHEETS                   |
| 1. PROJEC |                      | RIVER B     | ANK RESTORATION, NEWARK                                            |           | AND TYPE                |               | 4" NOM WA                                      | TER ROTARY                               |
| 2. LOCATI | DN (Coordi           | nates or St |                                                                    |           |                         |               |                                                |                                          |
| 3 DRILLIN | G AGENCY             |             |                                                                    | _112. MAH |                         |               | TION OF DRILL<br>B-61 (SKID RIC                | G ON BARGE)                              |
| 4 HOLE    |                      | own on dra  | EORGE, INC.                                                        |           | AL NO. OF<br>RDEN SAMPL |               | DISTURBED<br>15                                | UNDISTURED<br>O                          |
| onc fe    | e number)            |             | · wi=i0                                                            | 14. 101.  | AL NUMBER               | CORE BOX      | ξS                                             |                                          |
|           |                      | J. GOR      | MAN                                                                | 15. ELE   | VATION N/A              |               |                                                |                                          |
| 1         | ION OF HO<br>ERTICAL |             | LINED DEG. FROM VERT.                                              | 16. DAT   | E HOLE                  |               | 17-95                                          | 1-18-95                                  |
| 7. THICKN | ESS OF ON            | ERBURDEN    | >31 FT.                                                            |           |                         |               | € -3.3 FT±                                     |                                          |
|           | DRILLED I            |             | 0.0 FT.                                                            |           | AL CORE RE              |               |                                                | N/A                                      |
|           | DEPTH OF             |             | 31 FT.                                                             | <u> </u>  | CORE                    | BOX OR        | ). MAZUJIAN                                    |                                          |
| ELEVATION | DSPIH<br>P           | LEGEND      | (Description)<br>d                                                 |           | RECOVERY<br>OR W.C.     | SAMPLE<br>NO. | (Drilling time, wate<br>weathering, etc.,<br>9 |                                          |
|           |                      |             | (OH) OLIVE GRAY ORGANIC CLAY,<br>VERY SOFT, FREQUENTLY STAINED     |           |                         | S-1           | OVM SCREEN                                     | OF SS =                                  |
|           |                      |             | BLACK, WEAK PHC ODOR                                               |           |                         |               | 1.1, 1.1 ppm                                   | WOR/2.5 FT                               |
|           |                      |             | GRADING TO SOFT WITH SOM                                           |           |                         |               | OVM SCREEN                                     |                                          |
|           |                      |             | ORGANICS AND DECOMPOSE<br>ORGANIC MATTER                           | D         |                         | S-2           | EDL                                            | 1/1 = -2-2                               |
|           | 4.0 <u> </u>         |             |                                                                    |           |                         |               | OVM SCREEN                                     |                                          |
|           |                      |             |                                                                    |           |                         | 5-3           | EDL                                            | WOH/2 FT                                 |
|           | <br>                 |             |                                                                    |           |                         | 5-4           | OVM SCREEN                                     | OF \$5 =                                 |
|           |                      |             |                                                                    |           |                         |               | BDL                                            | 1-1-1-1                                  |
|           | 8.0 <u>-</u>         |             |                                                                    |           |                         | 5-5           | OVM SCREEN                                     | OF SS =                                  |
|           |                      |             |                                                                    |           |                         |               | BDL                                            | 1-1-1-2                                  |
|           |                      |             | GRADING WITH LITTLE FINE SAI                                       | DИ        |                         | 5-6           | OVM SCREEN                                     | OF SS =                                  |
|           |                      |             |                                                                    |           |                         |               | 1.9. 2.7. 4.2                                  | ppm 1-1-1-1                              |
|           | 12.0 — (1<br>        |             | GRADING TO BLACK, WITH TRAC<br>FINE GRAVEL, STRONG, PHC            |           |                         | S-7           | OVM SCREEN                                     | OF SS =                                  |
| i i       |                      |             | STAINED BLACK                                                      |           |                         |               | 3.4, 5.0, 1.9.<br>w(                           | . 3.6 pom  <br>DR-WOH-1/1 FT             |
|           |                      |             |                                                                    |           |                         | S-8           | OVM SCREEN                                     |                                          |
|           |                      |             | GRADING WITH LITTLE YELLOWIS<br>COARSE TO FINE GRAVEL (SIL         |           |                         |               | 3.2. 12.7. 8.8                                 | 5. 4.6 ppm<br>WOH/2 FT                   |
|           | €.0 —                |             | STONE) AND OCCASIONAL<br>FRAGMENTS OF SHELLS TO VI<br>STIFF        | ERY       |                         | S-9           | OVM SCREEN                                     | i                                        |
|           |                      | 11/12       | ····                                                               |           |                         |               | 9.6.3.4 ppm                                    | 6-9-1-25                                 |
|           |                      | 111         | (GP) REDDISH BROWN-DARK GRAY<br>COARSE TO FINE GRAVEL (SILT STI    | ONE).     |                         | S 10          | OVM SCREEN                                     | OF SS =                                  |
|           | Ť.                   | 111         | SOME COARSE TO FINE SAND, LITT<br>SILT, WET, DENSE, FREQUENT BOU   | LDERS     |                         | 2.0           | BDL                                            | 19-20-21-34                              |
| 12        |                      | 111         | AND COBBLES                                                        |           |                         | S-11          |                                                |                                          |
|           |                      |             | (ML) YELLOWISH RED SILT, SOME                                      | FINE I    |                         | · ۱۱ پ        |                                                | 21-20-9-13                               |
|           |                      |             | SAND, WET, VERY STIFF                                              | -         | 4                       |               |                                                |                                          |
|           |                      |             | -                                                                  | -         |                         | 5-12          | -                                              | - 17-15-29-29-                           |
| 2         | 4.0 <del></del>      |             | SMI YELLOWISH RED FINE SAND.                                       | SOME      |                         |               |                                                |                                          |
|           |                      |             | SILT, WET, VERY DENSE                                              |           |                         |               |                                                | L. L. L. L. L. L. L. L. L. L. L. L. L. L |
|           | Ţ,                   | 6 6         |                                                                    |           |                         | 5-13          |                                                | 23-49-40-26                              |
| -         |                      | ¢ [ ¢       | (ML) YELLOWISH RED CLAYEY SILT.<br>FINE SAND WET, VERY STIFF, FREC | TRACE     |                         |               |                                                |                                          |
|           | <u>E.0</u> -         |             | CLAY LAMINAE                                                       |           |                         |               | HOLE NO                                        | !                                        |
| ENG FO    | RM 183               | ;c          | PASSAIC RIVER BANK P                                               | RESTOR    | ATION, I                | NEWARK        |                                                | WT-30                                    |

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| ч.<br>- Г.                                            |                                                                  |                                         |                               |                        | Hole No.                                                | WT-10                                 |  |  |  |
|-------------------------------------------------------|------------------------------------------------------------------|-----------------------------------------|-------------------------------|------------------------|---------------------------------------------------------|---------------------------------------|--|--|--|
| DRILLING LOG                                          | DMISION NEW YORK DISTRICT<br>PASSAIC RIVER DIV.                  | INSTAL                                  | ATION                         |                        |                                                         | SHEET 2<br>OF 2 SHEETS                |  |  |  |
| 1. PROJECT<br>PASSAIC RIVER                           | BANK RESTORATION, NEWARK                                         |                                         | AND TYPE                      |                        | 4" NOM WAT                                              | · · · · · · · · · · · · · · · · · · · |  |  |  |
| 2. LOCATION (Coordinates or SE                        | Station)<br>E SITE PLAN                                          | 12. MANUFACTORER'S DESIGNATION OF DRILL |                               |                        |                                                         |                                       |  |  |  |
| 3. DRILLING AGENCY                                    | GEORGE, INC.                                                     | MOBILE E-61 (SKID RIG ON BARGE)         |                               |                        |                                                         |                                       |  |  |  |
| 4 HOLE NO (As shown on and the number)                |                                                                  |                                         | U, NO. OF<br>DEN SAMPL        |                        | DISTURBED                                               |                                       |  |  |  |
| S NAME OF DRUIER                                      | ORMAN                                                            | Ì                                       | ATION N/A                     | CORE BOX               | 5                                                       |                                       |  |  |  |
| C. DIRECTION OF HOLE                                  |                                                                  | 16. DAT                                 |                               | <u> </u>               | 1-17-95                                                 | 1-18-95                               |  |  |  |
|                                                       | INCLINED DEC. FROM VERT.                                         | ļ                                       |                               |                        |                                                         |                                       |  |  |  |
| 7. THICKNESS OF OVERBURD<br>8. DEPTH DRILLED INTO ROC |                                                                  |                                         | L CORE RE                     |                        |                                                         | N/A                                   |  |  |  |
| 9. TOTAL DEPTH OF HOLE                                | 31 FT.                                                           | 19. SICN                                | ATURE OF                      | INSPECTOR(             | s)<br>D. mazujian                                       |                                       |  |  |  |
| ELEVATION DEPTH LEGEN                                 | D CLASSIFICATION<br>(Description)<br>d                           |                                         | Z CORE<br>RECOVERY<br>OR W.C. | BOX OR<br>SAMPLE<br>NO | REMAN<br>(Drilling time, wate<br>weathering, etc.,<br>G | r loss, depth of                      |  |  |  |
|                                                       |                                                                  | -                                       |                               | S-14                   | OVM SCREEN (                                            |                                       |  |  |  |
|                                                       | GRADING WITH LAMINATED CLA<br>OCCASIONAL FRAGMENTS OF<br>TO HARD |                                         |                               | -                      | OVM SCREEN C                                            | Γ                                     |  |  |  |
|                                                       |                                                                  |                                         |                               | S-15                   | BDL                                                     |                                       |  |  |  |
| 32.0                                                  | NOTES                                                            |                                         |                               |                        |                                                         | Ē                                     |  |  |  |
|                                                       | OF 31 FEET BML ON 1-18-9<br>2. SURFACE WATER THICKNESS VA        | RIED                                    |                               |                        |                                                         |                                       |  |  |  |
| 36.0<br>40.0                                          | WITH TIDE BETWEEN 2.5 FT AN<br>8.8 FT DURING DRILLING.           | 0                                       |                               |                        |                                                         |                                       |  |  |  |
|                                                       | 3. BORING TREMIE GROUTED WITH<br>CEMENT/BENTONITE GROUT.         |                                         |                               |                        |                                                         | -                                     |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | -                                     |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | -                                     |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | <u> </u>                              |  |  |  |
| 44.0 <del></del>                                      |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | -                                     |  |  |  |
| 48.0                                                  |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | <u>-</u>                              |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | ,                                     |  |  |  |
| 52.0                                                  | -                                                                | -                                       |                               |                        | -ر                                                      |                                       |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | E E                                   |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | Ē                                     |  |  |  |
|                                                       |                                                                  |                                         |                               |                        |                                                         | <u>F</u>                              |  |  |  |
| 56.0                                                  |                                                                  |                                         |                               |                        |                                                         |                                       |  |  |  |
| NG FORM 1836                                          | PROJECT PASSAIC RIVER BANK P                                     | ESTOR                                   | ATION, 1                      | NEWARK                 | HOLE NO                                                 | WT-10                                 |  |  |  |

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|           |                          |            | ·····                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                 |                             |                        | Hole No. W                                                                 | (i – 10A       |          |
|-----------|--------------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------|------------------------|----------------------------------------------------------------------------|----------------|----------|
| DRIL      | LING LOO                 | ;          | DMSION NEW YORK DISTRICT<br>PASSAIC RIVER DIV.                                                                                                                                                                                                                                                                                                                                                                         | INSTAL                                          | LATION                      |                        |                                                                            | SHEET SHEET    |          |
| 1 PROJ    |                          |            |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                 | AND TYPE                    |                        |                                                                            | ER ROTARY      |          |
| 1         | ASSAIC                   |            | ANK RESTORATION, NEWARK                                                                                                                                                                                                                                                                                                                                                                                                | 11, DAT                                         | UM FOR EL                   | EVATION :              | SHOWN (TBM.MSL. OR NO                                                      | 5VD)           |          |
|           |                          |            | SITE PLAN                                                                                                                                                                                                                                                                                                                                                                                                              | 12. MAR                                         |                             |                        | E-51 (SKID RIG                                                             | ON BARCE)      |          |
| 3. DRILLI | ING AGENCY               | RREN G     | EORGE, INC.                                                                                                                                                                                                                                                                                                                                                                                                            |                                                 | AL NO. DE                   | OVER-                  | DISTURBED                                                                  | UNDISTURGED    |          |
|           | NÖ (As shi<br>He number) | own on gri | WI-10A                                                                                                                                                                                                                                                                                                                                                                                                                 | ļ                                               | AL NUMBER                   |                        | <u> </u>                                                                   | 2              |          |
| S. NAME   | OF DRILLER               | J. GOR     | {man                                                                                                                                                                                                                                                                                                                                                                                                                   | <b></b>                                         | VATION N/A                  |                        |                                                                            |                | _        |
| 6. DIREC  | TION OF HO               | LĹ         | ······                                                                                                                                                                                                                                                                                                                                                                                                                 | 16. DAT                                         | Е. HOIF                     |                        | 1-18-95                                                                    | 1-18-25        |          |
|           | VERTICAL                 |            | LINED DEC. FROM VERT.                                                                                                                                                                                                                                                                                                                                                                                                  |                                                 |                             | OF MUDI                | INE -2.5 FT±                                                               |                | <b>-</b> |
|           | NESS OF OV               |            | <u>&gt;14 FT.</u><br>0.0 FT.                                                                                                                                                                                                                                                                                                                                                                                           | L                                               |                             |                        | FOR BORING                                                                 | N/A            |          |
|           | DEPTH OF                 |            | 14 FT.                                                                                                                                                                                                                                                                                                                                                                                                                 | 19. INSF                                        | ECTOR(S)                    |                        | D. MAZUJIAN                                                                |                |          |
| ELEVATION | DEPTH<br>Б               |            | CLASSIFICATION<br>(Description)<br>d                                                                                                                                                                                                                                                                                                                                                                                   |                                                 | CORE<br>RECOVERY<br>OR W.C. | BOX OR<br>SAMPLE<br>NO |                                                                            | loss, cepth of |          |
|           |                          |            | WET, VERY SOFT, FREQUENTLY STA<br>BLACK, STRONG PHC ODOR<br>GRADING WITH SOME ORGANICS<br>DECOMPOSED ORGANIC MATTE<br>TRACE FRAGMENTS OF SLAG.<br>STAINED BLACK<br>PP=0.1<br>TOR=0.1<br>PP==C.26<br>TOR=0.<br>NOTES<br>1. BORING TERMINATED AT THE DE<br>OF ABOUT 14 FEET ON 1-18-<br>2 SURFACE WATER THICKNESS<br>APPROXIMATELY 7.5 FT DURING<br>DRILLING<br>3. BORING TREMIE GROUTED WITH<br>CEMENT/BENTONITE GROUT. | 6 TSF<br>3 TSF<br>6 TSF<br>4 TSF<br>9TH<br>-95. |                             | U-1<br>U-2             | OSTERBERG SAMPL<br>10-12 FT, 24" RE<br>OSTERBERG SAMPL<br>12-14 FT, 24" RE | ECOVERY        |          |
| ENG FO    | 28.0                     | <u> </u>   | PROJECT                                                                                                                                                                                                                                                                                                                                                                                                                |                                                 |                             |                        | HOLE NO.                                                                   |                |          |
| ·         |                          | U I        | PASSAIC RIVER BANK R                                                                                                                                                                                                                                                                                                                                                                                                   | ESTOR                                           | ATION, N                    | NEWARK                 |                                                                            | W7-10A         |          |

| DRILLING                    | G LOO          | ;                                       | DIVISION N | EW YORK DISTRICT<br>ASSAIC RIVER DIV.            | INSTA            | LATION                   | ·                 |                            | SHEET )<br>OF 2 SHE                   | ETS    |
|-----------------------------|----------------|-----------------------------------------|------------|--------------------------------------------------|------------------|--------------------------|-------------------|----------------------------|---------------------------------------|--------|
| 1. PROJECT                  |                |                                         |            |                                                  | 10. SU           | E AND TYPE               | OF BIT            | 4 NOM WATER                |                                       |        |
| 2. LOCATION                 |                |                                         |            | STORATION, NEWARK                                | - 11, <b>D</b> A | TUM FOR EL               | EVATION S         | SHOWN (TBM.MSL. OR         | NGVD)                                 |        |
| 2. LUCATION                 | (000104        |                                         | SITE PL    | AN                                               | 12. 1            | NUFACTORER               | S DESIGN          | ATION OF DRILL             |                                       |        |
| 3. DRILLING                 | GENCY          | RREN G                                  | EORGE.     | INC.                                             |                  |                          |                   | B-61 (SKID R               |                                       |        |
| 4. HOLE NO.                 | (As shi        |                                         |            | WT-10 (WHT-10                                    |                  | TAL NO. OF<br>RDEN SAMPL |                   | DISTURBED<br>9             | UNDISTURBE                            |        |
| 5. NAME OF                  |                |                                         | ··         |                                                  | 14. 70           | AL NUMBER                | CORE BO           | )XES <1                    |                                       |        |
| S. ROAL OF                  |                | J. GOF                                  | MAN        |                                                  | 15. EL           | VATION N/A               |                   |                            |                                       |        |
| 6. DIRECTION                |                |                                         |            | DEG. FROM VER                                    | 16. DA           | LE HOFE                  |                   | 1-23-95                    | 1-24-95                               |        |
|                             |                | . <u>.</u>                              |            | DEG. PROM VER                                    |                  | VATION TOP               | OF MUDL           | NE -9.0 FT±                |                                       |        |
| 7. THICKNESS<br>8. DEPTH DR |                |                                         |            | <u>14.0 FT.</u><br>12.25 FT.                     | - 18. TO         | AL CORE RE               | COVERY P          | FOR BORING                 | 43 IN.                                |        |
| S. TOTAL DEP                | · · · -        | · · · · · ·                             |            | 26.25 FT.                                        |                  | PECTOR(S)                | D. MAZ            | UJIAN/M. TORSI             | ELLO                                  |        |
|                             | ЕРТН           | LEGEND                                  |            | ASSIFICATION                                     | !                | CORE                     | BOX OR            | REN                        | WRKS<br>ner loss, depth of            |        |
| 0                           | Þ              | 6                                       |            | (Description)<br>d                               | •                | RECOVERY<br>OR W.C.      | SAMPLE<br>NO.     |                            | L, if significant)                    |        |
|                             | _              | 1.1.1.1.                                |            | ARK OLIVE GRAY ORGANIC                           |                  |                          | S-1               | NO RECOVER                 | · · · · · · · · · · · · · · · · · · · | -      |
|                             | ᅴ              |                                         |            | ERY SOFT, FREQUENTLY S<br>STRONG PHC ODOR        | MAINED           |                          |                   |                            | WOR/2                                 | FT F   |
|                             |                |                                         |            | -                                                |                  |                          |                   |                            |                                       |        |
|                             |                |                                         |            |                                                  |                  |                          | S-2               | BDL, 1.2, 0.               |                                       | E      |
| 4                           |                |                                         |            |                                                  |                  |                          |                   |                            | WOR/2                                 | FT     |
|                             | ۲<br>۲         | [:/:/:/:/:/:/:/:/:/:/:/:/:/:/:/:/:/:/:/ |            |                                                  |                  |                          | \$-3              | OVM SCREEN                 |                                       |        |
|                             | +              |                                         |            |                                                  |                  |                          |                   | BDL. 0.8, 1.               | 2 ppm<br>WOR/2                        | ET -   |
|                             |                |                                         |            | ADING WITH TRACE DECON<br>DRGANIC MATTER         | POSED            |                          | S4                | OVM SCREEN                 |                                       |        |
|                             |                |                                         | · · ·      |                                                  |                  |                          | 3-4               | 1.6, 3.6, 6.1              | l ppm                                 | F      |
| 8.0                         |                |                                         |            |                                                  |                  |                          |                   | _                          | WOR/2 F                               |        |
|                             |                |                                         |            |                                                  |                  |                          | S-5               | OVM SCREEN<br>2.8, 2.8, 38 |                                       | F      |
|                             |                |                                         |            |                                                  |                  |                          |                   | 2.0, 2.0, 30               | WOR/18"-WO                            | ы⊢     |
|                             | $\overline{=}$ |                                         |            |                                                  |                  |                          | S-6               | OVM SCREEN                 | OF SS =                               | -      |
|                             | Ĥ              |                                         |            |                                                  |                  |                          |                   | 0.8, 18.8, 1               | 0.4 ppm                               | Ē      |
| 12.                         |                | <u>/:/:/:)</u><br>? @ Ø                 | (SC) YE    | LLOWISH RED SILTY CLAY                           |                  |                          | S-7               |                            | WOR/2                                 |        |
|                             | /              | 6,8,8                                   | COARSE     | TO FINE SAND, LITTLE F<br>WET, VERY DENSE, OCC.  | INE              |                          | 2-1               | OVM SCREEN                 |                                       |        |
|                             |                | <u></u>                                 | BOULDE     | RS (SHALE)                                       |                  |                          |                   |                            | 17-35 <u>-100/</u>                    |        |
|                             | Ę              |                                         | SHALE E    | SH RED-REDDISH BROWN<br>BEDROCK, COMPLETELY      | 1                |                          | R                 |                            | FT TO 16.25 F                         | тÈ     |
|                             | ⊒              |                                         | MODERA     | RED TO RESIDUAL SOIL.<br>TELY WEAK TO WEAK TO    |                  |                          | · [1              | REC=0, 7RE                 |                                       |        |
| 16.0                        | 그              |                                         | MODERAT    | TELY STRONG                                      |                  | <b> </b>                 |                   |                            |                                       |        |
|                             | Ľ.             | •                                       |            |                                                  |                  |                          | <u>S-8</u><br>S-9 |                            | OF SS $= 100$                         |        |
|                             | -              | $\leq$                                  |            |                                                  |                  |                          |                   | OVM SCREEN<br>BDL (S-9)    | OF SS = 100,                          | />     |
|                             | Ŧ              |                                         |            |                                                  |                  |                          | ľ                 |                            | -2.                                   | F      |
|                             |                |                                         |            |                                                  |                  |                          |                   | CORE RUN R-                | TTO 23 FT                             | F      |
| 20.0                        | , <u> </u>     |                                         |            |                                                  |                  | I                        | 꼬                 | REC=9. %REC<br>>OR=4"=0. R | 20D=0                                 | -      |
| ļ                           | Ξ              |                                         |            |                                                  |                  |                          | N                 |                            |                                       | E      |
|                             | $\exists$      |                                         |            | NG TO REDDISH BROWN,                             |                  |                          |                   |                            |                                       | Ē      |
|                             |                |                                         |            | ERATELY WEATHERED, STI<br>KLY BEDDED, WIDELY FRA |                  |                          |                   |                            |                                       | F      |
| 24.0                        |                |                                         | - AND      | JOINTED WITH COMPLETE                            | LY -             |                          |                   | CORE RUN R-                | -3:                                   | E_     |
| 27.0                        |                |                                         | VUGS       | 5 1/8-1 INCH. FREQUEN                            | п                |                          | R - J             | FROM 23 FT<br>REC=34 7R    | 10 26.25 FT<br>EC=87                  | F      |
|                             |                |                                         | MOTI       | CK INSTRUSTIONS AND GE                           | DENT             |                          | <u>ک</u>          | >OR=4"=10".                | ROD=26                                | F      |
| -                           | 1              | <u> </u><br>                            | NOTES C    | ONT'D ON NEXT PAGE.                              |                  | ł                        |                   | ļ                          |                                       |        |
|                             |                |                                         |            |                                                  |                  |                          |                   |                            |                                       | ⊨<br>⊢ |
| 28.0                        |                |                                         | PROJEC     |                                                  |                  |                          |                   | HOLE NO.                   |                                       |        |
| ING FORM                    | 183            | 0                                       |            | PASSAIC RIVER BANK                               | RESTOR           | RATION, 1                | NEWARK            |                            | WTH-10                                |        |

TIERRA-B-018258

| [                 |                           |           | Descion            |                                                |         |                               |                         | Hole No.                                          | WTH-10          |
|-------------------|---------------------------|-----------|--------------------|------------------------------------------------|---------|-------------------------------|-------------------------|---------------------------------------------------|-----------------|
|                   | LING LC                   | G         |                    | NEW YORK DISTRICT<br>PASSAIC RIVER DIV.        | INSTA   | LLATION                       |                         |                                                   | OF 2 SHEETS     |
| 1. PROJE          |                           | RIVER     | BANK RE            | STORATION, NEWARK                              | 10. SI  | E AND TYP                     | E OF BIT 4              | NOM WATER                                         | ROTARY NX COR   |
|                   | ION (Coord                | ingtes or | Station)           |                                                |         | IUM FOR E                     | LEVATION S              | HOWN (TBM.MSL. OR                                 | NCVD)           |
| 3 DBILL           | NG AGENCY                 |           | SITE PL            | AN                                             | 12. MA  | NUFACTORE                     | R'S DESIGN              | ATION OF DRILL                                    |                 |
| l                 | WA                        | ARREN (   | GEORGE.            | INC.                                           | 13 10   | AL NO. OF                     |                         | B-61 (SKID RI                                     |                 |
| 4. HOLE<br>and fi | NC. (As sr<br>ile number) | hown on d | rowing title       | WTH-10                                         | BU      | RDEN SAMP                     | LES TAKEN               | DISTURBED<br>9                                    | UNDISTURBED     |
| S. NAME           | OF DRILLE                 | R J. GO   |                    |                                                |         | AL NUMBER                     |                         | xes                                               |                 |
| 6. DIRECT         | TION OF H                 |           |                    |                                                | 15. ELS | VATION N/A                    | ·                       |                                                   |                 |
|                   | ERTICAL                   |           | בנואים             | DEG. FROM VERT.                                | 16. DAT | e hole                        |                         | 1-23-95                                           | 1-24-95         |
| 7. THICKN         | ESS OF D                  | VERBURDEN |                    | >14.0 FT.                                      | 17. ELE | VATION TOP                    | OF MUDLE                | NE -9.0 FT±                                       |                 |
|                   | DRILLED II                |           |                    | 12.25 FT.                                      |         | CORE RE                       |                         |                                                   |                 |
| 9. TOTAL          | DEPTH OF                  | HOLE      |                    | 26.25 FT.                                      | 19. 500 | ATURE OF                      | D. MAZ                  | UJIAN/M_TORSI                                     |                 |
|                   | DEPTH<br>•                | LEGEND    | 1                  | SSIFICATION<br>Description)<br>d               |         | Z CORE<br>RECOVERY<br>OR W.C. | BOX OR<br>SAMPLE<br>NO. | REMA<br>(Drilling time, wate<br>weathering, etc., | t loss death of |
|                   |                           |           |                    |                                                |         | e                             | i                       | 9                                                 | SPT BLOWS/6 IN  |
|                   |                           |           | NOTES:<br>1. BORIN | G TERMINATED AT THE DEP                        | PTH OF  |                               |                         |                                                   |                 |
|                   |                           |           | ABOU               | T 26.25 FEET BML ON 1-                         | 24-95   |                               |                         |                                                   |                 |
|                   | 1                         |           | { wпн              | TIDE BETWEEN 9.3 FT AND                        | )       |                               |                         |                                                   | -               |
|                   |                           |           | 3. BORIN           | FT DURING DRILLING.<br>G TREMIE GROUTED WITH   |         |                               |                         |                                                   |                 |
|                   | 32.0 - 구                  |           | CEME               | NT/BENTONITE GROUT.                            |         |                               |                         |                                                   |                 |
|                   | コ                         |           | A. ENVIRU          | DNMENTAL SAMPLES COLLE                         | CTED    |                               |                         |                                                   |                 |
|                   |                           |           | 'o)₩7              | H- 10A, 0-6', COMPOSITE                        |         |                               |                         |                                                   |                 |
|                   |                           |           | c) W1              | H-10A, 3-4' DISCRETE<br>H-10E, 6-12', COMPOSIT | -       |                               |                         |                                                   | l<br>l          |
| ŀ                 | 7                         |           | c) w7              | H-108. 9-10'. DISCRETE                         | -       |                               |                         |                                                   |                 |
|                   | 56.0                      |           |                    |                                                |         |                               |                         |                                                   |                 |
|                   | 56.0                      |           |                    |                                                |         |                               |                         |                                                   | +               |
|                   |                           |           |                    |                                                |         |                               |                         |                                                   | Ĺ               |
|                   |                           |           |                    |                                                |         |                               |                         |                                                   |                 |
|                   |                           |           |                    |                                                |         |                               |                         |                                                   |                 |
|                   |                           |           |                    |                                                | 1       |                               |                         |                                                   | F               |
| 4                 | 0.0                       |           |                    |                                                |         |                               |                         |                                                   | F               |
|                   |                           |           |                    | _                                              |         |                               |                         |                                                   | . <b>F</b>      |
|                   |                           | Í         |                    |                                                |         |                               |                         |                                                   | L L             |
|                   |                           |           |                    |                                                |         |                               |                         |                                                   | ŀ               |
| 1                 |                           |           |                    |                                                |         |                               |                         |                                                   | F               |
|                   | _ <del>_</del>            |           |                    |                                                |         |                               |                         |                                                   | F               |
| 144               | 0                         | 1         |                    |                                                |         |                               | j                       |                                                   |                 |
| 1                 |                           | ĺ         |                    |                                                |         |                               |                         |                                                   |                 |
|                   |                           | -         |                    |                                                |         |                               | [                       |                                                   | <u> </u>        |
|                   |                           |           |                    |                                                |         |                               |                         |                                                   | -               |
|                   | コ                         |           |                    |                                                |         |                               | 1                       |                                                   |                 |
| 48                | .0                        | 1         |                    |                                                |         |                               |                         |                                                   |                 |
|                   | .0                        |           |                    |                                                |         |                               |                         |                                                   |                 |
| Í                 |                           |           |                    |                                                |         |                               |                         |                                                   | -               |
| ł                 |                           |           |                    |                                                |         |                               |                         |                                                   | +               |
|                   |                           | 1         |                    |                                                |         |                               | ļ                       |                                                   | F               |
|                   |                           |           |                    |                                                | -       |                               |                         | ~                                                 | F               |
| 52                | 0                         | {         |                    |                                                |         |                               |                         | -                                                 |                 |
|                   |                           | ł         |                    |                                                |         |                               |                         |                                                   | -               |
| ļ                 |                           | 1         |                    |                                                |         | 1                             |                         |                                                   | Ę.              |
|                   |                           |           |                    |                                                | ļ       | İ                             |                         |                                                   | Ē               |
|                   |                           | 1         |                    |                                                | 1       | 1                             |                         |                                                   | L               |
|                   |                           |           |                    |                                                |         |                               | 1                       |                                                   | •               |
| 55<br>NG FORN     |                           |           |                    |                                                |         |                               |                         |                                                   | · · · ·         |

|                              | · · · · · · · · · · · · · · · · · · ·                   |         |            |                  |                               |                                                                                                                 |            |
|------------------------------|---------------------------------------------------------|---------|------------|------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------|------------|
|                              | DIMISION NEW YORK DISTRICT                              | INSTAL  |            |                  | Hole No W                     |                                                                                                                 |            |
| DRILLING LOG                 | PASSAIC RIVER DIV.                                      |         |            |                  | ·                             | OF 1 SHEET                                                                                                      |            |
| PROJECT<br>PASSAIC RIVER BA  | ANK RESTORATION, NEWARK                                 |         | E AND TYPE |                  | 4" NOM WAT                    | the second second second second second second second second second second second second second second second se | _          |
| LOCATION (Coordinates or Sto |                                                         |         |            | EVALUA 3         | NOWN (IDM,MSL DK N            | GVD)                                                                                                            |            |
| SEE S                        | SITE PLAN                                               | 112. MA |            |                  | ATION OF DRILL                |                                                                                                                 |            |
| DRILLING AGENCY WARREN GE    | EORGE, INC.                                             | 11 101  | AL NO. OF  |                  | B-61 (SKID RIG                |                                                                                                                 |            |
| HOLE NO (As shown on oron    | ······································                  |         | RDEN SAMPL | ES TAKEN         | DISTURBED                     | UNDISTURBED                                                                                                     | ]          |
| onc (ile number)             | -                                                       | 14. 101 | AL NUMBER  | CORE BO          | XES                           |                                                                                                                 |            |
| NAME OF DRULEP J. STEVE      | NSON                                                    | 15. ELE | VATION N/A |                  |                               |                                                                                                                 |            |
| DIRECTION OF HOLE            |                                                         | 16. DAT | E HOLE     |                  | 1-27-95                       | 1-27-95                                                                                                         |            |
| VERTICAL INCL                | LINED DEG. FROM VERT.                                   | ·       |            | I. ·             |                               |                                                                                                                 |            |
| THICKNESS OF OVERBURDEN      | >10 FT.                                                 | ļ       |            |                  | INE -8.8 FT=                  |                                                                                                                 | <u> </u>   |
| DEPTH DRILLED INTO ROCK      | 0.0 FT.                                                 |         | AL CORE RE |                  |                               | N/A                                                                                                             |            |
| TOTAL DEPTH OF HOLE          | <u>10 FT.</u>                                           |         |            |                  | UJIAN/M. TORSIE               |                                                                                                                 |            |
| VATION DEPTH LEGEND          | CLASSIFICATION .<br>(Description)                       |         | RECOVERY   | BOX OR<br>SAMPLE | RÉMAR<br>(Drilling time, wate | r loss, depth of                                                                                                |            |
| 0 E C                        | d                                                       |         | OR W.C.    | NO               | weathering, etc.,<br>S        | IT significant)<br>SPT BLOWS/6                                                                                  | IN         |
| —                            | (OH) DARK OLIVE GRAY ORGANIC                            |         | 1          | 1                |                               |                                                                                                                 | -          |
|                              | WET, VERY SOFT, FREQUENTLY S'<br>BLACK, STRONG PHC ODOR | TAINED  |            |                  |                               |                                                                                                                 |            |
|                              | BERER: SINGING THE ODDR                                 |         |            |                  |                               |                                                                                                                 | <u> </u>   |
| -                            |                                                         |         |            |                  |                               |                                                                                                                 |            |
| $= \lambda$                  |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 | <u> </u>   |
|                              |                                                         |         | 1          |                  |                               |                                                                                                                 | F I        |
| <u> </u>                     |                                                         |         |            |                  |                               |                                                                                                                 | _ <u> </u> |
| -3412                        | GRADING WITH FREQUENT POO<br>OF OLIVE GRAY COARSE TO    |         | · ·        | U-1              | OSTERBERG SAMP                |                                                                                                                 | ··         |
|                              | SAND, FREQUENT FRAGMENT                                 |         |            |                  | 10-0 FI. 21 REC               | UVERT                                                                                                           |            |
|                              | SHELL                                                   |         |            |                  |                               |                                                                                                                 | +          |
| 8.0                          |                                                         |         |            |                  | OSTERBERG SAMP                |                                                                                                                 | ·          |
|                              | GRADING WITH SOME COARSE                                | то      |            | U-2              | 8-10 FT. 20" RE               | COVERY                                                                                                          | -          |
|                              | FINE GRAVEL                                             |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         | i          |                  |                               |                                                                                                                 |            |
| ·                            | NOTES:<br>3. BORING TERMINATED AT THE D                 | FETH    |            |                  |                               |                                                                                                                 | F I        |
|                              | OF ABOUT 10 FEET ON 1-27                                |         |            |                  |                               |                                                                                                                 |            |
| 112.0                        | 2. SURFACE WATER THICKNESS                              |         |            |                  |                               |                                                                                                                 | <u> </u>   |
|                              | APPROXIMATELY 7.5 FT DURIN<br>DRILLING.                 | 1G      |            |                  |                               |                                                                                                                 |            |
| -                            | 2. BORING TREMIE GROUTED WITH                           | -       |            |                  |                               |                                                                                                                 | - I        |
|                              | CEMENT/BENTONITE GROUT.                                 |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 | -          |
|                              |                                                         |         |            |                  |                               |                                                                                                                 | F          |
|                              |                                                         |         |            |                  | ĺ                             |                                                                                                                 |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         | ļ          |                  |                               |                                                                                                                 |            |
| · - · · · ·                  | · ·                                                     |         |            |                  |                               |                                                                                                                 | ⊢          |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 | ┝-         |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
| 20.0                         |                                                         |         |            |                  |                               |                                                                                                                 | <u>├</u>   |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         | ļ          |                  |                               |                                                                                                                 | -          |
|                              |                                                         |         |            |                  |                               |                                                                                                                 | F          |
|                              |                                                         |         |            |                  | 1                             |                                                                                                                 | ⊢          |
|                              |                                                         |         |            |                  | 1                             |                                                                                                                 | F I        |
| 2=0                          | ÷                                                       | -       |            |                  | -                             |                                                                                                                 |            |
| 20.0                         |                                                         |         |            |                  | 1                             |                                                                                                                 | -          |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 | $\vdash$   |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |
|                              |                                                         |         |            |                  | ł                             |                                                                                                                 | - i        |
| 25.0 -                       |                                                         |         |            |                  |                               |                                                                                                                 | F          |
| FORM 1836                    | PROJECT                                                 |         | !l         |                  | HOLE NO.                      |                                                                                                                 | <u> </u>   |
| FURM LEDE                    | PASSAIC RIVER BANK                                      | RESTOR  | RATION, I  | NEWARK           |                               | WTH-104                                                                                                         |            |
|                              |                                                         |         |            |                  |                               |                                                                                                                 |            |

|             |                      |             |                                                                                                 |         |                               |          | Hole No                       | WT—11                                 |
|-------------|----------------------|-------------|-------------------------------------------------------------------------------------------------|---------|-------------------------------|----------|-------------------------------|---------------------------------------|
|             | IG LO                | G           | DATSION NEW YORK DISTRICT<br>PASSAIC RIVER DIV                                                  | INSTAL  | LATION                        |          |                               | SHEET :<br>OF 1 SHEET 1               |
| 1. PROJECT  | SAIC                 | RIVER E     | ANK RESTORATION, NEWARK                                                                         | L       | E AND TYPE                    |          | 5" NOM                        |                                       |
| 2. LOCATION | (Coord)              |             | tation)<br>SITE PLAN                                                                            |         |                               | S DESIGN | ATION OF DRILL                |                                       |
| 3. DRILLING |                      |             | EORGE, INC.                                                                                     |         | k                             | NOBILE   | B-61 (SKID RIG                |                                       |
| 4. HOLE NO  | (As sh               | awn on dro  |                                                                                                 | BUI     | AL NO. OF                     | ES TAKEN | · · ·                         | UNDISTURGED<br>O                      |
| 5. NAME OF  |                      |             |                                                                                                 | Ì       | AL NUMBER                     |          | IXES                          |                                       |
| 6 DIRECTIO  | N OF HO              | LE          |                                                                                                 | 1       | E HOLE                        |          | 1-13-95                       | 1-16-95                               |
|             |                      |             | LINED DEG. FROM VERT.                                                                           | L       |                               | OF MUDL  | INE -4.1 FT±                  |                                       |
| THICKNES    |                      | -           | >10.9 FT.<br>0.0 FT.                                                                            | 18. TOT | AL CORE RE                    | COVERY P | OR BORING                     | N/A                                   |
| 9. TOTAL DE |                      |             | 10.9 FT                                                                                         | 19. INS | PECTOR(S)                     |          | D. MAZUJIAN                   |                                       |
| ELEVATION   |                      | LEGEND<br>c | CLASSIFICATION<br>(Bescription)<br>d                                                            |         | I CORE<br>RECOVERY<br>DR W.C. |          |                               | r loss, depth of                      |
|             |                      |             | (OH) OLIVE GRAY-ELACK ORGANIC<br>TRACE FINE GRAVEL, WET, SOFT, S<br>ELACK STRONG PHC ODOR       |         |                               | S- 1     | OVM SCREEN                    |                                       |
|             |                      |             | GRADING WITH BROWN LAMINAS                                                                      |         |                               | 5-2      | OVM SCREEN                    |                                       |
|             |                      |             | (SP) BLACK MEDIUM TO FINE SAN                                                                   | 2.      |                               |          | BDL                           | 1/18-2                                |
|             |                      | · · · ·     | TRACE SILT, WET, LOOSE, STAINED<br>BLACK, STRONG PHC ODOR, SHEE<br>ON SAMPLE                    |         |                               | 5-3      | OVM SCREEN (<br>6.0, 12.0 ppm | Γ                                     |
|             |                      |             | GRADING TO VERY DENSE WITH<br>COARSE TO FINE SAND, LITTL<br>GRAVEL, OCCASIONAL FRAGME           | E FINE  |                               | S-4      | OVM SCREEN (<br>27.7, 31.0, 3 |                                       |
| 1           | <u>ت</u><br>٥.       | $\geq$      | OF WOOD, FREQUENT FRAGME<br>OF COAL                                                             |         | <br>                          |          | 27.7. 51.0, 5                 | 12-25-100/6"                          |
|             |                      |             | GRADING TO LOOSE<br>SILT, WITH TRACE ORGANICS                                                   |         |                               | S-5      |                               | 1-2-7-39                              |
|             |                      |             | GRADING WITH OCCASIONAL<br>FRAGMENTS OF CINDERS TO Y<br>DENSE                                   | ERY     |                               | S-ô      |                               | 30-100/5"                             |
| 1:2         | .c                   |             | NOTES                                                                                           |         |                               |          |                               |                                       |
|             |                      |             | OF ABOUT 10.9 FT ON 1-16-<br>DUE TO WOODEN OBSTRUCTION<br>ENCOUNTERED AT APPROXIMATE<br>9.5 FT. |         |                               |          |                               |                                       |
|             | -   -  -<br>-   -  - |             | 2: SURFACE WATER THICKNESS VAR<br>WITH TIDE BETWEEN 4.0 FT AN<br>10.0 FT DURING DRILLING.       |         |                               |          |                               |                                       |
| 16          |                      |             | 3. BORING TREMIE GROUTED WITH<br>CEMENT/BENTONITE GROUT.                                        |         |                               |          |                               |                                       |
|             |                      |             |                                                                                                 |         |                               |          |                               |                                       |
| 20          |                      |             |                                                                                                 |         |                               |          | 4                             |                                       |
|             |                      |             |                                                                                                 |         |                               |          | ×                             |                                       |
|             |                      |             |                                                                                                 |         |                               |          | _<br> <br> <br>               |                                       |
| <br> 24.    | с<br>                |             |                                                                                                 | -       |                               |          | -<br>-<br>                    |                                       |
| 8<br>8<br>1 | J.LI.J               |             |                                                                                                 |         |                               |          |                               | L L L L L L L L L L L L L L L L L L L |
| -           |                      |             |                                                                                                 |         |                               |          | -<br> <br> <br> <br>          |                                       |
| 25          | cΞ                   |             |                                                                                                 |         |                               |          | [<br>                         |                                       |

| DRILLING LOG                                             | DMSION NEW YORK DISTRICT<br>PASSAIC RIVER DIV                                                     | INSTAL      | LATION                        |                        | 1:010 110 11                                             | SHEET         |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------|-------------------------------|------------------------|----------------------------------------------------------|---------------|
| 1 PROJECT<br>PASSAIC RIVER                               | BANK RESTORATION, NEWARK                                                                          |             |                               |                        | NOM WATER RO                                             |               |
| 2. LOCATION (Coordinates or                              | Station)<br>SITE PLAN                                                                             |             |                               |                        | ATION OF DRILL                                           |               |
| 3. DRILLING AGENCY                                       |                                                                                                   | 1           |                               | AOBILE                 | B-61 (SKID RIG                                           |               |
| 4. HOLE NO (As shown on a and file number)               |                                                                                                   |             | AL NO. OF<br>RDEN SAMPL       |                        | DISTURBED                                                |               |
| S. NAME OF DRILLER J. GO                                 | RMAN                                                                                              | <b></b>     | AL NUMBER                     |                        | ×ES                                                      |               |
| 6 DIRECTION OF HOLE                                      |                                                                                                   |             | VATION N/A                    |                        | 1 15 05                                                  | 1-17-95       |
|                                                          | CLINED DEG. FROM VERT.                                                                            | <b></b>     |                               |                        | 1-16-95                                                  |               |
| 7. THICKNESS OF OVERBURDER<br>8. DEPTH DRILLED INTO ROCK |                                                                                                   | 18. TOT.    | AL CORE RE                    |                        |                                                          | N/A           |
| 9. TOTAL DEPTH OF HOLE                                   | 18.8 FT                                                                                           | 19. INSI    | PECTOR(S)                     |                        | D. MAZUJIAN                                              |               |
| ELEVATION DEPTH LEGEND                                   | CLASSIFICATION<br>(Description)<br>d                                                              |             | Z CORE<br>RECOVERY<br>OR W.C. | BOX OR<br>SAMPLE<br>NO | REMAR<br>(Drilling time, water<br>weathering, etc.,<br>9 | loss depth of |
|                                                          |                                                                                                   |             |                               |                        | · · · · ·                                                |               |
|                                                          |                                                                                                   |             |                               |                        |                                                          |               |
|                                                          | REFER TO BORING WI-11 FOR ST<br>DESCRIPTION TO ± 12 FT                                            | RAIA        |                               |                        |                                                          | <br>          |
|                                                          |                                                                                                   |             |                               |                        |                                                          | · <u> </u>    |
|                                                          |                                                                                                   |             |                               |                        |                                                          | =             |
|                                                          |                                                                                                   |             |                               |                        |                                                          |               |
|                                                          | -<br>-                                                                                            |             |                               |                        |                                                          |               |
| s.o                                                      |                                                                                                   |             |                               |                        |                                                          |               |
|                                                          |                                                                                                   |             |                               |                        |                                                          | =             |
|                                                          |                                                                                                   |             |                               |                        |                                                          |               |
|                                                          |                                                                                                   |             |                               |                        |                                                          | -             |
| 12.0                                                     |                                                                                                   |             |                               | 5-8                    |                                                          |               |
|                                                          | REDDISH BROWN FINE SANDSTONE.<br>STRONG, MODERATELY TO SLIGHTLY<br>WEATHERED, BLACK DISCOLORATION | 1           |                               |                        |                                                          | -             |
|                                                          | EVIDENT IN NATURAL FRACTURES. 1<br>THICKLY BEDDED, WIDELY FRACTUR                                 | VERY<br>ED. | 93.3                          |                        | CORE RUN R-1<br>FROM 13.8 FT TO                          |               |
|                                                          | FREQUENT VUGS (FINES WASHED A<br>1/16" TO 3/8" DIA.                                               | WAY)        | 95.5                          |                        | REC=56" 7 REC=                                           | D=7577        |
|                                                          |                                                                                                   |             |                               | R - 1                  |                                                          | -             |
|                                                          |                                                                                                   |             |                               | Ì                      |                                                          |               |
|                                                          | NOTES                                                                                             |             |                               |                        |                                                          |               |
|                                                          | 1. BORING TERMINATED AT THE DE<br>OF ABOUT 18.8 FT ON 1/17/9                                      | 95.         |                               |                        |                                                          |               |
|                                                          | 2. SURFACE WATER THICKNESS VAR<br>WITH TIDE BETWEEN 3.2 FT AN                                     | RIED        |                               |                        |                                                          |               |
|                                                          | 7.3 FT DURING DRILLING.<br>3 BORING TREMIE GROUTED WITH<br>CEMENT/BENTONITE GROUT.                |             |                               |                        |                                                          |               |
|                                                          |                                                                                                   |             |                               |                        |                                                          | -             |
| <br>24.0 —                                               | 2                                                                                                 | -           |                               |                        | -                                                        |               |
|                                                          |                                                                                                   |             | j                             |                        |                                                          | <b>–</b>      |
|                                                          |                                                                                                   |             |                               |                        |                                                          |               |
|                                                          |                                                                                                   |             |                               |                        |                                                          | Ξ             |
| 28.0                                                     |                                                                                                   |             |                               |                        |                                                          |               |
| ENG FORM 1836                                            | PROJECT<br>PASSAIC RIVER BANK F                                                                   | RESTOR      | RATION.                       | NEWARK                 | HOLE NO.                                                 | WT-11A        |

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| IC RIVER B<br>cordinates or St<br>SEE<br>NCY<br>WARREN G(<br>shown on ara-<br>ber)<br>LLER<br>J. GOR<br>HOLE                 | SITE PLAN<br>EORGE, INC.                                                                                                               | 10. Si2<br>11. DA<br>12. MA<br>13. TO1<br>14. TO1<br>15. ELE<br>16. DA1<br>17. ELE<br>18. TO1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NUFACTOREF<br>N<br>AL NO. OF<br>RDEN SAMPL<br>AL NUMBER<br>VATION N/A<br>E HOLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4<br>EVATION S<br>I'S DESIGN<br>MOBILE<br>OVER-<br>LES TAKEN<br>CORE BO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NOM WATER<br>HOWN (TBM, MSL OR<br>ATION OF DRILL<br>B-51 (SKID RI<br>DISTURBED<br>13<br>XES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| AND AND AND AND AND AND AND AND AND AND                                                                                      | Internal SITE PLAN<br>SITE PLAN<br>EORGE, INC.<br>Inving little WT-12<br>MAN<br>LINED DEG. FROM VERT.<br>23.5 FT.<br>4.5 FT.<br>29 FT. | 11. DA<br>12. MA<br>13. TOT<br>BU<br>14. TOT<br>15. ELE<br>16. DAT<br>17. ELE<br>18. TOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | IUM FOR EL<br>NUFACTOREF<br>N<br>AL NO. OF<br>RDEN SAMPL<br>AL NUMBER<br>VATION N/A<br>E HOLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 4<br>EVATION S<br>I'S DESIGN<br>MOBILE<br>OVER-<br>LES TAKEN<br>CORE BO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NOM WATER<br>HOWN (TBM, MSL OR<br>ATION OF DRILL<br>B-51 (SKID RI<br>DISTURBED<br>13<br>XES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ROTARY NX COR<br>NGVD)<br>IG ON BARGE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| SEE<br>NCY<br>WARREN G<br>shown on dro<br>ber)<br>HULER J. GOR<br>HOLE<br>OVERBURDEN<br>CD INTO ROCK<br>OF HOLE<br>TH LEGEND | SITE PLAN<br>EORGE, INC.<br>WT-12<br>MAN<br>LINED DEC. FROM VERT.<br>23.5 FT.<br>4.5 FT.<br>29 FT.                                     | 12. 444<br>113 ΤΟΙ<br>14. ΤΟΙ<br>15. ELE<br>16. DAI<br>17. ELE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | NUFACTOREF<br>N<br>AL NO. OF<br>RDEN SAMPL<br>AL NUMBER<br>VATION N/A<br>E HOLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OVER-<br>LES TAKEN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ATION OF DRILL<br>B-63 (SKID RI<br>DISTURBED<br>13<br>XES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | G ON BARGE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| NCY<br>WARREN G<br>shown on dro<br>ber)<br>HULE<br>HOLE<br>OVERBURDEN<br>D INTO ROCK<br>OF HOLE<br>TH LEGEND                 | EORGE, INC.<br>WT-12<br>MAN<br>LINED DEC. FROM VERT.<br>23.5 FT.<br>4.5 FT.<br>29 FT.                                                  | 13 TOT<br>BU<br>14. TOT<br>15. ELE<br>16. DAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | AL NO. OF<br>RDEN SAMPL<br>AL NUMBER<br>VATION N/A<br>E HOLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MOBILE<br>OVER-<br>LES TAKEN<br>CORE BO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | B-61 (SKID RI<br>DISTURBED<br>13<br>XES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UNDISTUREED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Shown on gro<br>ber)<br>LLER<br>HOLE<br>OVERBURDEN<br>D INTO ROCK<br>OF HOLE<br>TH LEGEND                                    | WT-12<br>MAN<br>LINED DEG. FROM VERT.<br>23.5 FT.<br>4.5 FT.<br>29 FT.                                                                 | BU<br>14. TOT<br>15. ELE<br>16. DAT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | RDEN SAMPL<br>AL NUMBER<br>VATION N/A<br>E HOLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CORE BO                                                                                                                                                                             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                                                                                                                                                                                                                                             |
| HOLE INC                                                                                                                     | MAN<br>LINED DEG. FROM VERT.<br>23.5 FT.<br>4.5 FT.<br>29 FT.                                                                          | 14. TOT<br>15. ELE<br>16. DAT<br>17. ELE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | AL NUMBER<br>VATION N/A<br>E HOLE                                                                                                               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                                                                                                                                                                                                                                        |
| J. GOR<br>HOLE INC.<br>OVERSURDEN<br>DINTO ROCK<br>OF HOLE<br>TH LEGEND                                                      | 23.5 FT.<br>23.5 FT.<br>4.5 FT.<br>29 FT.                                                                                              | 16. DAT<br>17. ELE<br>18. TOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | E HOLE                                                                                                                               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                                                                                                                                                                                                                                                   |
| OVERBURDEN<br>D INTO ROCK<br>OF HOLE<br>TH LEGEND                                                                            | 23.5 FT.<br>4.5 FT.<br>29 FT.                                                                                                          | 17. ELE<br>18. TOT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                           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| O INTO ROCK                                                                                                                  | 4.5 FT.<br>29 FT.                                                                                                                      | 18. 101                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | VATION TOP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | L.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| O INTO ROCK                                                                                                                  | 4.5 FT.<br>29 FT.                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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|                                                                                                                              | 29 FT.                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                                                                                                                    | COVERY F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OR BORING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 26.5 IN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                                                                              | CLASSIFICATION                                                                                                                         | -19. INS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | PECTOR(S)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | D. MAZUJIAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                                                                                                              | (Description)<br>d                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Z CORE<br>RECOVERY<br>OR W.C.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | BOX OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | REAU<br>(Drilling time, wat<br>weathering, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ARKS<br>ter loss, aepth of<br>if significant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| -X1/.//X                                                                                                                     | (OH) DLIVE GRAY ORGANIC CLAY.                                                                                                          | WET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <u>  e</u><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            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                                                                                                                    | R-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CORE RUN R-1:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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| -                                                                                                                            | GRADING TO VERY STRONG TO                                                                                                              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              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|                                                                                                                              | STRONG, SLIGHTLY TO MODER                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                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                                                                                                                                                                    | >OR=4"=0, ROD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                                                                                                                              |                                                                                                                                        | (GP) DARK BROWN COARSE TO FINE SAM<br>GRAVEL. SOME COARSE TO FINE SAM<br>GRAVEL WET, VERY LOOSE, STAINED<br>ELACK, STRONG PHC ODOR<br>(SP) BLACK MEDIUM TO FINE SAM<br>TRACE SILT, WET, MEDIUM DENSE,<br>STAINED BLACK, STRONG PHC ODO<br>OCCASIONAL WOOD FRAGMENTS<br>GRADING TO COARSE TO FINE<br>SAND WITH TRACE FINE GRAV<br>TRACE SILT<br>GRADING TO DARK BROWN, LIT<br>SILT, WITH TRACE ORGANICS<br>GRAVEL, SOME COARSE TO FINE<br>SATURE SILT, WITH TRACE ORGANICS<br>(GP) DARK BROWN COARSE TO FINE<br>SATURE SILT, WITH TRACE ORGANICS<br>(GP) DARK BROWN COARSE TO FINE<br>GRAVEL, SOME COARSE TO FINE SA<br>TRACE SILT, FREQUENT COBBLES, VERY, DENSE OCCASIONAL FRAGMEN<br>STAINED BLACK, STRONG PHC ODO<br>(GC) REDDISH BROWN COARSE TO<br>GRAVEL, (SHALE), SOME SILTY CLAN<br>TRACE COARSE TO FINE SAND, WET<br>HARD, WEAK PHC ODOR, (GLACIAL<br>VERY STRONG TO WEAK, CLOSELY<br>VERY CLOSELY JOINTED, ROD=07 | GRADING TO DARK BROWN COARSE TO FINE<br>GRAVEL. SILT. WITH TRACE ORGANICS<br>(GP) DARK BROWN COARSE TO FINE<br>GRAVEL. SULT. WITH TRACE ORGANICS<br>(GP) DARK BROWN COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRADING TO DARK BROWN, LITTLE<br>SILT. WITH TRACE ORGANICS<br>(GP) DARK BROWN COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>STAINED BLACK, STRONG PHC ODOR<br>(GC) REDDISH BROWN COARSE TO FINE<br>GRAVEL. SOME SILTY CLAY.<br>TRACE COARSE TO FINE SAND. WET<br>HARD. WEAK PHC ODOR . (GLACIAL TILL)<br>REDDISH BROWN SHALE BEDROCK.<br>SLICHTLY WEATHERED TO RESIDUAL SOIL.<br>VERY STRONG TO WEAK, CLOSELY TO | (SM) ELACK MEDIUM TO FINE SAND, AND         (GRAVEL, WET, VERY LOOSE, STAINED         (SP) BLACK MEDIUM TO FINE SAND,         (SP) BLACK MEDIUM TO FINE SAND,         TRACE SUIT, WET, MEDIUM DENSE,         STAINED BLACK, STRONG PHC ODOR,         OCCASIONAL WOOD FRAGMENTS         GRADING TO COARSE TO FINE         SAND WITH TRACE FINE GRAVEL,         TRACE SILT         GRADING TO DARK BROWN, LITTLE         SILT, WITH TRACE ORGANICS         GRAVEL, SOME COARSE TO FINE         GRAVEL, SOME COARSE TO FINE SAND,         TRACE SILT, FREQUENT COBBLES, WET         VERY, DENSE OCCASIONAL FRAGMENTS         GRAVEL, SOME COARSE TO FINE SAND,         TRACE SILT, FREQUENT COBBLES, WET         VERY, DENSE OCCASIONAL FRAGMENTS         STAINED BLACK, STRONG PHC ODOR         (GC) REDDISH BROWN COARSE TO FINE         GRAVEL, (SMALE), SOME SILTY CLAY,         TRACE COARSE TO FINE SAND, WET         HARD, WEAK PHC ODOR, (GLACIAL TILL)         REDDISH BROWN SHALE BEDROCK,         SLIGHTLY WEATHERED TO RESIDUAL SOIL,         VERY STRONG TO WEAK, CLOSELY TO | (SM) BLACK MEDIUM TO FINE SAND. AND<br>CLAYEY SILT. TRACE MEDIUM TO FINE SAND.<br>GRAVEL. WET. VERY LOOSE. STAINED<br>ELACK. STRONG PHC ODOR       S-3         (SP) BLACK MEDIUM TO FINE SAND.<br>TRACE SILT. WET. MEDIUM DENSE.<br>STAINED BLACK. STRONG PHC ODOR.<br>OCCASIONAL WOOD FRAGMENTS       S-4         GRADING TO COARSE TO FINE<br>SAND WITH TRACE FINE GRAVEL.<br>TRACE SILT       S-5         GRADING TO DARK BROWN, LITTLE<br>SILT, WITH TRACE ORGANICS       S-6         GRADING TO DARK BROWN COARSE TO FINE<br>SILT, WITH TRACE ORGANICS       S-7         GRADING TO DARK BROWN COARSE TO FINE<br>SILT, WITH TRACE ORGANICS       S-7         GRAVEL. SOME COARSE TO FINE<br>SILT, WITH TRACE ORGANICS       S-8         GRAVEL. SOME COARSE TO FINE<br>GRAVEL. SOME COARSE TO FINE<br>SILT, WITH TRACE ORGENICS       S-10         GRAVEL. SOME COARSE TO FINE<br>STAINED BLACK, STRONG PHC ODOR       S-10         GCO REDDISH BROWN COARSE TO FINE<br>GRAVEL. SOME SULT CLAY,<br>TRACE COARSE TO FINE SAND, WET<br>HARD. WEAK PHC ODOR , (GLACIAL TILL)       S-12         REDDISH BROWN SHALE BEDROCK,<br>SLIGHTLY WEATHERED TO RESIDUAL SOIL.<br>VERY STRONG TO WEAK, CLOSELY TO       S-13 | (SM) ELACK MEDIUM TO FINE SAND, AND         (SM) CLAYEY SULT TRACE MEDIUM TO FINE SAND, CLAYEY SULT TRACE MEDIUM TO FINE SAND.         (SP) ELACK, STRONG PHE ODOR         (SP) ELACK MEDIUM TO FINE SAND.         (SP) ELACK MEDIUM TO FINE SAND.         STAINED BLACK, STRONG PHE ODOR.         OCCASIONAL WOOD FRAGMENTS         GRADING TO COARSE TO FINE         SAND WITH TRACE FINE GRAVEL.         S-5         GRADING TO DARK BROWN, LITTLE         SULT, WITH TRACE ORGANICS         SILT, WITH TRACE ORGANICS         SILT, WITH TRACE ORGANICS         S-6         GRADING TO DARK BROWN, LITTLE         SULT, WITH TRACE ORGANICS         SILT, WITH TRACE ORGANICS         S-7         GRAVEL, SOME COARSE TO FINE         GRAVEL, SOME COARSE TO FINE         GRAVEL, SOME COARSE TO FINE         STAINED BLACK, STRONG PHE ODOR         GRAVEL, SOME COARSE TO FINE SAND, WET         YERY DENSE OCCASIONAL FRAGMENTS         STAINED BLACK, STRONG PHE ODOR         GRAVEL, SME SITO FINE SAND, WET         HARD, WEAK PHE ODOR , (GLACIAL TILL)         HARD, WEAK PHE ODOR , (GLACIAL TILL)      < |

| Hole No       WT-12         DRILLING LOG       DIMSION NEW YORK DISTRICT<br>PASSAIC RIVER DIV.       INSTALLATION       SHEET 2<br>0 2 SHEETS         1. PROJECT<br>PASSAIC RIVER BANK RESTORATION. NEWARK       IO. SIZE AND TYPE OF BIT<br>SEE SITE PLAN       NOM O.D. HSA.<br>4" NOM WATER ROTARY. NX CORE         2. LOCATION (Coordinates of Station)<br>SEE SITE PLAN       II. DATUM FOR ELEVATION SHOWN (TBM.MSL OR NGVD)         12. MANUFACTORER'S DESIGNATION OF DRIL<br>MOBILE B-61 (SKID RIG ON BARGE)         3. DRILLING AGENCY<br>WARREN GEORGE, INC:       II. DATUM FOR ELEVATION OF DRIL<br>MOBILE B-61 (SKID RIG ON BARGE)         4. HOLE NO. (As shown on drowing title<br>ond the number)       WT-12         5. NAME OF DRILER<br>J. GORMAN       UNDISTURBED<br>UNDISTURBED       UNDISTURBED<br>UNDISTURBED         6. DIRECTION OF HOLE       DEG. FROM VERT.       16. DATE HOLE       1-12-95         7. THICKNESS OF OVERBURDEN       23.5 FT.       18. TOTAL CORE RECOVERY FOR BORING       26.5 IN         8. DEPTH DRILLED INTO ROCK       4.5 FT.       19. SIGMATURE OF INSPECTOR(S)       1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |
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| 1. PROJECT       PASSAIC RIVER BANK RESTORATION. NEWARK       10. SIZE AND TYPE OF BIT       8" NOM O.D. HSA.<br>4" NOM WATER ROTARY. NX CORE         2. LOCATION (Coordinates or Station)<br>SEE SITE PLAN       11. DATUM FOR ELEVATION SHOWN (TBM.MSL OR NGVD)         3. DRILLING AGENCY<br>WARREN GEORGE. INC:       12. MANUFACTORER'S DESIGNATION OF DRILL<br>MOBILE B-61 (SKID RIG ON BARGE)         4. HOLE NO. (As shown on drawing title<br>ond the number)       WT-12         5. NAME OF DRILER<br>J. GORMAN       WT-12         6. DIRECTION OF HOLE       DEG FROM VERT.         7. THICKNESS OF OVERBURDEN       23.5 FT.         8. DEPTH ORILLED INTO ROCK       23.5 FT.         8. DEPTH ORILLED INTO ROCK       4.5 FT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |
| 2. LOCATION (Coordinates or Station)       11. DATUM FOR ELEVATION SHOWN (TBM,MSL OR NGVD)         3. DRILLING AGENCY       12. MANUFACTORER'S DESIGNATION OF DRILL         3. DRILLING AGENCY       MARREN GEORGE, INC:         4. HOLE NO. (As shown an drawing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing title on a frewing                                                                                                                                         |     |
| 3: DRILLING AGENCY       WARREN GEORGE. INC:       MOBILE B-61 (SKID RIG ON BARGE)         4: HOLE NO. (As shown on drowing title ond the number)       WT-12       13: TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN       DISTURBED<br>13: O       UNDISTURBED<br>0         5: NAME OF DRILLER<br>J. GORMAN       WT-12       14: TOTAL NUMBER CORE BOXES       0         6: DIRECTION OF HOLE       INCLINED       DEG. FROM VERT.       16: DATE HOLE       1-12-95       1-13-95         7: THICKNESS OF OVERBURDEN       23.5 FT.       18: TOTAL CORE RECOVERY FOR BORING       26.5 IN         8: DEPTH DRILLED INTO ROCK       4.5 FT.       19: SIGNATURE OF INSPECTOR(S)       10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |
| WARREN GEORGE. INC:       13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN       DISTURBED<br>13. TOTAL NUMBER       UNDISTURBED<br>0         4. HOLE NO. (As shown on drowing title<br>ond (He number)       WT-12       13. TOTAL NO. OF OVER-<br>BURDEN SAMPLES TAKEN       DISTURBED<br>13. O         5. NAME OF DRILLER<br>J. GORMAN       WT-12       14. TOTAL NUMBER CORE BOXES       0         6. DIRECTION OF HOLE       INCLINED       DEG. FROM VERT.       16. DATE HOLE       1-12-95       1-13-95         7. THICKNESS OF OVERBURDEN       23.5 FT.       18. TOTAL CORE RECOVERY FOR BORING       26.5 IN         8. DEPTH DRILLED INTO ROCK       4.5 FT.       19. SIGNATURE OF INSPECTOR(S)       10.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
| NULL NO.     WT-12       0nd file number)     WT-12       14. TOTAL NUMBER CORE BOXES       5. NAME OF DRILLER     J. GORMAN       6. DIRECTION OF HOLE     15. ELEVATION N/A       7. THICKNESS OF OVERBURDEN     23.5 FT.       8. DEPTH DRILLED INTO ROCK     4.5 FT.       19. SIGNATURE OF INSPECTOR(S)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |
| 5. NAME OF DRILLER     J. GORMAN     15. ELEVATION N/A       6. DIRECTION OF HOLE     INCLINED     DEG. FROM VERT.     16. DATE HOLE     1-12-95     1-13-95       7. THICKNESS OF OVERBURDEN     23.5 FT.     18. TOTAL CORE RECOVERY FOR BORING     26.5 IN       8. DEPTH DRILLED INTO ROCK     4.5 FT.     19. SIGNATURE OF INSPECTOR(S)     1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
| X VERTICAL       INCLINED       DEG. FROM VERT.       16. DATE HOLE       1-12-95       1-13-95         7. THICKNESS OF OVERBURDEN       23.5 FT.       17. ELEVATION TOP OF MUDLINE       -3.2 FT±         8. DEPTH DRILLED INTO ROCK       4.5 FT.       18. TOTAL CORE RECOVERY FOR BORING       26.5 IN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |
| 7. THICKNESS OF OVERBURDEN     23.5 FT.       8. DEPTH DRILLED INTO ROCK     4.5 FT.       19. SIGNATURE OF INSPECTOR(S)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |
| 8. DEPTH DRILLED INTO ROCK 4.5 FT. 18. TOTAL CORE RECOVERY FOR BOHING 26.5 IN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |
| 19. SIGNATURE OF INSPECTOR(S)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 1   |
| 9 TOTAL DEPTH OF HOLE 29 FT. D. MAZUJIAN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |
| CLASSIFICATION     5 CORE     BOX OR     REMARKS       c     D     (Description)     RECOVERY     SAMPLE     (Drilling time, water loss, depth of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control of control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on control on contrel on control on control on control on control on control                                                                                                                |     |
| SEE ABOVE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |
| REC=16 <sup>-</sup> , ZREC=66.7<br>>OR=4 <sup>-</sup> =8.5 <sup>-</sup> , RCD=35.4 <sup>-</sup> ,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |
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| 2 SURFACE WATER THICKNESS VARIED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
| 32.0 6.6 FT. DURING DRILLING.<br>3. BORING TREMIE GROUTED WITH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |
| CEMENT/BENTONITE GROUT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
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| 36.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
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| 3. BORING TREME GROUTED WITH<br>CEMENT/BENTONITE GROUT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -   |
| 40.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
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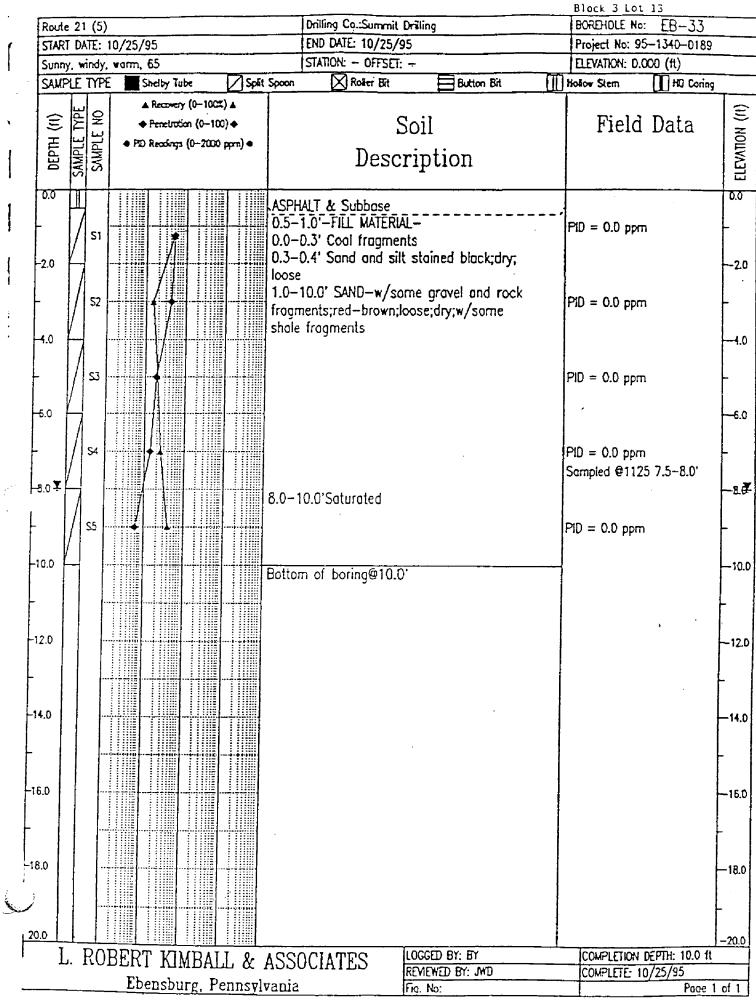
|                 |                |                                                        | · ·         |                     |                  | Hole No                     | wī-13                                 |
|-----------------|----------------|--------------------------------------------------------|-------------|---------------------|------------------|-----------------------------|---------------------------------------|
|                 |                | MSION NEW YORK DISTRICT                                | INSTALLA    | TION                |                  |                             | SHEET 1<br>OF 1 SHEET                 |
| DRILLING LC     | S D            | PASSAIC RIVER DIV.                                     |             | AND TYPE            |                  | E NOM                       | O.D. HSA                              |
|                 |                | NK RESTORATION, NEWARK                                 | 10. SIZE    | FOR ELEN            | ATION SHO        | WN (TBM,MSL, OR N           |                                       |
| LOCATION (COOP  | ouncies or Sto | lion)                                                  | 12. MANL    | FACTORER'S          | DESIGNAT         | ON OF DREL<br>-61 (SKID RIC | ON BARGE)                             |
|                 | <u></u>        |                                                        |             |                     | VER-             | DISTURBED                   | UNDISTURBED                           |
| HOLE NO (AS     | ARREN GE       | ORGE, INC.                                             | BURD        | NUMBER              | S IMEN           | 5                           | 0                                     |
| and file numbe  | ·;             |                                                        | 1           | NUMBER              |                  |                             |                                       |
| . NAME OF DRILL |                |                                                        |             |                     | 1                | -11-95                      | 1-11-95                               |
| E DIRECTION OF  |                | LINED DEG. FROM VERT                                   |             |                     | OF MUDLIN        | s -15.8 FT±                 |                                       |
| 7. THICKNESS OF | OVERBURDEN     | 5.5 FT.                                                |             | L CORE RE           |                  |                             | N/A                                   |
| 8. DEPTH DRILLE | INTO ROCK      | 2.5 FT.                                                | 19. INSP    | ECTOR(S)            | ), MAZU          | JIAN/M. TORSI               | ELLO                                  |
| 9. TOTAL DEPTH  | OF HOLE        | 8.0 FT.<br>CLASSIFICATION                              | <u></u>     | I CORE              | BOX OR<br>SAMPLE | REN                         | larks depth of                        |
| ELEVATION DEPT  |                | (Description)                                          |             | RECOVERY<br>OR W.C. | NO               | weathering, et.             | c., it significant)<br>SPT BLOWS/6 IN |
| с Þ             |                | (OH) BLACK/DARK BROWN ORGA                             | NIC<br>UM   |                     | S-1              |                             |                                       |
|                 |                | A STIFF FREQUENT DECOMPOSED                            |             |                     |                  |                             | 4-17-35-72                            |
|                 |                | STAINED BLACK                                          | /<br>O FINE |                     | S-2              | ]                           | 72-150/5                              |
|                 | デン             |                                                        | // .        |                     |                  |                             |                                       |
|                 | <u> </u>       | LITTLE COARSE TO FINE SAND.<br>SILT. PHC ODOR          |             |                     | 5-3              |                             |                                       |
| 4.0             |                |                                                        |             | ĺ                   | 5-5              |                             | 15-16-100/2"                          |
|                 |                | SHALE BEDROCK, REDDISH BRO                             | WN SHAL     | !                   | 5-4              |                             | 55-100/5                              |
|                 |                | MODERATELY WEAK TO WEAK.<br>COMPLETELY WEATHERED TO RE |             |                     |                  |                             | 34-58-100/3"                          |
|                 |                | SOIL                                                   |             | <u> </u>            | S-5              | <u> </u>                    |                                       |
| 0.3             |                | NOTES                                                  | DEDIN       |                     |                  |                             |                                       |
|                 |                | 1. BORING TERMINATED AT THE<br>OF ABOUT 8 FT ON 1/11/  | 30.         |                     |                  |                             |                                       |
|                 | -              | 2. SURFACE WATER THICKNESS<br>WITH TIDE BETWEEN 16 FT  | AND         |                     |                  |                             |                                       |
|                 |                | 17 FT DURING DRILLING.                                 |             |                     |                  | -                           |                                       |
| 120             |                | CEMENT/BENTONITE GROUT.                                |             | l                   |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
|                 | <u> </u> ,     |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
| 16.0            |                |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             | i                   |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
| 20.             | o —            |                                                        |             |                     |                  |                             |                                       |
|                 | _              |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        | <b>z</b> ,  | l                   |                  |                             |                                       |
|                 |                |                                                        | 5           | •                   |                  |                             |                                       |
| 24.             | ¢− <u>−</u>    |                                                        |             | 1                   |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
|                 |                |                                                        |             |                     |                  |                             |                                       |
| 125             | <u>.c -:</u>   | PROJECT                                                |             |                     | <u></u>          | HOLE I                      | NO. WT-13                             |
| ENG FOR         | м 1836         | PROJECT<br>PASSAIC RIVER B                             | NK RES      | TORATIO             | N. NEW           |                             |                                       |

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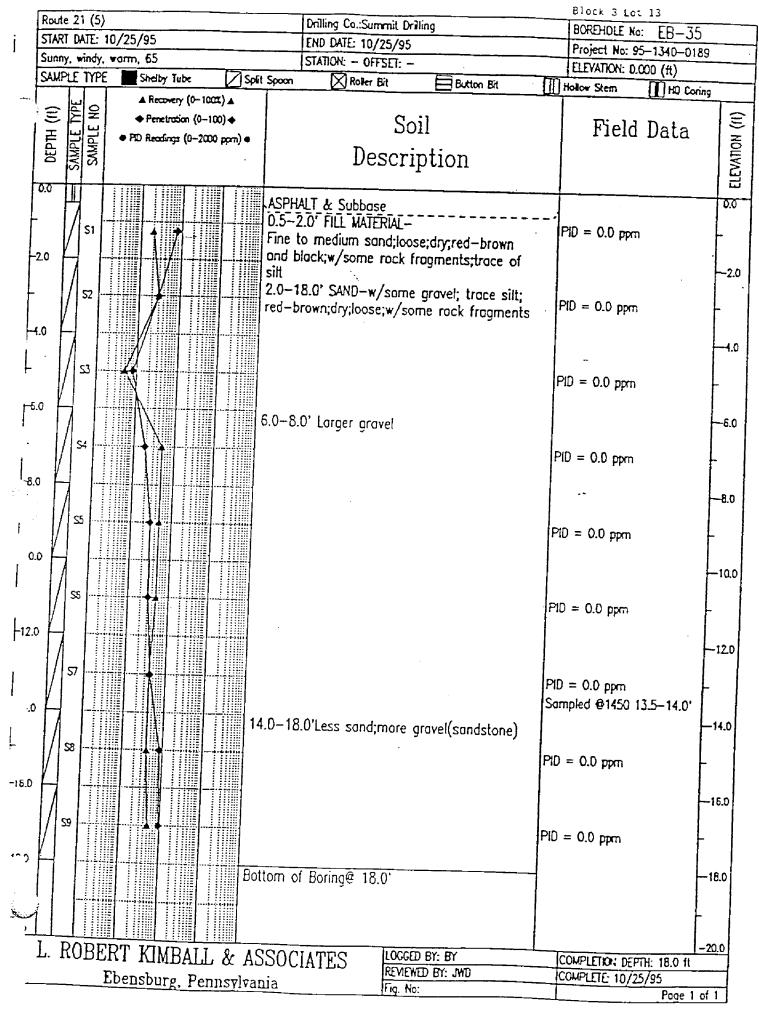
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| Route 21 (5)               | Drilling Co.:Summit Dr   | 711                                    | Block 3 Lot 13                                 |                |
|----------------------------|--------------------------|----------------------------------------|------------------------------------------------|----------------|
| START DATE: 10/25/95       | END DATE: 10/25/95       |                                        | BOREHOLE No: EB-32                             |                |
| Sunny, windy, worm, 65     | STATION: - OFFSET: -     |                                        | Project No: 95-1340-01                         | (              |
|                            | t Spoon Roller Bit       |                                        | ELEVATION: 0.000 (ft)                          |                |
|                            |                          |                                        | Hollow Stem                                    | ning           |
|                            |                          |                                        |                                                | Ê              |
|                            | 50                       | oil                                    | Field Data                                     | ELEVATION (11) |
| HLd JUNES                  | Descr                    | intion                                 |                                                |                |
|                            | 20201                    | P tion                                 |                                                |                |
| 5.0                        | ACDUNIT & C. H           | ······································ |                                                | 0.0            |
|                            | ASPHALT & Subbase        |                                        |                                                |                |
| <b> </b>   51 <b>  ↓ ↓</b> | 0.0-0.3' Black;loose;coo | -<br>I fraaments:day                   | PID = 0.0 ppm                                  |                |
| 2.0                        | Fine to coarse sond;dry; | loose:red-brown                        | Sampled @1040 1.5-2.0'                         |                |
|                            | w/some rock fragments    | trace of silt                          |                                                | -2.0           |
|                            | w/some red brick fragm   | ents                                   |                                                | C C C          |
|                            |                          |                                        | PID = 0.0 ppm                                  |                |
|                            |                          |                                        | 1                                              |                |
|                            |                          |                                        |                                                | -4.0           |
|                            |                          |                                        | P1D = 0.0 ppm                                  | ÷ 1            |
|                            |                          |                                        |                                                |                |
| .0                         |                          | <b>4</b>                               |                                                | 6.0            |
|                            | 6.0-16.0' SAND-w/some    | e silt; moist to wet;                  |                                                | -0.0           |
| ¥ /  S4                    | red-brown;loose          |                                        | PID = 0.0 ppm                                  | <b>X</b>       |
|                            |                          |                                        |                                                |                |
| ○                          | 8 0-15 O'CAUE - Lut - Lu |                                        |                                                | -8.0           |
|                            | 8.0-16.0'SAME, but satur | aled, mushy                            |                                                |                |
| / S5                       |                          |                                        | PID = 0.0 ppm                                  |                |
|                            |                          |                                        |                                                |                |
| ).0 - X                    |                          |                                        |                                                | -10.0          |
|                            |                          |                                        |                                                |                |
| /   S6                     |                          |                                        | PID = 0.0 ppm                                  | <u>⊢</u>       |
| .0                         |                          |                                        |                                                |                |
|                            |                          |                                        |                                                | -120           |
| 57                         |                          |                                        |                                                | E.             |
|                            |                          |                                        | PID = 0.0  ppm                                 | -              |
|                            |                          |                                        |                                                |                |
|                            |                          |                                        |                                                |                |
|                            |                          |                                        |                                                |                |
|                            |                          |                                        | PID = 0.0 ppm                                  |                |
| ○                          |                          |                                        |                                                |                |
|                            | lottom of boring@16.D'   |                                        |                                                | -16.0          |
|                            |                          |                                        |                                                | -              |
|                            |                          |                                        |                                                | T I            |
| )                          |                          |                                        |                                                | -18.0          |
|                            |                          |                                        |                                                | -              |
|                            |                          |                                        |                                                |                |
|                            |                          |                                        |                                                | -              |
|                            |                          |                                        |                                                | -20.0          |
| L. ROBERT KIMBALL & A      | ASSOCIATES               | ged by: by<br>Ewed by: jwd             | COMPLETION DEFTH: 16.0 f<br>COMPLETE: 10/25/95 | t              |
| Ebensburg, Pennsylv        | ania Fig.                |                                        |                                                | 1 of 1 -       |
|                            |                          |                                        |                                                |                |

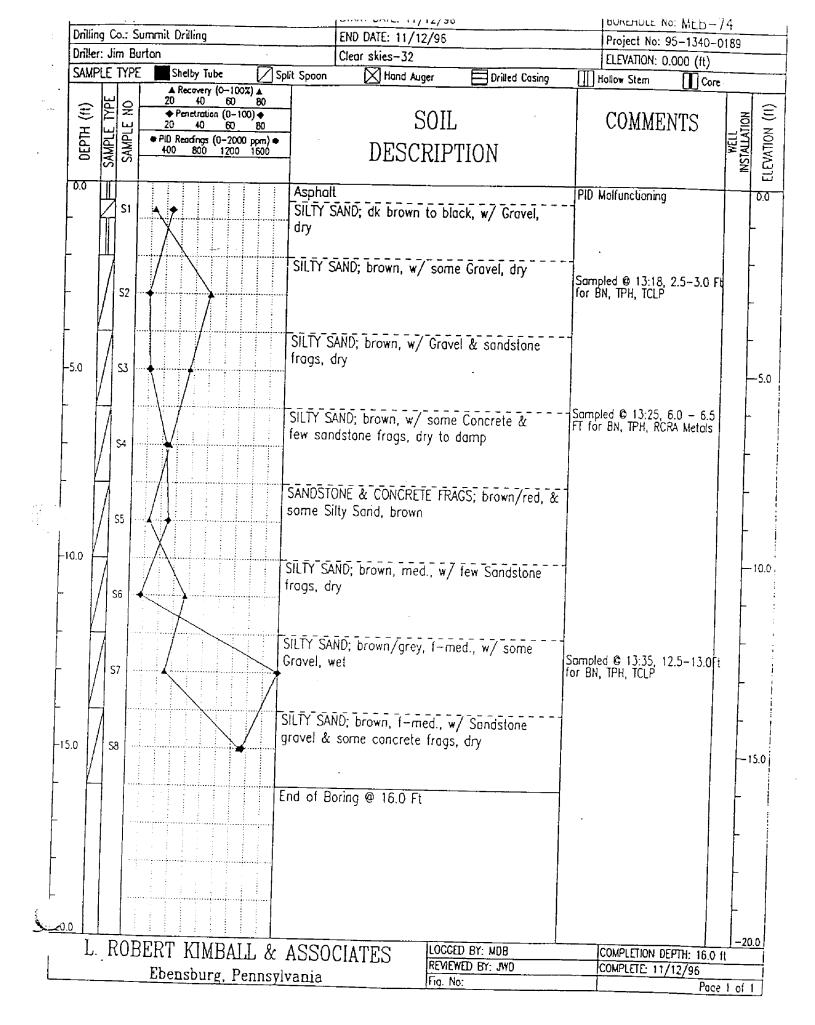


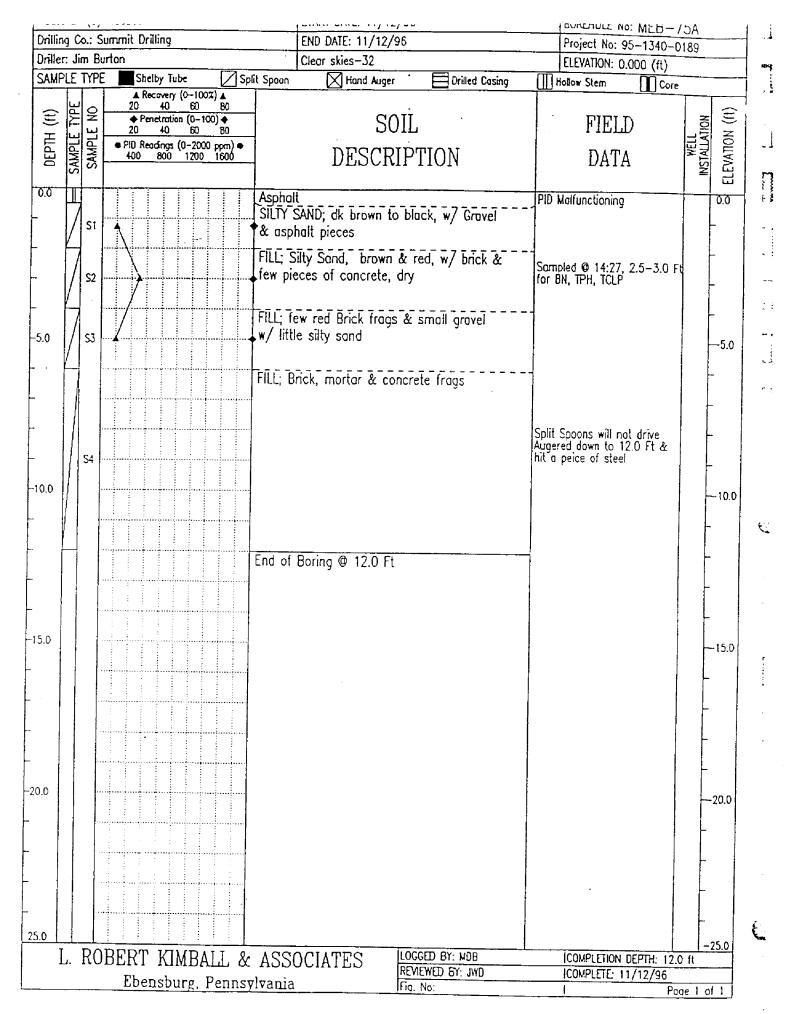
| D. 4. 01 (5)                                    |                    |                                               |                                    | Block 3 Lot                            |                          |                            |
|-------------------------------------------------|--------------------|-----------------------------------------------|------------------------------------|----------------------------------------|--------------------------|----------------------------|
| Route 21 (5)<br>START DATE: 10/25/95            |                    | Drilling Co.:Summit Dri<br>END DATE: 10/25/95 | ling                               |                                        |                          |                            |
| Sunny, windy, warm, 65                          |                    | STATION: - OFFSET: -                          | ·                                  | Project No: 95                         |                          |                            |
| SAMPLE TYPE Shelby Tube                         | Split Spoon        |                                               |                                    | ELEVATION: D.O                         |                          | is                         |
| A Recovery (0-1002)                             |                    | Noeer bat                                     |                                    | Hollow Stem                            | HD Coring                |                            |
|                                                 | • •                | 0.                                            | .:1                                |                                        | D.1.                     | $\Xi$                      |
|                                                 |                    | Sc                                            |                                    | Field                                  | Data                     | ELEVATION (II)             |
| HILDER CONTRACTOR (0-2000)                      | ****               | Descri                                        | intion                             |                                        |                          | Ŭ Į                        |
| S S D                                           |                    | Deser                                         |                                    |                                        |                          | ELEVA                      |
|                                                 |                    |                                               |                                    |                                        | ···· ·· ·······          | 0.0                        |
|                                                 |                    | HALT & Subbase<br>-14.0'FILL NATERIAL-        |                                    |                                        |                          |                            |
| / s1                                            |                    |                                               |                                    | PID = 0.0 ppm                          |                          |                            |
|                                                 | fron               | to medium sand;da<br>ments and coal frag      | mp,100se;w/10ck<br>ments:red_brown |                                        |                          |                            |
| 20                                              | w/s                | ome silt;Lt. brown ar                         | nd black                           |                                        |                          | -2.0                       |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| 52                                              |                    |                                               |                                    | PID = 0.0 ppm                          |                          |                            |
| 4.0                                             |                    |                                               |                                    |                                        |                          |                            |
|                                                 | 4.0-               | 14.0' No coal fragm                           | nents                              |                                        |                          | - <b>1</b> .0 °            |
| 53                                              |                    |                                               |                                    |                                        |                          |                            |
|                                                 |                    |                                               |                                    | PID = 0.0 ppm                          |                          |                            |
| 5.0                                             |                    |                                               |                                    |                                        |                          | 6.0                        |
|                                                 |                    |                                               |                                    |                                        |                          | -6.0                       |
| / 54                                            |                    |                                               |                                    | PID = 0.0 ppm                          |                          |                            |
|                                                 |                    |                                               |                                    | 1 10 - 0.0 pp.11                       |                          |                            |
| 3.0                                             |                    |                                               |                                    |                                        |                          | -8.0                       |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| / SS                                            |                    |                                               |                                    | PID = 0.0 ppm                          |                          |                            |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| 0.0                                             | 100                | 14.01.1                                       |                                    |                                        |                          | -100                       |
|                                                 | 10.0-              | -14.0' w/concrete fr                          | ragments                           |                                        |                          |                            |
| S6                                              |                    |                                               |                                    | PID = 0.0 ppm                          |                          | -                          |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| 2.0                                             |                    |                                               |                                    |                                        |                          | -12.0                      |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| 57                                              |                    |                                               |                                    | PID = 0.0 ppm                          |                          | -                          |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| ·.0 - 0.                                        | Botto              | m of boring@14.0'                             |                                    | Auger refusal @1                       | 14.0'                    |                            |
|                                                 |                    |                                               |                                    | Did not collect s<br>this boring due t | lampie trom<br>to sample |                            |
|                                                 | ******             |                                               |                                    | this boring due the recoveries in spo  | ions.                    | -                          |
| .o                                              |                    |                                               |                                    |                                        |                          |                            |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
|                                                 |                    |                                               |                                    |                                        |                          | -                          |
| 0                                               |                    |                                               |                                    | 1                                      |                          |                            |
|                                                 |                    |                                               |                                    |                                        |                          | -18.0                      |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
|                                                 |                    |                                               |                                    |                                        |                          |                            |
| <u>o   .   .   .   .   .   .   .   .   .   </u> |                    |                                               |                                    |                                        | ļ                        | -20.0                      |
| L. ROBERT KIMBALI                               | & ASS              | OCIATES LO                                    | GCED BY: BY                        | COMPLETION D                           |                          |                            |
| Ebensburg, Per                                  | 1.00<br>Insvivania | RE                                            | NEWED BY: JWD                      | COMPLETE: 10                           |                          |                            |
| , 101                                           |                    |                                               | . 110.                             |                                        | Poge 1<br>TIFR           | <u>of 1</u><br>RA-B-018268 |

TIERRA-B-018268



| Route       |             | _          |                  |            | Drilling Co.:Summit I                                                                        |                                          | BOREHOLE No: EB-36                       |                |
|-------------|-------------|------------|------------------|------------|----------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------|----------------|
|             |             | -          | 10/25/95         |            | END DATE: 10/25/9                                                                            |                                          | Project No: 95-1340-0189                 |                |
|             | _           |            | <b>v</b> arm, 65 | · <u> </u> | STATION: - OFFSET:                                                                           |                                          | ELEVATION: 0.000 (ft)                    |                |
| SAMP        | 1E          | TYPE       | Shelby Tube      | Split      | Spoon 🔀 Roller Bit                                                                           | Button Bit                               | Hollow Stem                              |                |
|             | SAMPLE TYPE | SAMPLE NO  | ▲ Recovery (     | (0-100) 🔶  |                                                                                              | Soil<br>ription                          | Field Data                               | ELEVATION ((1) |
| 2.0         |             | <b>S</b> 1 | <b>]</b> /       |            | ASPHALT & Subbase<br>0.5–2.0' FILL MATERIA<br>Sandy;w/some rock fr<br>Dk. brown;loase;dry;w/ | ogments;black and<br>some cool fragments | PID = 0.0 ppm<br>Sampled @1522 1.50-2.0' | -2.0           |
| <b>f</b> .0 |             | <b>S</b> 2 |                  |            | 2.0-10.0' SAND-w/so<br>rock fragments;damp;l<br>fragments;fine sand                          |                                          | PID = 0.0 ppm                            |                |
| 5.0         |             | 53         |                  |            |                                                                                              |                                          | PID = 0.0 ppm                            | 6.0            |
| 0           |             | 54         |                  |            |                                                                                              |                                          | PID = 0.0 ppm                            | 8.0            |
| 0.0         |             | S5         |                  |            | Bottom of boring @10.                                                                        | 0'                                       | PID = 0.0 ppm                            | -10.0          |
| 2.0         |             |            |                  |            | ,                                                                                            |                                          |                                          | 12.0           |
| 1_0         |             |            |                  |            |                                                                                              |                                          |                                          |                |
| i.D         |             | -          |                  |            |                                                                                              |                                          |                                          | 16.0           |
| .0          |             |            |                  |            |                                                                                              |                                          |                                          | - 18.0         |
| .0<br>T     |             |            |                  |            |                                                                                              | LOGGED BY: BY                            | COMPLETION DEPTH: 10.0 f                 | -20.0          |
| 1           | J           | кU         | REKL KIW         | RATT &     | ASSOCIATES                                                                                   | REVIEWED BY: JWD                         | COMPLETE: 10/25/95                       | <u> </u>       |
|             |             |            | Ebensbur         | g, Pennsyl | vania                                                                                        | Fig. No:                                 |                                          | 1 of 1         |





| Deller, Gr.: Survert, Davies         Delte: 1/12/96         Project No: 99–104–0108           Delte: dim Barton         [Cerer size-32]         [Extraction of (n)]         [Extraction of (n)]           SMPLE TYPE         Sorting (P and a for the internation of (n))         Sorting (P and a for the internation of (n))         [Extraction of (n)]         [Extraction of (n)]           SMPLE TYPE         Sorting (P and a for the internation of (n))         SOIL         [Extraction of (n)]         [Extraction of (n)] <t< th=""><th></th><th></th><th></th><th></th><th>Viaduct</th><th></th><th>START DATE: 11/1</th><th>2/96</th><th>•</th><th>BOREHOLE No: MEB-</th><th>-75P</th></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |        |            |            |             | Viaduct                                                                                                                 |                | START DATE: 11/1  | 2/96      | •              | BOREHOLE No: MEB-      | -75P                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------|------------|-------------|-------------------------------------------------------------------------------------------------------------------------|----------------|-------------------|-----------|----------------|------------------------|-----------------------------------|
| Direct and Burlow       Cerr sider-32       ELEVATION DODE (ft)       Solution in the transmission of the transmission of the transmission of the transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmission of transmissin of transmissi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |        |            | _          |             |                                                                                                                         |                | END DATE: 11/12/  | /96       | ····           | Project No: 95-1340-   | -0189                             |
| SMC2 IP: Determine CODA Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Coda Average Determine Code Code Coda Average Determine Code Code Coda Average Determine Code Code Coda Average Determine Code Code Coda Average Determine Code Code Coda Average Determine Code Code Code Code Code Code Code Cod                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |        |            |            |             |                                                                                                                         |                |                   |           |                | ELEVATION: 0.000 (ft)  |                                   |
| E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E     E <td></td> <td>SAMF</td> <td>215</td> <td>TYP</td> <td></td> <td>Split Spoon</td> <td>🔀 Hand Auge</td> <td>r E</td> <td>Drilled Casing</td> <td></td> <td>re</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | SAMF       | 215        | TYP         |                                                                                                                         | Split Spoon    | 🔀 Hand Auge       | r E       | Drilled Casing |                        | re                                |
| 0.0         a         Aspholt         PID Malfanctioning         Do           51         4         -         9 growt, dry         Auger Refuel @ 2.0 Ft         Auger Refuel @ 2.0 Ft         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ,<br>, | DEPTH (11) | AMPLE TYPE | SAMPLE NO   | A Recovery (0-1002)     20 40 80     ◆ Penetrotion (0-100)     20 40 60     ● PID Readings (0-2000 p     400 800 1200 1 | <b>♦</b><br>80 |                   |           | N              |                        | WELL<br>STALLATION<br>VATION (ft) |
| SNUC:         brown, w/ some Sit &         PtD Maltunctioning         0.0           Status:         is origination to brown, w/ some Sit &         Auger Refusel © 2.0 Ft         -5.0           -5.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -10.0         -5.0         -5.0         -5.0         -5.0           -5.0         -5.0         -5.0         -5.0         -5.0           -5.0         -5.0         -5.0         -5.0         -5.0           -5.0         -5.0         -5.0         -5.0         -5.0           -5.0         -5.0         -5.0         -5.0         -5.0           -5.0         -5.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |        |            |            |             |                                                                                                                         |                |                   |           | - ·            |                        | ELE                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |        | 0.0        |            | 1           |                                                                                                                         | SĀND;          | It brown to brow  | n, w/ son | ne Silt &      |                        | 0.0                               |
| 150     -300       200     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300       150     -300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |        | -          |            |             |                                                                                                                         | End o          | f boring @ 2.0 Ft |           |                | Auger Refusol @ 2.0 Ft |                                   |
| -15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-2 |        | -5.0       |            |             |                                                                                                                         |                |                   |           |                |                        |                                   |
| -15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-15.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-20.0<br>-2 |        | -          |            |             |                                                                                                                         |                |                   |           |                |                        |                                   |
| 15.0<br>20.0<br>20.0<br>25.0<br>1. ROBERT KIMBALL & ASSOCIATES<br>Ebensburg Pennsylvania<br>Ebensburg Pennsylvania<br>Ebensburg Pennsylvania                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |        | 10.0       |            |             |                                                                                                                         |                |                   |           |                |                        |                                   |
| 20.0<br>20.0<br>20.0<br>25.0<br>L. ROBERT KIMBALL & ASSOCIATES<br>Ebensburg Pennsylvania<br>LOCCED BY: MOB<br>REVIEWD BY: JWD<br>COMPLETION DEPTH: 2.0 ft<br>REVIEWD BY: JWD<br>COMPLETION DEPTH: 2.0 ft<br>REVIEWD BY: JWD<br>COMPLETION DEPTH: 2.0 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | · . I  | _          |            |             |                                                                                                                         |                |                   |           |                |                        | -10.0                             |
| 20.0<br>20.0<br>20.0<br>25.0<br>L. ROBERT KIMBALL & ASSOCIATES<br>Ebensburg Pennsylvania<br>LOCCED BY: MOB<br>REVIEWD BY: JWD<br>COMPLETION DEPTH: 2.0 ft<br>REVIEWD BY: JWD<br>COMPLETION DEPTH: 2.0 ft<br>REVIEWD BY: JWD<br>COMPLETION DEPTH: 2.0 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |        | -          |            |             |                                                                                                                         |                |                   |           |                |                        |                                   |
| 25.0<br>L. ROBERT KIMBALL & ASSOCIATES<br>Ebensburg Pennsylvania<br>LOGGED BY: MDB<br>COMPLETION DEPTH: 2.0 ft<br>REVIEWED BY: JWD<br>COMPLETE: 11/12/96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        | 15.0       |            |             |                                                                                                                         |                |                   |           |                |                        | - 15.0                            |
| 25.0<br>L. ROBERT KIMBALL & ASSOCIATES<br>Ebensburg Pennsylvania<br>LOGGED BY: MDB<br>COMPLETION DEPTH: 2.0 ft<br>REVIEWED BY: JWD<br>COMPLETE: 11/12/96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        |            |            |             |                                                                                                                         |                |                   |           |                |                        |                                   |
| L. ROBERT KIMBALL & ASSOCIATES LOGGED BY: MOB COMPLETION DEPTH: 2.0 ft<br>Ebensburg Pennsylvania                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | · -    | 20.0       |            |             |                                                                                                                         |                |                   |           |                |                        | -20.0                             |
| L. RUBERT KIMBALL & ASSOCIATES<br>Ebensburg Pennsylvania<br>Ebensburg Pennsylvania<br>Ebensburg Pennsylvania                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2      |            |            |             |                                                                                                                         |                |                   |           |                |                        |                                   |
| Ebensburg Pennsylvania COMPLET: 11/12/96                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |        | L          | . I        | <u>20</u> ] | BERT KIMBALI                                                                                                            | & ASS          | CIATES            |           |                | COMPLETION DEPTH: 2.0  | ft                                |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | L      |            |            |             | Ebensburg, Per                                                                                                          | nnsylvania     |                   |           | ST: JWU        |                        |                                   |

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| Canyon<br>Canyon and Environmental Services Inc                                   |                                                                   |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Engineering and Environmental Services, Inc.                                      | <u>S-3</u> SHEET 1 OF <u>3</u>                                    |
| FET PSEAG FRONT STREET SITE                                                       | PROJECT NO. 1406602                                               |
| ATION NEWARK, NEW JERSEY                                                          | ELEVATION AND DATUM                                               |
| LINGAGENCY JERSEY DRILLING& BORING                                                | DATE STARTED DATE FINISHED<br>2 SEPJETIGER 1997 2 SEPJETIBER 1997 |
| INGEOUIPMENT ACKER AD-2                                                           | COMPLETION DEPTH 39.5 FT.                                         |
| AND TYPE OF BIT 215/K & 37/8 IN. TRICONE ROLLOR BITS                              | NO. SAMPLES DIST. 15 UNDIST CORE 10 Pr.                           |
| ING 41213 FLUSH STEEL CASING<br>NGHAMMER WEIGHT 14215 DROP 3012.                  | FOREMAN DOMINIC PEPE                                              |
| PLER ZINCH O.D. SPLIT SPUN/NX CORE BARREL<br>PLER HAMMER WEIGHT 140/55 DROP 3012. | INSPECTOR FD ZOFCHAK                                              |
|                                                                                   | SAMPLES                                                           |
| SAMPLE DESCRIPTION                                                                | DRILLING FLUID. DEPTH OF CASING.                                  |
| FILL dry to must<br>Dark Brown field AND, trace silt                              | 6 Han Buckground = 1ppm STATES 8:39                               |
| Crished coal fragment                                                             | 55 10 4 Greatinal checks and slag                                 |
| Hedium Gay Brown F-c SAND, trace silt = 2                                         | 1 Hynu=Oppm                                                       |
| FILL: most<br>Brown Gray f-c SAND, trace silt, trace = =                          | 3 Occasional pieces of slag and 0.11                              |
| fire grand = 3 = 2                                                                | 1 1 002                                                           |
| in. Dk. Gran Black cinder layer = =                                               | 55 3 4 2/4 in piece of wood timber in<br>sampler neve             |
| FILL: most to wet                                                                 | 4 Uccasional brick and rock 9:02                                  |
| Dark Brown Gray f-c SAND, trace to some = = = = = = = = = = = = = = = = = = =     | 58 8 4 fragments: crushed cikders and<br>contract tragments       |
| Orange brown fre SAND, some sitt _ E ==                                           |                                                                   |
| FILL : Let                                                                        | 2 Hm = Opm                                                        |
| Some f-m gravel trace sittin - 7 - 4                                              | 55 15 4                                                           |
|                                                                                   |                                                                   |
| FILL: Wet                                                                         | + Hmu=Oppm                                                        |
| brown Gran fie SAND true to some sitt, = = = = = = = = = = = = = = = = = =        | 9:21                                                              |
|                                                                                   | <sup>55</sup> 5 3                                                 |
| Red Brown c-F JANO, tr. silt, tr. f. grandland 10-                                | 3 Ignu = Oppm                                                     |
| Dark Reddish Brown f. SALD trace to = =                                           | 3 Occusional rule-fragments; pode5                                |
| Some silt, trace. clay, trace, f-m gravel = 11-6                                  | - 13 Eight out shelp also have in anythe                          |
|                                                                                   | 2 Home=Oppon                                                      |
| Red Brown f-c SAND, some silt, trace                                              | 9:35<br>5 Light uily othern absendin                              |
| chang (wet)                                                                       | SS 6 6 Sample                                                     |
|                                                                                   | 3                                                                 |
| PUSSible SILS or CLAY Layer = =                                                   | Hyme=.1ppm                                                        |

TIERRA-B-018274

Engineering and Environmental Services, Inc.

| JOB              | NO1406602                                                                                                                                                        | <u></u>        | T        | L        | DG       | OF                           | BORING NO. 5-3                                                                                                                                                                           |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------|----------|----------|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                  | = <u>2.5000000000000000000000000000000000000</u>                                                                                                                 |                | L        |          | •        |                              | SHEET 2 OF 3                                                                                                                                                                             |
| CASING           | SAMPLE DESCRIPTION                                                                                                                                               | DEPTH<br>SCALE | NO.LOC.  | È.       | 1        | PENETA.<br>RESIST<br>BLOBIN. | REMARKS<br>(ORILLING FLUID, DEPTH OF CASING,<br>CASING BLOWS, FLUID LOSS, ETC.)                                                                                                          |
|                  | Passible SILI or CLAY Lager                                                                                                                                      | 5              | ¥        | শ্র      | <b>к</b> | )<br>WR<br>1                 |                                                                                                                                                                                          |
|                  | -Dark Brown f-c Starlo, trace to some silt,<br>trace fine graved (wed)                                                                                           | - 16-          | J        | শ        | 6        | 1<br>6<br>4<br>2             |                                                                                                                                                                                          |
|                  | Reddish Brown and Gray f-c SAND,<br>some silt, trace f. gravel<br>Brownish Gray organic clanger JILT,                                                            |                |          | Z        |          | лн<br>лн<br>мн<br>1          | lgnu=Oppn                                                                                                                                                                                |
| חד דר            | trace fine solid, trace organic particles<br>Nedium Grun finely laminuted organic<br>Clayer SILT, trace fire sond, trace<br>fire organic particles (muist tened) | 20             | 11<br>98 | <u> </u> |          | Nit                          | How Oppon<br>10:20<br>Slight Organic oder                                                                                                                                                |
|                  | Medium Brownish Gay finely laminated<br>organic layer SILT, trace fine sand (moust)                                                                              | 23             | <br>12   | 55       | ಖ        | 1 6 5 8                      | Idnur Oppm<br>Slight Urganic odur                                                                                                                                                        |
| -<br>-<br>-<br>- | GLOUAL TILL: Muist to wet<br>Red Brown F-C JADO, Mue N some sitt<br>TINGUR -2                                                                                    | -24-           | 3 :      | 551      |          | 21<br>17                     | lynu = Oppm<br>Vertical/ new vertical piece of<br>timber with cressie odor<br>Half of split spun (vertical) contained<br>timber, with glacial till makerial in other<br>half of sampler. |
| E                | DECUMPOSED SILTSFULC BEDRUUC: dry<br>Red Brown C-F SAND, some rm-f gravel,<br>true to sume clayer wilt                                                           | -26            | 4 1      | 3 10     | 5        | 75<br>57<br>1/24             | How = Opp m<br>Black villy product observed villing<br>fissile field framments<br>How = 4 ppm<br>Rouge BT TO 20 PT DOOTH                                                                 |
| į 1              | Red Brown for GRAVER and C-FSMP, true                                                                                                                            | -28            | 5 1      | 5 12     | 2        | 44<br>103                    |                                                                                                                                                                                          |
| нЕ               | SEE ATTACHED PAGES FUR LOG<br>OF BLEDAUCK CORE                                                                                                                   | -29-1"         |          |          | <u>^</u> | 出                            |                                                                                                                                                                                          |
| 1                |                                                                                                                                                                  |                |          |          |          |                              |                                                                                                                                                                                          |

Langan Engineering and Environmental Services, Inc.

| JOB N                                                                                    | 10. 1406602                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |             |                | L           | _0      | G                                                              | 01                | - 1                                                    | 30                                    | RI  | NG                | 5 1              | 10                                                    | 5-3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |
|------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|-------------|---------|----------------------------------------------------------------|-------------------|--------------------------------------------------------|---------------------------------------|-----|-------------------|------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| `                                                                                        | 2 SEPTEMBER 1997                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                |             |         |                                                                |                   |                                                        |                                       | SHE | ΞĒ٦               | ſ                | 3                                                     | _ OF <u>3</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
|                                                                                          | SAMPLE DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | FIE COMETER | DEPTH<br>SCALE | H0.LOC.     | TYPE    |                                                                | MENETR.<br>REDIET | A 0D. X                                                | B BNIDDINE                            |     | CONO.             | 41H14<br>• 1 H14 | (414)                                                 | REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |
| D                                                                                        | DECOMPOSED SILSTICUE BODACK -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |             |                |             |         |                                                                |                   |                                                        |                                       |     |                   | ļ                |                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |
| 2.2.5 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2                                              | ILLISTUNE; fine-grained with occasimal<br>ery fine to medium gruined Layers/lenes;<br>ruing are rounded to subround ed where<br>noible to the eye; rock is generally<br>undeneous blacky to firely laminuked<br>illistone interbedded with 44 bit inch<br>wick shally and fine to medium - grained<br>and stree-layers. At least part of the rack<br>netrix is compased of calcite cement.<br>accusional to frequent light gray to green of<br>the fine hold was and obland chois<br>barved down length of recevered core,<br>log with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with a frequent 14 by 12 inco thek<br>with infrequent 14 by 12 inco thek<br>with a frequent 14 by 1 and sporatically<br>thoug, with slight to moderate overall<br>to a calcionally low hundressis is moderated<br>to a calcionally low hundressis is moderated<br>to a calcional low hundressis is moderated<br>to a calcional isolated think<br>in the ger 11 calcing the core. Care is<br>osely frechered (1 h 6 h) with builted think<br>tosely frechered (1 h 6 h |             |                | RUN#2 RUNH1 | NX CORE | REC 5414 76012 × 100 2 70 × 10 × 10 × 10 × 10 × 10 × 10 × 10 × |                   | 190=28.51 +601 × 1W6=47.54 AQ0=101- +601-× 1008 =16.62 | · · · · · · · · · · · · · · · · · · · |     | دی<br>ح<br>د<br>د | CJ<br>G          | 00: 6 00: 81 00: 22 00: 57 00: 60: 6 00: 01 00:11 00: | Curbonale Zne uj<br>misis capar micral<br>120 hm il fin sace<br>30 micros JO.S D<br>JO. 4 Ht.<br>Rubbi Shal Zone<br>33 Fr 33.4 ft<br>Soding carbonaie<br>Think Jaminet<br>Shall laminetur<br>Shall laminetur<br>Shall laminetur<br>Shall laminetur<br>Shall laminetur<br>and 36. 151. daptas<br>Minor caparturuntur<br>Zha et 37.7 ft.<br>Frequent sasting light<br>Stag carbonate nodels<br>Think such lagers<br>and 38. B A. U.F.<br>Minor curbonate<br>at 38. B A. U.F.<br>Minor curbonate<br>at 38. B A. U.F.<br>Minor curbonate<br>Andre Curbonate |     |
| ENV<br>TRO<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN<br>IN | TTUM OF BORNAG 39.5 Fr<br>VIRONMENTEL NUTES:<br>attaul-like maghthalene oder detectul<br>tracture 2mar in recovered core. How<br>dings in Run #1 ranged between 15 and<br>pom and between D and 20 ppm, with<br>hom of the cole, in Run #2. Oder dis-<br>citul quickly when core exposed to the<br>and it mu techings deped to back-<br>ound levels. How rectings where primarily<br>served in the sendy or shall zong Within<br>Silts the betwee of in areas with more<br>contracted corbunate 1 hydrows copper.<br>TE:<br>UNG OF GEDTEUNNICAL BORNESS COMPLETET<br>GANNETT REDING AS PART OF A<br>DUR OF GEDTEUNNICAL BORNESS COMPLETET<br>GANNETT REDING AS RAKT OF A<br>B. OF ENGNETERS RELATING TO MY RESCO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |             |                |             |         |                                                                |                   |                                                        |                                       |     |                   |                  |                                                       | ۲IERRA-B-0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 182 |

| Project N  | Vam      | e              | · · · · ·    | PSE8     | G Former Front Street G                          | as Works Site     | Projec                                 | t No.     | Sheet 1<br>140660 |                |
|------------|----------|----------------|--------------|----------|--------------------------------------------------|-------------------|----------------------------------------|-----------|-------------------|----------------|
| Boring L   |          |                | <u></u>      |          | rk, New Jersey                                   |                   | Elevat                                 | ion and   | d Datum           | 37.09          |
| Drilling ( |          |                |              | CT&E     | <b>Environmental Services</b>                    | , inc.            | Date S                                 | started   |                   | Date Finis     |
| Drilling E | Equi     | pmen           | t            | Mobil    | e Drill B-80                                     |                   | 1                                      | 9/        | /23/97            | 9/23/9         |
| Size and   | Тур      | e of           | Bit          | 4-1/4    | 1.D. Hollow Stem Auger                           |                   | Comp                                   | letion D  | )epth             | Rock Dept      |
| Casing     |          |                |              |          |                                                  |                   |                                        | 26 ft     |                   | Not Encour     |
| Casing F   | lamr     | ner            | Weigh        | it       | Drop                                             |                   | Water                                  | Level     | Not Enc           | ountered       |
| Sampler    |          |                | 18           | 2" O.I   | D. Split Spoon                                   |                   | Driller                                |           | K. Mike           | Millican       |
| Sampler    | Нап      | ımer '         | Weight       |          | 140 lb Drop                                      | 30"               | inspec                                 | tor       | Ed Zofc           | hak            |
| Depth      | s        | Туре           | Recov.       | SPT*     | DESCR                                            |                   |                                        |           | REMAR             | IKS            |
| (ft)       | <u> </u> | <u> </u>       | <b>(fi</b> ) | P1/6.    |                                                  | <u> </u>          |                                        |           |                   |                |
| -          |          | 1 ~~~          |              |          | ASPHALT                                          |                   |                                        | Start 8:  |                   | ,<br>holt      |
| 1          | ]S-1     | SS             | 0.8          | 14       | Red brown m-f SAND, t                            |                   |                                        |           | hrough asp        | onalt          |
| ~          | 1        | 1              | 1            | 10       | c sand and m-f gravel, c                         |                   | ind                                    | FID = 0   | . i ppm           |                |
| 2_         |          |                | <u> </u>     | 16       | concrete fragments [FI                           |                   |                                        |           |                   |                |
| 3          | <br> S-2 | ss             | 1.0          | 9<br>8   | Red brown m-f SAND, to                           |                   |                                        | FID = 0   | 2 000             |                |
| 3          | 5-2      | 55             | 1.0          |          | c sand and m-f gravel, c                         |                   |                                        | FID = 0   | .2 ppm            |                |
| 4          |          | 1              | Į .          | 8<br>15  | and ceramic fragments<br>Red brown c-f SAND, tra | [FILL] (dry)      | '                                      | Rock fr   | anment in t       | tip of spoon   |
|            |          |                | <u> </u>     | 20       | gravel, occasional rock f                        |                   | ł                                      | Auger to  | -                 | nh or shoon    |
| 5          | S-3      | ss             | 0.7          | 14       | [FILL]                                           | (dry-moist)       |                                        | -         | rinding at        | 4 feet         |
|            |          |                | 0.1          | 10       | Red brown c-f SAND, tra                          |                   |                                        | FID = .4  | -                 |                |
| 6          |          |                |              | 9        | c-f gravel [FILL]                                | (dry-moist)       | -                                      |           | · ~~··            |                |
|            |          |                | İ            | 55       | Brown - Gray - Yellow c                          |                   | ilt I                                  |           |                   |                |
| 7          | S-4      | ss             | 0.8          |          | and f gravel, occas. pebl                        |                   |                                        |           |                   |                |
|            | · ·      |                | ]            |          | Pulverized CONCRETE                              |                   |                                        |           |                   |                |
| 8          |          |                | ł            |          | Lt. Gray - Gray m-f SAN                          |                   |                                        | Auger to  | o 8 feet          |                |
|            |          |                |              | 11       | Gray - Red brown c-m G                           |                   |                                        | <b>J</b>  |                   |                |
| 9          | S-5      | SS             | 0.6          | 62       | sand and f gravel, trsor                         |                   |                                        |           |                   |                |
|            |          |                | .            | 36       | ASPHALT                                          |                   |                                        |           |                   |                |
| 10         |          |                |              | 17       | Red brown m-f SAND, tr                           | ace-some silt, tr | ace                                    | Rock in   | tip of spoo       | n              |
|            |          |                |              | 100/3"   | c sand and f gravel                              |                   | 4                                      | Auger to  | o 10 feet         |                |
| 11         | S-6      | SS             | 0.3          |          |                                                  | -                 |                                        |           |                   |                |
|            |          |                |              |          | BOULDERS/COBBLES                                 |                   | II II II II II II II II II II II II II | Auger gr  | -                 |                |
| 12         |          |                |              |          | [FILL]                                           | (dry)             | 1                                      |           | o 12 feet         |                |
| _          |          |                |              |          | Gray - Red brown m-f SA                          |                   | ec  f                                  | -1D = 0.3 | 3-3 ppm           |                |
| 13         | S-7      | SS             | 0.3          |          | sand and f gravel, trace :                       |                   |                                        |           | <b>.</b>          |                |
|            |          |                |              |          | BASALT COBBLES/BOL                               |                   |                                        |           | -                 | n 12 to 14 fee |
| 14         |          | [              |              |          | [FILL]                                           | (dry)             |                                        | Auger to  | 14 feet           |                |
|            |          |                | .            |          | Red brown c-f SAND, so                           | -                 |                                        |           | <b>5 n</b> n      |                |
| 15         | S-8      | SS             | 1.1          |          | silt, occasional rock fragr                      |                   | l⁺                                     | TD = 0.5  | o ppm             |                |
| 16         |          | ·              |              | 40       | [FILL]                                           | <b>(</b> dry)     | 1                                      |           |                   |                |
| 10         |          |                |              | . 25     | Dod brown & FRAND                                |                   |                                        |           |                   |                |
| 17         | 5-9      | ss             | 1.0          |          | Red brown c-f SAND and                           | -                 |                                        |           | 2 000             |                |
|            | 5-9      | 22             | 1.0          |          | silt, occasional rock and o                      | -                 | nis  F                                 | ID = 0.3  | s hhui            |                |
| 18         |          |                | ~ .          | 35<br>30 | [FILL]                                           | (dry)             |                                        | unarta    | 18 foot           |                |
| - 10       |          |                |              |          | Pad brown a f CAND and                           |                   |                                        | uger to   | 18 feet           |                |
| 19         | s-       | ss             |              |          | Red brown c-f SAND and                           |                   |                                        | - 0 -     | 200               |                |
|            | 5-<br>10 | 33             | 0.5          |          | silt, occasional rock fragm                      |                   |                                        | 1D = 0 p  | nhu               |                |
| 20         |          |                |              | 35       | [FILL]                                           | (dry)             |                                        | ugarte    | 20 fact           |                |
|            |          | <del>.  </del> |              | 60       |                                                  |                   | ~                                      | uger to   | zv ieel           |                |
| Standard F | <u> </u> |                |              |          | LANGAN                                           |                   | 1                                      | ·         |                   |                |

|             |          |       |          |          | LOG OF BORING NO: B-1                                    |       | Sheet 2 of           | 2                                     |
|-------------|----------|-------|----------|----------|----------------------------------------------------------|-------|----------------------|---------------------------------------|
| Project N   | ame      |       |          | PSE&     |                                                          | Proj  | ect No. 1406602      |                                       |
| Boring L    |          |       |          |          | k, New Jersey                                            | Date  |                      | ate Finished                          |
| Drilling C  |          |       |          |          | Environmental Services, Inc.                             | ]     | 9/23/97              | 9/23/97                               |
| Depth       | ۰s       |       | Recov.   | SPT      | DESCRIPTION                                              |       | REMARKS              | ;<br>;                                |
| <u>(ft)</u> |          |       | (ft)     | bl/6"    |                                                          |       |                      |                                       |
| _           |          |       | 1        | WR       | Red brown f SAND, trace-some silt                        |       |                      |                                       |
| 21          | S٠       | SS    | 1.3      | WR       | [SM] (dry-wet)                                           |       | FID = 0.3 ppm        |                                       |
|             | 11       |       |          | 9        | Clayey SILT [ML]                                         |       |                      |                                       |
| 22          |          |       | ļ        | 14       | Red brown m-f SAND, trace-some silt, t                   | race  |                      |                                       |
| -           |          |       |          | 35       | c sand and f gravel [SM-SP]                              | 240   |                      |                                       |
| 23          | S-       | SS    | 1.3      | 27-      | Red brown c-f SAND, trace silt and f gra<br>[SP] (moist) | dvei  |                      |                                       |
|             | 12       |       |          | 15       | [SP] (moist)<br>Red brown m-f SAND, trace silt [SP]      | 1     | Auger to 24 feet     |                                       |
| 24          |          |       | <u> </u> | 21<br>11 | Red brown m-f SAND, trace silt and c s                   | -     |                      | 1                                     |
|             | S-       | SS    | 1.5      | 11       | [SP] (moist)                                             |       | FID = 0 ppm          |                                       |
| 25          | S-<br>13 | 33    | G.1      | 13       |                                                          |       |                      | · · · · · · · · · · · · · · · · · · · |
| 26          | 13       |       |          | 17       |                                                          |       |                      |                                       |
|             |          |       | <b> </b> | 1        | Boring completed at 26 feet                              |       | End 11:07            |                                       |
| 27          |          |       |          |          |                                                          |       |                      |                                       |
|             |          |       |          |          |                                                          |       |                      |                                       |
| 28          |          |       |          | :        |                                                          |       |                      |                                       |
|             |          |       |          |          |                                                          |       |                      |                                       |
| 29          |          |       |          |          |                                                          |       |                      |                                       |
|             | 1        |       |          |          |                                                          |       |                      |                                       |
| 30          | İ        |       |          |          |                                                          |       |                      | 10 A                                  |
|             |          |       |          |          |                                                          |       |                      | I. € 100                              |
| 31          | 1        |       |          |          |                                                          |       |                      | ł                                     |
|             |          |       |          |          |                                                          |       |                      |                                       |
| 32          |          |       |          | 1        |                                                          |       |                      |                                       |
| _           |          |       |          | 1        |                                                          |       |                      |                                       |
| 33          |          |       |          |          | _                                                        |       |                      |                                       |
| -           |          |       |          |          |                                                          |       |                      | · · · ·                               |
| 34          |          |       |          |          |                                                          |       |                      |                                       |
|             |          |       | ł        |          |                                                          |       |                      |                                       |
| 35          |          |       | ļ        |          |                                                          |       |                      | i                                     |
|             |          |       |          | 1        |                                                          |       |                      | 1                                     |
| 36          |          |       |          |          |                                                          |       |                      |                                       |
|             |          |       |          | i        |                                                          |       |                      |                                       |
| 37          |          |       |          |          |                                                          |       |                      |                                       |
|             |          | l     |          |          | 1                                                        |       |                      |                                       |
| 38          |          |       |          |          |                                                          |       |                      | 1                                     |
|             |          |       |          |          | 1                                                        |       |                      | . 1                                   |
| 39          |          |       |          | -        |                                                          |       |                      | 4                                     |
| 40-         |          |       |          | 1        |                                                          |       |                      |                                       |
| 40          |          |       | ŀ        |          | 1                                                        |       |                      |                                       |
|             |          | •     | ~        |          |                                                          |       |                      |                                       |
| 41          |          |       |          | 1        | Į                                                        |       |                      |                                       |
| 40-         |          |       | ł        | 1        | 1                                                        |       |                      | ł                                     |
| 42          |          | •     |          | -        |                                                          |       |                      | ı                                     |
| • C         |          |       |          |          | e LANGAN Engineering a                                   | and F | nvironmental Service | s. Inc.                               |
| *Standard   | ren      | eranc | on rest  | in-valu  | River Drive Cente                                        | or 1  | Elmwood Park, NJ 07  | 407                                   |
| <u> </u>    |          |       |          |          |                                                          |       |                      | ······                                |

| nmer V                      | y<br>ent<br>f Bit<br>Weigh<br>er Weight<br>rpe Recov.<br>(ft) | CT&E<br>Mobile<br>4-1/4"<br><br>t<br>2" O.D | k, New Jersey<br>Environmental Services, Ir<br>Drill B-80<br>1.D. Hollow Stem Auger<br>Drop<br>0. Split Spoon<br>140 lb Drop<br>DESCRIP | NC.                                                                                                                                                                                                   | Elevation and<br>Date Started<br>9/2<br>Completion D<br>28 ft<br>Water Level<br>Driller<br>Inspector                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25/97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------|---------------------------------------------------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ner<br>Type<br>SS           | ent<br>f Bit<br>Weigh<br>er Weight<br>rpe Recov.<br>(ft)      | Mobile<br>4-1/4"<br><br>t<br>2" O.D<br>spT* | Drill B-80<br>I.D. Hollow Stem Auger<br>Drop<br>Split Spoon<br>140 lb Drop                                                              |                                                                                                                                                                                                       | 9/2<br>Completion D<br>28 ft<br>Water Level<br>Driller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | epth<br>~ 27 ft<br>K. Mike I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 9/25/97<br>Rock Depth<br>Not Encounte                                                                                                                                                                                                                                                                                                                     |
| e of E<br>ner<br>Type<br>SS | f Bit<br>Weigh<br>er Weight<br>rpe Recov.<br>(ft)             | 4-1/4"<br><br>t<br>2" O.D<br>SPT*           | 1.D. Hollow Stem Auger<br>Drop<br>D. Split Spoon<br>140 lb Drop                                                                         |                                                                                                                                                                                                       | Completion D<br>28 ft<br>Water Level<br>Driller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | epth<br>~ 27 ft<br>K. Mike I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Rock Depth<br>Not Encounte                                                                                                                                                                                                                                                                                                                                |
| ner<br>Type<br>SS           | Weigh<br>er Weight<br>pe Recov.<br>(ft)                       | t<br>2" O.D<br>SPT*                         | Drop<br>D. Split Spoon<br>140 lb Drop                                                                                                   |                                                                                                                                                                                                       | 28 ft<br>Water Level<br>Driller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ~ 27 ft<br>K. Mike I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Not Encounte                                                                                                                                                                                                                                                                                                                                              |
| Type<br>SS                  | er Weight<br>/pe Recov.<br>(fi)                               | 2" O.D                                      | 0. Split Spoon<br>140 lb Drop                                                                                                           |                                                                                                                                                                                                       | Water Level<br>Driller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | K. Mike I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Millican                                                                                                                                                                                                                                                                                                                                                  |
| Type<br>SS                  | er Weight<br>/pe Recov.<br>(fi)                               | 2" O.D                                      | 0. Split Spoon<br>140 lb Drop                                                                                                           |                                                                                                                                                                                                       | Driller                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | K. Mike I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                           |
| Type<br>SS                  | /pe Recov.<br>(fl)                                            | SPT*                                        | 140 lb Drop                                                                                                                             | h                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| Type<br>SS                  | /pe Recov.<br>(fl)                                            | SPT⁺                                        | 1                                                                                                                                       | 30                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | eelman                                                                                                                                                                                                                                                                                                                                                    |
| SS                          | ·(ft) <sup>-</sup>                                            |                                             | DESCRIP                                                                                                                                 |                                                                                                                                                                                                       | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             | 1                                                                                                                                       | TION                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | REMAR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | KS                                                                                                                                                                                                                                                                                                                                                        |
|                             | S 0.5                                                         | ·                                           | ASPHALT                                                                                                                                 |                                                                                                                                                                                                       | Start 7:4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 45                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 3                                           | Brown f sandy SILT, trace                                                                                                               | clay and f gra                                                                                                                                                                                        | vel Auger th                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | hrough asp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ohalt                                                                                                                                                                                                                                                                                                                                                     |
| SS                          |                                                               | 6                                           | Reddish brown silty f SAN                                                                                                               |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          |                                                               | 12                                          | [FILL]                                                                                                                                  | (moist)                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          |                                                               | 10                                          | Reddish brown silty f SAN                                                                                                               | • •                                                                                                                                                                                                   | nd                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             | S 0.8                                                         | 7                                           | c-f gravel, occasional brick                                                                                                            |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                           |
| <u> </u>                    |                                                               | 5                                           | coal tar                                                                                                                                | -                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| +                           |                                                               | 8                                           | [FILL]                                                                                                                                  | (moist)                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | tip of spoo                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | n                                                                                                                                                                                                                                                                                                                                                         |
| 1                           |                                                               | 25                                          | 1                                                                                                                                       |                                                                                                                                                                                                       | Auger to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | S NR                                                          | 100/5"                                      |                                                                                                                                         | •                                                                                                                                                                                                     | Refusal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             | , I                                                           |                                             |                                                                                                                                         |                                                                                                                                                                                                       | I                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ts in tip of spoo                                                                                                                                                                                                                                                                                                                                         |
|                             |                                                               |                                             |                                                                                                                                         |                                                                                                                                                                                                       | Auger to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | o 6 feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 15                                          | Reddish brown silty f SAN                                                                                                               |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | S 0.1                                                         | 20                                          | [FILL]                                                                                                                                  | (moist)                                                                                                                                                                                               | FID = 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 10                                          | •                                                                                                                                       |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 12                                          |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 11                                          |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | e fragments and                                                                                                                                                                                                                                                                                                                                           |
| SS                          | S NR                                                          | 41                                          |                                                                                                                                         |                                                                                                                                                                                                       | coal tar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | in tip of sp                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | юоп                                                                                                                                                                                                                                                                                                                                                       |
|                             |                                                               | 15                                          |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 15                                          | _                                                                                                                                       |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | o 10 feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | •                                           | Reddish brown m-f SAND,                                                                                                                 |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | S 0.2                                                         |                                             | clay, occasional concrete I                                                                                                             |                                                                                                                                                                                                       | FID = 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | *                                                                                                                                                                                                                                                                                                                                                         |
|                             |                                                               | 12                                          | (FILL)                                                                                                                                  | (moist)                                                                                                                                                                                               | ĺ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 10                                          |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 100/3"                                      | Black c GRAVEL                                                                                                                          | / · · · · · · ·                                                                                                                                                                                       | FID = 35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | S 0.1                                                         |                                             | [FILL]                                                                                                                                  | (moist)                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | e in tip of s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             |                                                                                                                                         | Ann a a th                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 14166                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5 000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | S   1.1                                                       |                                             | <b>v</b> .                                                                                                                              | -                                                                                                                                                                                                     | FID = 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | a hhiir                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             | [HILL]                                                                                                                                  | (ary)                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             |                                                                                                                                         |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | 5 1.3                                                         |                                             | •                                                                                                                                       | -                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | hhiti                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |
|                             | ~                                                             |                                             |                                                                                                                                         | the second second second second second second second second second second second second second second second s                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 40 Incl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             |                                                                                                                                         |                                                                                                                                                                                                       | ay Auger to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | i no leel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               |                                             | -                                                                                                                                       |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                           |
| SS                          | 5 1.5                                                         |                                             |                                                                                                                                         | (moist-wet)                                                                                                                                                                                           | 15 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | p hbui                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                           |
| . 1                         |                                                               |                                             | -                                                                                                                                       | -                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                           |
|                             |                                                               | 6                                           | Reddish brown silty f SAN                                                                                                               | U                                                                                                                                                                                                     | 15   10 = 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | n hbu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                           |
|                             | S                                                             | SS 1.5                                      | SS 1.1 18<br>22<br>22<br>22<br>SS 1.3 22<br>33<br>2<br>22<br>SS 1.5 9<br>SS 1.5 10<br>8                                                 | SS1.118gravel, occasional brick fra22[FILL]222221Reddish brown m-f SAND,SS1.322gravel, occasional brick fra33[FILL]2224Reddish brown silty f SAN251.5108Black silty f SAND6Reddish brown silty f SANI | SS       1.1       18       gravel, occasional brick fragments         22       [FILL]       (dry)         22       22          SS       1.3       22       gravel, occasional brick fragments         33       [FILL]       (dry)         22       Reddish brown m-f SAND, trace silt and gravel, occasional brick fragments         33       [FILL]       (dry)         22       Reddish brown silty f SAND, pockets of or         SS       1.5       10       [SM]         SS       1.5       10       [SM]         Black silty f SAND       6       Reddish brown silty f SAND | Auger toSS1.115Reddish brown m-f SAND, trace silt and c-fFID = 2.22[FILL](dry)222222[FILL](dry)22222233[FILL](dry)24Reddish brown m-f SAND, trace silt and c-fFID = 033[FILL](dry)22Reddish brown silty f SAND, pockets of clayAuger to33[FILL](dry)22Reddish brown silty f SAND, pockets of clayAuger to351.510[SM](moist-wet)8Black silty f SANDFID = 158Black silty f SANDFID = 159Reddish brown silty f SANDFID = 159Black silty f SANDFID = 159Reddish brown silty f SANDFID = 159Black silty f SANDFID = 159Reddish brown silty f SANDFID = 1510[SM](moist-wet)10[SM]fill = 1510Reddish brown silty f SANDFID = 1510[SM](moist-wet)10Reddish brown silty f SANDFID = 15101010101010101010101010101010101010101010101010101010101010101010< | SS1.118gravel, occasional brick fragmentsFID = 2.5 ppm22[FILL](dry)2221Reddish brown m-f SAND, trace silt and c-fFID = 0 ppmSS1.322gravel, occasional brick fragmentsFID = 0 ppm33[FILL](dry)2224Reddish brown silty f SAND, pockets of clayAuger to 18 feetSS1.510[SM](moist-wet)8Black silty f SANDFID = 15 ppm6Reddish brown silty f SANDFID = 150 ppm |

| <sup>2</sup> roject N | ame        |      |          | PSE&(         |                                                              | Project |                  |               |
|-----------------------|------------|------|----------|---------------|--------------------------------------------------------------|---------|------------------|---------------|
| 3oring L              |            |      |          |               |                                                              | Date St |                  | Date Finished |
| Orilling C            | omp        | апу  | T        | CT&E          | Environmental Services, Inc.                                 |         | 9/25/97          | 9/25/97       |
| Depth -               | ۰s         | Type | Recov.   | SPT           | DESCRIPTION                                                  |         | REMAR            | KS            |
| (ft)                  |            |      | (ft)     | Ы/6 <b>''</b> |                                                              |         |                  |               |
|                       |            |      |          | 22            | Reddish brown silty f SAND, occasional                       |         | Auger to 20 feet |               |
| 21                    | S-         | SS   | 0.6      | 100/2"        | rock fragments [SM] (moist)                                  |         | FID = 0 ppm      |               |
| 22                    | 11         |      |          |               |                                                              | CL)     | Auger to 22 feet |               |
|                       |            |      |          | 12            | Reddish brown silty f SAND                                   |         |                  |               |
| 23                    | S-         | SS   | 1.6      | 28            | [SM] (dry-moist)                                             |         | FID = 0 ppm      |               |
|                       | 12         |      |          | 45            |                                                              |         | Augerte 24 feat  |               |
| 24                    |            |      | <b> </b> | 60            | Deddich brown silty f SAND pockats of c                      | r i     | Auger to 24 feet |               |
| 25                    | S-         | SS   | 2.0      | 25<br>31      | Reddish brown silty f SAND, pockets of c<br>[SM] (dry-moist) |         | FID = 0-4 ppm    |               |
| 2                     | - 3-<br>13 | 33   | 2.0      | 32            |                                                              |         |                  |               |
| 26                    |            |      |          | 28            |                                                              |         |                  |               |
|                       |            |      |          | 20            | Reddish brown silty f SAND, pockets of c                     | lay     |                  |               |
| 27                    | S-         | SS   | 1.4      | 25            | [SM] (dry-moist)                                             |         | FID = 0 ppm      |               |
|                       | 14         |      |          | 31            | Reddish brown f SAND, trace silt                             |         |                  |               |
| 28                    |            |      |          | 30            | [SP] (wet)                                                   |         |                  |               |
|                       |            |      |          |               | Boring completed at 28 feet                                  |         | End 9:20         |               |
| 29                    |            |      |          |               |                                                              |         |                  |               |
|                       |            |      |          |               |                                                              | ł       |                  |               |
| 30                    |            |      |          |               |                                                              |         |                  |               |
| 31                    |            |      |          |               |                                                              |         |                  |               |
|                       |            |      |          |               |                                                              | l       |                  |               |
| 32                    |            |      |          |               |                                                              |         |                  |               |
|                       |            |      |          |               | · · · · · · · · · · · · · · · · · · ·                        |         |                  |               |
| 33                    |            |      |          |               | -                                                            |         |                  |               |
| 34                    |            |      |          |               |                                                              |         |                  |               |
| 35                    |            |      |          |               |                                                              |         |                  |               |
|                       |            |      |          |               |                                                              |         |                  |               |
| 36                    |            |      |          |               |                                                              |         |                  |               |
| 37                    |            |      |          |               |                                                              |         |                  |               |
| 38                    |            |      |          | -             |                                                              |         |                  |               |
| 39                    |            |      |          |               |                                                              |         |                  |               |
| 40                    |            |      | ~ .      |               |                                                              |         |                  |               |
| 41                    |            |      |          |               |                                                              |         |                  |               |
| 42                    |            |      |          | 1             |                                                              |         |                  |               |

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| Project N              |          |       |         |          | G Former Front Street Gas Works Site<br>rk, New Jersey                             | Projec                      | t No. 1406602<br>ion and Datum                                                                                  | 38.40        |  |  |
|------------------------|----------|-------|---------|----------|------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------|--------------|--|--|
| Boring L<br>Drilling ( |          |       |         |          | Environmental Services, Inc.                                                       | Date S                      | the second second second second second second second second second second second second second second second se | Date Finishe |  |  |
| Drilling I             |          |       | -       |          | e Drill B-80                                                                       | 1                           | 9/25/97                                                                                                         | 9/25/97      |  |  |
| Size and               |          |       |         |          | I.D. Hollow Stern Auger                                                            | Compl                       | letion Depth                                                                                                    | Rock Depth   |  |  |
| Casing                 | <u></u>  |       |         |          |                                                                                    | 18 ft Not Encounte          |                                                                                                                 |              |  |  |
| Casing H               | łamn     | ner   | Weigh   | it       | Drop                                                                               | Water Level Not Encountered |                                                                                                                 |              |  |  |
| Sampler                |          |       |         |          | D. Split Spoon                                                                     | Driller                     | K. Mike I                                                                                                       | Millican     |  |  |
| Sampler                |          | mer V | Veight  |          | 140 lb Drop 30"                                                                    | Inspec                      | tor Elana Se                                                                                                    | elman        |  |  |
|                        |          |       |         |          | 1                                                                                  | · · · ·                     |                                                                                                                 |              |  |  |
| Depth                  | s        | Туре  | Recox.  | SPT      | DESCRIPTION                                                                        |                             | REMAR                                                                                                           | 79           |  |  |
| (ft)                   | ļ        | ļ     | (ft)    | bi/6"    |                                                                                    |                             | Que et 0:50                                                                                                     |              |  |  |
|                        |          |       |         |          | ASPHALT                                                                            |                             | Start 9:50                                                                                                      | halt         |  |  |
| 1                      | S-1      | SS    | 1.1     | 13       | Reddish brown f SAND, some silt, trace                                             | 1                           | Auger through asp<br>FID = 0 ppm                                                                                | nan          |  |  |
|                        | ļ        |       |         | 40       | gravel, Lens of CONCRETE and ASPH                                                  |                             |                                                                                                                 |              |  |  |
| 2                      | <b>!</b> |       | <b></b> | 27       | Yellow brown f sandy SILT [FILL] (dry                                              |                             | -                                                                                                               |              |  |  |
| ~-                     |          |       | 1       | 10       | Yellow brown silty f SAND, trace f grave<br>occasional concrete, brick and asphalt |                             | FID = 0 ppm                                                                                                     |              |  |  |
| 3                      | S-2      | SS    | 1.2     | 15<br>20 | fragments                                                                          |                             | ייילק ט – סרי                                                                                                   |              |  |  |
| 4                      | 1        |       |         | 18       | [FILL] (moist)                                                                     | ļ                           | Auger to 4 feet                                                                                                 |              |  |  |
|                        |          |       |         | 6        | Yellow brown clayey SILT, some f sand                                              | 1                           | Auger to theor                                                                                                  |              |  |  |
| 5                      | S-3      | SS    | 1.5     | 4        | occasional concrete fragments                                                      |                             | FID = 0 ppm                                                                                                     |              |  |  |
|                        | 3.5      | - 55  | 1.5     | 6        | Rock fragments [FILL] (mol                                                         | - F                         |                                                                                                                 |              |  |  |
| 6                      |          |       |         | 4        | Brown m-f SAND, some silt                                                          | ,                           |                                                                                                                 |              |  |  |
| 0                      |          |       |         | 24       | Reddish brown silty f SAND, trace f grav                                           | vel.                        |                                                                                                                 |              |  |  |
| 7                      | S-4      | SS    | 0.5     | 22       | occasional porcelain and brick fragment                                            |                             | FID = 0 ppm                                                                                                     |              |  |  |
|                        | Ŭ        | 00    | 0.0     | 15       | and coal ash                                                                       | -                           | ••                                                                                                              |              |  |  |
| 8                      |          |       |         | 13       | [FILL] (moist)                                                                     | - 1                         | Brick in nose                                                                                                   |              |  |  |
|                        |          |       |         | 8        | Greenish brown silty f SAND, trace clay                                            | and                         | Auger to 8 feet                                                                                                 |              |  |  |
| 9                      | S-5      | SS    | 1.3     | 5        | f gravel [FILL] (moist)                                                            |                             | FID = 1 ppm                                                                                                     |              |  |  |
|                        |          | Í     |         | 5        | Reddish brown m-f SAND, trace-some s                                               | silt,                       |                                                                                                                 |              |  |  |
| 10                     |          |       |         | 6        | trace f gravel, pockets of clay                                                    | ļ.                          | Auger to 10 feet                                                                                                |              |  |  |
|                        |          |       |         | 4        | Reddish brown m-f SAND, trace silt and                                             | lf 🔤                        |                                                                                                                 |              |  |  |
| 11                     | S-6      | SS    | 1.0     | 5        | gravel, pockets of clay                                                            |                             | FID = 0 ppm                                                                                                     |              |  |  |
|                        |          | ļ     |         | 4        | [FILL] (moist)                                                                     |                             |                                                                                                                 |              |  |  |
| 12                     |          |       |         | 3        |                                                                                    |                             |                                                                                                                 |              |  |  |
|                        | Î        |       |         | 3        | Reddish brown f SAND, trace silt and f                                             |                             |                                                                                                                 |              |  |  |
| 13                     | S-7      | SS    | 0.2     | 3        | gravel                                                                             |                             | FID = 0.1 ppm                                                                                                   |              |  |  |
| ]                      |          | l     |         | 3        | [FILL] (moist-wet)                                                                 |                             |                                                                                                                 |              |  |  |
| 14                     |          |       |         | 3        |                                                                                    | 1                           | Auger to 14 feet                                                                                                |              |  |  |
|                        |          |       |         | 1        | Brown SILT, trace clay, f sand and f gra                                           |                             |                                                                                                                 |              |  |  |
| 15                     | S-8      | SS    | 0.1     | 1        | [FILL] (moist)                                                                     | ļ                           | FID = 1.5 ppm                                                                                                   |              |  |  |
|                        | 1        | - 1   |         | _6       |                                                                                    | 1                           | *                                                                                                               |              |  |  |
| 16                     |          |       |         | 5        |                                                                                    | Ι.                          |                                                                                                                 |              |  |  |
|                        |          | _     |         |          | Brown silty m-f SAND, trace clay                                                   |                             | FID = 30 ppm                                                                                                    | WHE 200 IS   |  |  |
| 17                     | S-9      | ss    | 0.7     | 5        |                                                                                    |                             | Spoon at 17.5 feet                                                                                              | Refusal      |  |  |
|                        |          |       |         | 6        | [FILL] (moist)                                                                     | 1                           |                                                                                                                 | neiusai      |  |  |
| 18                     |          |       |         |          | Black COAL ASH                                                                     |                             | Auger refusal                                                                                                   |              |  |  |
| ب <sub>م</sub>         |          |       |         |          | Boring completed at 18 feet                                                        | ľ                           | End 10:50                                                                                                       |              |  |  |
| 19                     |          |       |         |          |                                                                                    |                             |                                                                                                                 |              |  |  |
| <u> </u>               |          |       |         |          |                                                                                    |                             |                                                                                                                 |              |  |  |
| 20                     |          |       |         |          |                                                                                    | ł                           |                                                                                                                 |              |  |  |
| 1                      | [        | 1     |         |          | LANGAN Engineering ar                                                              |                             |                                                                                                                 |              |  |  |

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| roject N  | ame      |       |        | PSE&   | G Former Front Street Gas            | NO: B-3.<br>Works Site                  | Projec      |                      | 2                                     |
|-----------|----------|-------|--------|--------|--------------------------------------|-----------------------------------------|-------------|----------------------|---------------------------------------|
| oring L   | ocati    | on    |        | Newar  | k, New Jersey                        |                                         | Elevat      | ion and Datum        | 38.40                                 |
| rilling C |          |       |        | CT&E   | Environmental Services, In           | с.                                      | Date S      | tarted               | Date Finished                         |
| rilling E |          |       |        | Mobile | e Drill B-80                         |                                         | 1           | 9/25/97              | 9/25/97                               |
| ize and   |          |       |        | 4-1/4" | I.D. Hollow Stem Auger               |                                         | Compl       | etion Depth          | Rock Depth                            |
| asing     |          |       |        |        |                                      | • • • • • • • • • • • • • • • • • • • • |             | 17.5 ft              | Not Encountered                       |
| asing H   | amm      | P     | Weigh  | t      | Drop                                 |                                         | Water       |                      | · · · · · · · · · · · · · · · · · · · |
|           | ami      |       |        |        | ). Split Spoon                       |                                         | Driller     | K. Mike I            |                                       |
| ampler    |          |       |        | 2 0.0  |                                      | 007                                     |             |                      | · · · · · · · · · · · · · · · · · · · |
| ampler    | Ham      | mer v | veignt |        | 140 lb Drop                          | 30"                                     | Inspec      | tor Elana Se         | ennan                                 |
| Depth     | s        | Type  | Recov. | SPT    | DESCRIP                              | TION                                    |             | REMAR                | KS                                    |
| (ft)      |          |       | (ft)   |        | -                                    |                                         |             |                      |                                       |
| (11)      |          |       |        |        | ASPHALT                              |                                         |             | Start 11:45          |                                       |
|           |          | 00    |        |        | Orangish brown silty m-f S.          |                                         |             | Auger through asp    | halt                                  |
| 1         | S-1      | SS    | 1.1    | 6      |                                      |                                         |             |                      | and n                                 |
|           |          |       |        | 32     | brick, concrete and rock fra         | -                                       |             | FID = 0 ppm          |                                       |
| 2         |          |       | ļ      | 28     | [FILL]                               | (moist-dry)                             |             |                      |                                       |
|           |          |       | 1      | 21     | Orangish brown f SAND, s             | ome silt, trac                          |             |                      |                                       |
| 3         | S-2      | SS    | 0.8    | 20     | gravel                               |                                         |             | FID = 0 ppm          |                                       |
|           |          |       |        | 19     | [FILL]                               | (dry-moist)                             |             |                      |                                       |
| 4         |          |       |        | 18     | Orangish brown silty CLAY            | • •                                     | ļ           | Auger to 4 feet      |                                       |
|           |          |       |        | 11     |                                      |                                         |             | *                    |                                       |
| 5         | S-3      | ss    | NR     | 10     | 1                                    |                                         |             |                      |                                       |
|           | 5-5      | 55    | רוא    |        |                                      |                                         |             |                      |                                       |
|           |          |       |        | 8      |                                      |                                         |             | Concrete in the of - |                                       |
| 6         |          |       |        | 9      |                                      | <b>n</b>                                |             | Concrete in tip of s | noon                                  |
|           |          |       |        | 25     | Orangish brown silty f SAN           | D, occasiona                            |             |                      |                                       |
| 7         | S-4      | SS    | 0.1    | 100/4" | brick fragments                      |                                         |             | FID = 0 ppm          |                                       |
|           |          |       |        |        | [FILL]                               | (moist)                                 |             | Concrete in tip of s | poon                                  |
| 8         |          |       |        |        |                                      |                                         |             | Auger to 8 feet      |                                       |
|           |          |       |        | 80     | Brown silty f SAND, trace f          | oravel                                  |             | Auger grinding fror  | n 7 to 8 feet                         |
| 9         | S-5      | SS    | 0.7    |        | Lens of Fractured BRICK              | -                                       |             | FID = 0 ppm          |                                       |
|           | 0.0      |       | 0.7    |        | Brown f SAND, some silt, ti          |                                         | · · · · · · |                      |                                       |
|           |          |       |        |        |                                      | -                                       |             | Auger to 10 feet     |                                       |
| 10        |          |       |        |        | pockets of clay, occas. con          | -                                       |             | Auger to To leet     |                                       |
|           |          |       |        | 7      | Brown m-f SAND, trace silt           |                                         | -           |                      |                                       |
| 11        | S-6      | SS    | 1.0    | 4      | [FILL]                               | (moist-wet)                             | 1           | FID = 0 ppm          |                                       |
| _         |          | 1     |        |        | Lens of Greenish brown sill          | -                                       |             |                      |                                       |
| 12        |          |       |        | 2      | Brown m-f SAND, trace silt           | , pockets of c                          | clay        | Rock fragment in ti  | p of spoon                            |
| 1         |          |       |        | WH     | Brown m-f SAND, trace f gr           | avel, occasio                           | onal        |                      |                                       |
| 13        | S-7      | ss    | 1.0    |        | brick fragments                      |                                         |             | FID = 0 ppm          |                                       |
|           | - '      |       |        |        | [FILL]                               | (wet)                                   | 7           | Perched water        |                                       |
| 14        |          |       |        | . ★    | Į——————————————————————————————————— | (                                       |             | Auger to 14 feet     |                                       |
|           | -+       |       |        |        |                                      |                                         | ľ           |                      |                                       |
|           |          |       |        | 2      |                                      |                                         |             |                      |                                       |
| 15        | S-8      | SS    | NR     | 5      |                                      |                                         |             |                      |                                       |
|           |          |       |        | 4      |                                      |                                         | ļ           |                      |                                       |
| 16        |          |       |        | 2      |                                      |                                         |             |                      |                                       |
|           |          |       |        | 100/3" | Black COAL ASH                       |                                         | [1          | Refusal              | FID = 30 ppm                          |
| 17        | S-9      | ss    | 0.1    |        | FILL]                                | (wet)                                   |             | Brick fragments in t | tip of spoon                          |
|           | <u> </u> |       |        | 100/5" | ·                                    | . /                                     |             | Auger to 17 feet     |                                       |
| 18        | s-       | ss    | NR     | .00.0  |                                      |                                         |             | Spoon with 300 lb l  | nammer                                |
|           |          | 33    | וארז   |        |                                      |                                         |             | Refusal              |                                       |
|           | 10       | ľ     | 1      |        |                                      |                                         |             |                      |                                       |
| 19        |          |       |        |        |                                      |                                         | <u>ĭ</u>    | Auger refusal        |                                       |
|           |          |       | ſ      |        | Boring completed at 17.5 fe          | et                                      | ļE          | End 12:55            |                                       |
| 20        |          | •     |        |        |                                      |                                         |             |                      |                                       |
| í         |          | 1     |        | 1      |                                      |                                         | f f         |                      |                                       |
| 6         |          |       |        |        |                                      |                                         |             |                      |                                       |

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| Project Na         | me   |         |          |               | G Former Fr  |                | as Works Sit | le Projec   |                     | 06602        |                                       |
|--------------------|------|---------|----------|---------------|--------------|----------------|--------------|-------------|---------------------|--------------|---------------------------------------|
| Boring Lo          |      | on      |          |               | k, New Jers  |                | •            |             | ion and Datu        | <u>1</u> 111 | 38.45                                 |
| Drilling Co        |      |         |          |               |              | ntal Services, | Inc.         | Date S      | Started             |              | Date Finished                         |
| <b>Prilling Ec</b> | quip | ment    |          |               | Drill B-80   |                |              |             | 9/25/97             |              | 9/25/97                               |
| ize and T          | Гуре | ofB     | it       | 4-1/4"        | I.D. Hollow  | Stem Auger     |              | IComp       | letion Depth        |              | Rock Depth                            |
| Casing             |      |         |          |               |              |                |              | 14/         | 17.5 ft<br>Level No | + Ence       | Not Encountere                        |
| Casing Ha          | mm   | ier ,   | Weight   |               |              | Drop           |              |             |                     |              | · · · · · · · · · · · · · · · · · · · |
| Sampler            |      |         |          | <u>2" O.D</u> | . Split Spoo |                |              | Driller     |                     | Mike M       |                                       |
| Sampler H          | lam  | mer W   | /eight   |               | 300 lb       | Drop           | .30"         | Inspec      | tor Ela             | ina Se       | eiman                                 |
| Depth              | s    | Туре    | Recov.   | SPT           |              | DESCR          | PTION        |             | RE                  | MARK         | (S                                    |
| (ft)               |      |         | (f1)     | 61/6"         |              |                |              |             |                     |              |                                       |
|                    |      | ***     |          |               | ASPHALT      |                |              |             | Start 16:05         |              |                                       |
| 1                  |      |         |          |               |              |                |              |             | Auger throug        |              | nait                                  |
|                    |      |         |          |               |              |                |              |             | Auger to 20         | reet         |                                       |
| 2                  |      |         |          |               |              |                |              |             | Daill               | . 6.4-       | lich brown silts                      |
| ]                  |      |         |          |               |              |                |              |             | SAND, trace         |              | lish brown silty                      |
| 3                  |      |         |          |               |              |                |              |             | ISAND, ITace        | i yiav       |                                       |
|                    |      |         |          |               |              |                |              |             |                     | _            |                                       |
| 4                  |      |         |          |               |              |                |              |             |                     |              |                                       |
| 5                  |      |         |          |               |              |                |              |             |                     |              |                                       |
| 6                  |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          |               |              |                |              |             |                     |              |                                       |
| 7                  |      |         |          |               |              |                |              |             |                     |              |                                       |
| 8                  |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          |               |              |                |              |             | Drill cuttings:     | : Dark       | brown silty                           |
| 9                  |      |         |          |               |              |                |              |             | SAND                |              |                                       |
| 10                 |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          |               |              |                | -            |             |                     |              |                                       |
| 12                 |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          | i             |              |                |              |             |                     |              |                                       |
| 13 ]               |      |         |          |               |              |                |              |             |                     |              |                                       |
| 14                 |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          |               |              |                |              |             |                     |              |                                       |
| 15                 |      |         |          |               |              |                |              |             |                     |              |                                       |
| 16                 |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          | -             |              |                |              |             |                     |              |                                       |
| 17                 |      |         |          |               |              |                |              |             |                     |              |                                       |
| 18                 |      |         | · ~ .    |               |              |                |              |             |                     |              |                                       |
| j 19               |      |         |          |               |              |                |              |             |                     |              |                                       |
|                    |      |         |          |               | -            |                |              |             |                     |              |                                       |
| 20                 |      | -       |          |               |              |                |              |             |                     |              |                                       |
| Standard I         | Pene | etratio | n Test I | I-Value       | ;            | LANGAN         | Engineerin   | g and Env   | rironmental S       | Service      | es, inc.                              |
|                    |      |         |          |               | •            | Riv            | er Drive Cer | iter 1. Elm | wood Park,          | INJ ()       | 7407                                  |

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| roject Narr |          |             |               |                                            | Proje    |                       |                          |   |
|-------------|----------|-------------|---------------|--------------------------------------------|----------|-----------------------|--------------------------|---|
| oring Loca  | ation    |             |               | k, New Jersey Environmental Services, Inc. | Date     | Started<br>9/25/97    | Date Finished<br>9/25/97 |   |
| rilling Con |          | -           |               |                                            | 1        | REMAI                 | ·······                  |   |
| Depth S     | Тур      | e Recov.    | SPT"<br>bl/6" | DESCRIPTION                                |          |                       |                          |   |
| (ft)        |          | <u>(ft)</u> | 100/0"        |                                            |          | Spoon bouncing        |                          |   |
| 21 5        | 1 55     | NR          |               |                                            |          | Auger refusal         |                          |   |
|             |          |             | , <b>.</b>    |                                            |          |                       |                          |   |
| 22          |          |             |               | Boring completed at 20 feet                | <u> </u> | End 16:40             | <u></u>                  |   |
| 23          |          |             |               |                                            |          |                       |                          |   |
| 24          |          |             |               |                                            |          |                       |                          |   |
| 25          |          |             |               |                                            |          |                       |                          |   |
|             |          |             | ļ             |                                            |          |                       |                          |   |
| 26          |          |             |               |                                            |          |                       |                          |   |
| 27          |          |             |               |                                            |          |                       |                          |   |
| 28          |          |             | ;             |                                            |          |                       |                          |   |
| 29          |          |             |               |                                            |          |                       | :                        |   |
|             |          |             |               |                                            |          |                       |                          |   |
| 30          |          | 1           |               |                                            |          |                       |                          |   |
| 31          |          |             |               |                                            |          |                       |                          |   |
| 32          |          |             |               |                                            |          |                       |                          |   |
| 33          |          |             |               | -                                          |          |                       |                          |   |
|             |          |             |               |                                            |          |                       |                          | i |
| 34          |          |             |               |                                            |          |                       |                          |   |
| 35          |          |             |               |                                            |          |                       |                          |   |
| 36          |          |             |               |                                            |          |                       |                          |   |
|             |          |             |               |                                            |          |                       |                          |   |
| 37          |          |             |               |                                            |          |                       |                          |   |
| 38          |          |             |               |                                            |          |                       |                          |   |
| 39          |          |             | -             |                                            |          |                       |                          |   |
| 40          |          |             |               |                                            |          |                       |                          |   |
|             |          | ~           |               |                                            |          |                       |                          |   |
| 41          |          |             |               |                                            |          |                       |                          |   |
| 42          |          |             |               |                                            |          |                       |                          |   |
| tandard Pe  | <u> </u> |             | NVolu         | e LANGAN Engineering a                     | od For   | l<br>vironmental Serv |                          | - |

| Project N        |       |         |         | the second second second second second second second second second second second second second second second s |                                                                                       | Project<br>Ievati | t No. 1406602<br>ion and Datum | 35.91                         |
|------------------|-------|---------|---------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------|--------------------------------|-------------------------------|
| Boring Lo        |       |         |         |                                                                                                                |                                                                                       | Date S            | tarted                         | Date Finished                 |
| Jrilling E       |       |         |         | Mobile                                                                                                         | Drill B-80                                                                            |                   | 9/23/97                        | 9/23/97                       |
| Size and         |       |         |         | 4-1/4"                                                                                                         | I.D. Hollow Stem Auger C                                                              |                   | etion Depth                    | Rock Depth<br>Not Encountered |
| Casing           |       |         |         |                                                                                                                | V                                                                                     | Nater             | 10 ft<br>Level Not Enco        |                               |
| Casing H         | атт   | er      | Weight  |                                                                                                                |                                                                                       | Driller           | K. Mike N                      |                               |
| Sampler          |       |         |         | <u>2" 0.D</u>                                                                                                  |                                                                                       | nspec             |                                |                               |
| Sampler          | Ham   | mer V   | /eight  |                                                                                                                |                                                                                       | 1                 |                                |                               |
| Depth            | s     | Type    | Recov.  | SPT*                                                                                                           | DESCRIPTION                                                                           |                   | REMARI                         | (5                            |
| (it)             |       |         | (ft)    | <b>Ы∕6</b> "                                                                                                   |                                                                                       |                   | Start 11:45                    |                               |
|                  |       | ~~      |         |                                                                                                                | ASPHALT<br>Dark gray - Black c-f SAND, some c-f gra                                   |                   | FID = 2-5  ppm                 |                               |
| 1                | S-1   | SS      | 0.3     | 20<br>75                                                                                                       | trace silt                                                                            |                   | Slight naphthalene             | odor                          |
| 2                |       |         |         | 41                                                                                                             | [FILL] (dry)                                                                          | 1                 |                                |                               |
| 6                |       |         |         | 40                                                                                                             | Red brown c-f SAND, trace silt, trace f gra                                           | avel              |                                |                               |
| 3                | S-2   | SS      | 1.0     | 29                                                                                                             | gravel, occ. cinders, coal and brick frags                                            |                   | FID = 0.1 ppm                  |                               |
|                  | ]     |         |         |                                                                                                                | BRICK [FILL] (dry)                                                                    | -                 | Auger to 4 feet                |                               |
| 4                | ļ     |         |         | 9                                                                                                              | Red brown c-f SAND, trace silt, trace f gra                                           |                   | Auger to 4 leet                |                               |
| _ <del>_</del> - |       | SS      | 0.3     | 2                                                                                                              | Brown m-f SAND, trace-some silt, trace c<br>sand and f gravel, occasional woody roots |                   | FID = 0.3-0.4 ppm              |                               |
| 5                | S-3   | 33      | 0.3     |                                                                                                                | and brick fragments                                                                   |                   |                                |                               |
| 6                |       |         |         | 1                                                                                                              | [FILL] (dry)                                                                          |                   |                                |                               |
| <u>~</u>         |       |         |         | 8                                                                                                              | Brown c-f SAND, trace silt and f gravel,                                              |                   | FID = 0.1-0.2 ppm              |                               |
| 7                | S-4   | SS      | 1.3     | 5                                                                                                              | occasional cinders, brick and coal frags                                              |                   |                                |                               |
|                  |       |         |         | 9                                                                                                              | Dark grayish brown c-f SAND, trace-some                                               | e                 | Auger to 8 feet                |                               |
| 8                |       |         |         | 10<br>8                                                                                                        | silt, trace m-f gravel [FILL] (dry)                                                   |                   |                                |                               |
| 9                | S-5   | ss      | 1.4     | 5                                                                                                              | Crushed COAL [FILL]                                                                   |                   | FID = 0.1-0.2 ppm              |                               |
|                  | 5-5   | 55      | ••      | 5                                                                                                              | Dark gray - Reddish brown m-f SAND, tra                                               | ace-              |                                |                               |
| 10               | 1     |         |         | 6                                                                                                              | some silt, trace c sand and f gravel (                                                | dry)              |                                |                               |
|                  |       |         |         |                                                                                                                | Boring completed at 10 feet                                                           |                   | End 12:12                      |                               |
| 11               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| - n <sup>-</sup> |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| 12               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| 13               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| <u> </u>         | ]     |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| 14               |       |         |         |                                                                                                                | 1                                                                                     |                   |                                |                               |
|                  |       |         |         |                                                                                                                | 1                                                                                     |                   |                                |                               |
| 15               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| 16               |       |         |         | -                                                                                                              |                                                                                       |                   |                                |                               |
| 10               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| 17               |       |         | ~       | -                                                                                                              |                                                                                       |                   |                                |                               |
|                  |       |         | r       |                                                                                                                |                                                                                       |                   |                                |                               |
| 18               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| /                |       |         |         | -                                                                                                              |                                                                                       |                   |                                |                               |
| 19               |       |         |         |                                                                                                                |                                                                                       |                   |                                |                               |
| 20               |       | •.      |         |                                                                                                                |                                                                                       |                   |                                |                               |
|                  |       |         |         |                                                                                                                | ·                                                                                     |                   |                                |                               |
| *Standard        | i Pen | etratio | in Test | N-Valu                                                                                                         | e LANGAN Engineering an                                                               | id Env            | vironmental Servic             | ces, Inc.                     |

|              |       |        |         |        | LOG OF BORING NO: B-5                      | •        | Sheet 1            | of 1            |     |
|--------------|-------|--------|---------|--------|--------------------------------------------|----------|--------------------|-----------------|-----|
| Project N    | lame  |        |         | PSE&   | G Former Front Street Gas Works Site       |          | ct No. 1406602     |                 | 1   |
| Boring L     | ocat  | ion    | · ·     |        | rk, New Jersey                             |          | tion and Datum     | 7.16            |     |
| Drilling (   | Comp  | any    |         |        | Environmental Services, Inc.               | <u> </u> | Started            | Date Finished   | f F |
| Drilling E   | quir  | ment   |         |        | e Drill B-80                               | 1        | 9/23/97            | 9/23/97         | ,   |
| Size and     | Тур   | e of E | Bit     | 4-1/4" | I.D. Hollow Stem Auger                     | Com      | pletion Depth      | Rock Depth      | 1   |
| Casing       |       |        |         |        |                                            | 1        | 4 ft               | Not Encountered |     |
| Casing H     | amn   | ner    | Weigh   | t      | Drop                                       | Wate     |                    | ountered        |     |
| Sampler      |       |        |         |        | D. Split Spoon                             | Drille   |                    |                 | 1   |
| Sampler      | Ham   | mor V  | Noight  | 2 0.0  | 140 lb Drop 30"                            | <u> </u> |                    |                 | }   |
| oampier      | l ani |        | I       | 1      |                                            | Inspe    | ctor Ed Zofch      | ак              | ł   |
| Depth        | s     | Туре   | Recov.  | SPT    | DESCRIPTION                                |          | REMAR              | KS              | Į   |
| (ft)         |       |        | (ft)    | ы∕6"   |                                            |          |                    |                 | [   |
|              |       |        |         |        | ASPHALT                                    |          | Start 13:00        |                 |     |
| 1            | S-1   | SS     | 0.5     | 28     | Dark gray - Brown c-f SAND, trace silt a   | and f    | Auger through asp  | holt            | I   |
| <b>•</b>     |       |        | 0.0     | 30     | gravel, occasional coal, cinder, brick an  |          | FID = 0  ppm       | лал             | [   |
| 2            |       |        |         | 39     |                                            | u        | Più – 0 ppin       |                 | [   |
| <u>_</u>     |       |        |         | 22     | concrete fragments [FILL] (dry)            | and f    |                    |                 |     |
| ~ ~          | S-2   | SS     | 0.0     |        | Dark brown - Gray c-f SAND, trace silt a   |          |                    |                 |     |
| 3            | 3-2   | 33     | 0.8     | 10     | gravel, occasional coal, cinder, brick and | a        | FID = 0 ppm        |                 |     |
|              |       |        |         | 29     | rock fragments                             |          | Auger to 4 feet    |                 |     |
| 4            |       |        |         | 40     | [FILL] (dry)                               |          | Auger refusal at 4 | feet            |     |
|              |       |        |         |        | Boring completed at 4 feet                 |          | End 13:25          |                 |     |
| 5            |       |        |         |        |                                            |          |                    |                 |     |
| _            |       |        |         |        |                                            | .0       |                    |                 |     |
| 6            |       |        |         |        |                                            |          |                    |                 |     |
| _            |       |        |         |        |                                            |          |                    |                 |     |
| 7            |       |        |         |        |                                            |          |                    | į               | ••• |
|              |       |        |         |        |                                            |          |                    | i               |     |
| 8            |       |        |         |        |                                            |          |                    |                 |     |
|              |       |        |         |        |                                            |          |                    |                 |     |
| 97           |       |        |         | į      |                                            |          |                    | ľ               |     |
|              | [     |        |         | 1      |                                            |          |                    |                 |     |
| 10           |       |        | 1       |        |                                            |          |                    |                 |     |
|              |       |        |         |        | -                                          |          |                    |                 |     |
| 11           |       |        |         |        |                                            |          |                    |                 |     |
|              |       |        |         |        |                                            |          |                    |                 |     |
| 12           |       | 1      |         |        |                                            |          |                    |                 |     |
|              |       |        | Í       |        |                                            |          |                    |                 | :   |
| 13           | 1     |        |         |        |                                            |          |                    |                 | ,   |
|              |       |        |         |        |                                            |          | •                  |                 |     |
| 14           |       |        |         |        |                                            |          |                    |                 |     |
| <u>1 + 4</u> |       |        |         |        |                                            |          | <u>.</u>           |                 |     |
| 1            |       |        |         |        |                                            |          |                    |                 |     |
| 15           |       | 1      |         |        |                                            |          |                    |                 |     |
| _            |       |        |         |        |                                            |          |                    |                 |     |
| 16           |       |        |         | -      |                                            |          |                    |                 |     |
|              |       |        |         |        |                                            |          |                    |                 |     |
| 17           |       |        |         |        |                                            |          |                    | 4               |     |
|              |       |        | ~       |        |                                            |          |                    |                 |     |
| 18           | 1     | 1      | · · ·   |        |                                            |          |                    |                 |     |
|              |       |        |         | l      |                                            | [        |                    |                 |     |
| 19           |       |        |         | ļ      |                                            |          |                    |                 |     |
| <u>``</u> _  |       |        |         |        |                                            |          |                    |                 | -   |
| 20           |       |        | ł       |        |                                            |          |                    | .               | •   |
|              |       | 1      |         |        |                                            |          |                    | 1               |     |
| Standard F   | 1     |        | <u></u> |        |                                            |          |                    |                 |     |
| Jianuaru h   | enet  | auon   | rest N  | -value | LANGAN Engineering an                      | a Envi   | ronmental Service  | es, Inc.        |     |

LANGAN Engineering and Environmental Services, Inc. AN Engineering and Environment 1 River Drive Center 1 Flowood Park N.I 07407 1 TIERRA-B-018286

|                   |          |         |            |          |                  | FBORING       |                 |              |                      | Sheet 1<br>1406602 |                                                                                                                  |          |
|-------------------|----------|---------|------------|----------|------------------|---------------|-----------------|--------------|----------------------|--------------------|------------------------------------------------------------------------------------------------------------------|----------|
| Project N         | ame      |         |            |          | Former Front     | Street Gas    | Works Site      | Projec       | ion and              |                    | 29.44                                                                                                            |          |
| Boring Lo         | ocati    | on      |            |          | (, New Jersey    |               |                 |              |                      | Datum              | Date Finish                                                                                                      | od<br>od |
| Drilling C        |          |         |            |          | Environmental    | Services, Ir  | nc              | Juate S      | Started              | 5.07               | 9/25/97                                                                                                          |          |
| <b>Prilling E</b> | quip     | ment    |            |          | Drill B-80       |               |                 |              |                      | 25/97              | Rock Depth                                                                                                       | _        |
| Size and          | Туре     | of B    | lit        | 4-1/4"   | .D. Hollow Ster  | m Auger       |                 | -lcomb<br>-l | letion De<br>27.5 ft | spur               | Not Encount                                                                                                      |          |
| Casing            |          |         |            |          |                  |               |                 | Water        | Level                | ~ 21.5 ft          |                                                                                                                  |          |
| Casing H          | amm      | ier     | Weight     |          |                  | Drop          |                 |              |                      | K. Mike            |                                                                                                                  |          |
| Sampler           |          |         |            | 2" O.D   | . Split Spoon    |               |                 | Driller      |                      | Elana S            | and the second second second second second second second second second second second second second second second |          |
| Sampler           | Ham      | mer V   | Veight     |          | 140 lb           | Drop          | 30"             | Inspec       |                      | Elana S            | eennan                                                                                                           |          |
|                   |          |         |            | SPT      |                  | DESCRIP       | TION            |              |                      | REMAR              | KS                                                                                                               |          |
| Depth             | S        | iype    | Recov.     | 5F1      |                  | 02000         |                 |              |                      |                    |                                                                                                                  |          |
| (ft)              |          |         | (ft)       |          | ASPHALT          | <u></u>       |                 |              | Start 13             | :35                |                                                                                                                  |          |
|                   | C 1      | SS      | 0.2        |          | Black silty f SA | ND. trace     | oravel, occa    | sional       | Auger th             | rough asp          | phalt                                                                                                            |          |
| 1                 | S-1      | - 22    | 0.2        | 12       | concrete fragm   |               | <b>j</b> ,      |              | FID = 0              | ppm                |                                                                                                                  |          |
| 2                 |          |         |            | 55       | [FILL]           |               | (moist)         |              |                      |                    |                                                                                                                  |          |
| 2                 |          |         | <u> </u> - | 32       | Dark gray f SA   | ND, some      | silt, occasiona | al           |                      |                    |                                                                                                                  |          |
| 3                 | S-2      | SS      | 0.8        | 8        | concrete fragm   |               |                 |              | FID = 0              | ppm                |                                                                                                                  |          |
|                   |          |         |            |          | BRICK fragme     |               | [FILL]          |              |                      |                    |                                                                                                                  |          |
| 4                 |          |         |            | 6        | Black f gravelly | SAND -        | (moist)         |              | Auger to             |                    |                                                                                                                  |          |
|                   |          |         |            | 8        | Brown silty f S  | AND, trace    | c-f gravel,     |              | Auger g              | -                  |                                                                                                                  |          |
| 5                 | S-3      | ss      | 0.2        | 6        | occasional brid  |               |                 |              | FID = 0              | ppm                |                                                                                                                  |          |
|                   |          |         |            | 5        | [FILL]           |               | (moist-dry)     | )            | 1                    |                    |                                                                                                                  |          |
| 6                 |          |         |            | 7        |                  |               |                 |              |                      |                    |                                                                                                                  |          |
|                   |          |         |            | 10       |                  |               |                 |              |                      |                    |                                                                                                                  |          |
| 7                 | S-4      | SS      | NR         | 10       |                  |               |                 |              |                      |                    |                                                                                                                  | _        |
|                   |          |         |            | 7        |                  |               |                 |              |                      |                    | k fragments ir                                                                                                   | 1        |
| 8                 |          |         |            | 8        |                  |               |                 |              | tip of sp            |                    |                                                                                                                  |          |
|                   |          |         | 1          | 20       | Brown m-f SA     |               |                 |              | Auger to             |                    |                                                                                                                  |          |
| 9                 | S-5      | ss      | 0.6        | 67       | occasional brid  | ck and cond   | crete fragmen   | ts           | FID = 5              | ppm                |                                                                                                                  |          |
|                   | 1        |         |            | 85       | (FILL)           |               | (dry)           |              |                      | 10 (               |                                                                                                                  |          |
| 10                | ĺ        |         |            | 15       |                  |               |                 |              | Auger to             | o 10 feet          |                                                                                                                  |          |
|                   |          |         | 1          |          | Brown m-f SAI    |               |                 | el,          |                      | 1                  |                                                                                                                  |          |
| 11                | S-6      | SS      | 0.1        | 20       | occasional cor   | ncrete fragr  |                 |              | FID =0.              | 1 ppm              |                                                                                                                  |          |
|                   | 1        |         |            | 11       | (FILL)           |               | (moist)         |              | 0                    | e in tip of        | c0000                                                                                                            |          |
| 12                |          |         |            | 12       |                  |               |                 |              | Concret              | e in tip or        | spoon                                                                                                            |          |
|                   |          |         | Ī          | 30       | Reddish brown    | n silty f SAN | ND, trace 1 gra | avei         |                      | 2 000              |                                                                                                                  |          |
| 13                | S-7      | SS      | 0.6        | 23       |                  |               | 10              |              | FID = 0              | .o ppn             |                                                                                                                  |          |
|                   |          |         |            | 14       | Reddish brown    | n silty f SAN |                 |              | Augort               | o 14 feet          |                                                                                                                  |          |
| 14                |          |         |            | 13       | [FILL]           |               | (moist)         |              | Augeri               | J 14 1661          |                                                                                                                  |          |
|                   |          |         | 1          | 80       | Light brown m    | -I SAND, S    | ome i gravel,   | te           | FID =1.              | 5 nnm              |                                                                                                                  |          |
| 15                | S-8      | SS      | 0.9        | 41       | occasional cor   | ncrete and    |                 | 45           | [                    | o hhiu             |                                                                                                                  |          |
| _                 |          |         |            | 26       | [FILL]           |               | (dry)           |              |                      |                    |                                                                                                                  |          |
| 16                |          |         |            | 30       |                  |               |                 |              | Refusal              |                    |                                                                                                                  |          |
|                   | <b>l</b> |         |            | 100/2"   |                  |               |                 |              | lineiusai            |                    |                                                                                                                  |          |
| 17                | S-9      | SS      | NR         |          |                  |               |                 |              |                      |                    |                                                                                                                  |          |
|                   |          |         | . ~        |          |                  |               |                 |              | Auger                | o 18 feet          |                                                                                                                  |          |
| 18                |          |         | · ·        |          |                  |               |                 |              |                      |                    |                                                                                                                  |          |
| }                 |          |         |            | 27       | Light brown f S  | SAND, trac    | e siit          |              | FID = 2              | 5 0000             |                                                                                                                  |          |
|                   | S-       | ŞS      | 1.4        | 34       | [SP]             |               |                 |              | -                    | .o ppm             |                                                                                                                  |          |
| •                 | 10       |         |            | 25       | Light brown sil  | ity I SAND    | المتحصر والمرار | 1            | Auger +              | o 20 feet          |                                                                                                                  |          |
| 20                |          |         | ļ          | 24       | [SM]             |               | (dry-moist      | .)           |                      |                    |                                                                                                                  |          |
|                   |          |         |            | <u> </u> | l                |               | Engineering     | and En       | vironmo              | ntal Son           | ices Inc                                                                                                         |          |
| (- <b>^</b> . )   | 10.00    | ntratio | on Test    | N-Valu   | e                | LANGAN I      | Engineering     | anu Ell      | vironnie             | ark, NJ            |                                                                                                                  |          |

| Project N     | lame     | •       |                | PSE&       | LOG OF BORING<br>G Former Front Street Gas |             |   | Sheet 2<br>ct No. 140660 |         | 2  |
|---------------|----------|---------|----------------|------------|--------------------------------------------|-------------|---|--------------------------|---------|----|
| Boring L      |          |         |                |            | rk, New Jersey                             | , works one |   | Started                  |         | -, |
| Drilling C    |          |         |                |            | Environmental Services, Ir                 | nc.         |   | 9/25/97                  | 9/25/97 |    |
| Depth<br>(ft) | -s       | Туре    | Recov.<br>(ft) | SPT<br>bV6 | DESCRIP                                    | TION        |   | REMAI                    | RKS     |    |
|               | <u> </u> |         |                | 12         |                                            |             |   |                          |         | _  |
| 21            | s-       | ss      | 1.4            | 12         | Brown m-f SAND<br>[SP]                     | (moist-wet) |   | FID = 8 ppm              |         |    |
|               | 11       |         |                | 10         | -                                          | (moist-wei) |   | FID – 6 ppm              |         |    |
| 22            |          | [       |                | 11         |                                            |             |   |                          |         |    |
| 1             |          |         |                |            | Brown m-f SAND                             |             |   |                          |         |    |
| 23            | S-       | SS      | 1.6            | 17         | [SP]                                       |             |   | FID = 20 ppm             |         |    |
| 24            | 12       |         |                | 21<br>30   | Brown silty f SAND                         | ( - 1)      |   |                          |         |    |
| 24            |          |         |                | 30         | [SM]<br>Dark brown silty f SAND            | (wet)       |   | Auger to 24 feet         |         | ļ  |
| 25            | S-       | SS      | 1.7            | 36         | [SM]                                       | (wet)       |   | FID = 15 ppm             |         |    |
|               | 13       |         |                | 40         | [0]                                        | (1101)      |   |                          |         |    |
| 26            |          |         |                | 62         |                                            |             |   |                          |         |    |
|               |          |         |                | 28         | Dark brown silty f SAND                    |             |   |                          |         |    |
| 27            | S-       | SS      | 1.3            | 75         | [SM]                                       | (wet)       |   | FID = 0.1 ppm            |         |    |
| 28            | 14       |         |                | 100/5"     | . 1                                        |             |   | Refusal                  |         |    |
| 20            |          |         |                |            | Boring completed at 27.5 f                 |             |   | End 15:40                |         | 4  |
| 29            |          |         |                |            | Doring completed at 27.0 P                 |             |   |                          |         | 1  |
| ]             |          | Í       |                |            |                                            |             |   |                          |         | Í  |
|               |          |         |                |            |                                            |             |   |                          |         |    |
| <u> </u>      |          | - · · 1 |                | ĺ          |                                            |             |   |                          |         |    |
| 31            |          |         |                |            |                                            |             |   |                          |         |    |
| 32            |          |         |                |            |                                            |             |   |                          |         |    |
|               |          | [       |                |            |                                            |             |   |                          |         |    |
| 33            |          |         |                |            |                                            | -           |   |                          |         | 1  |
|               |          |         |                |            |                                            |             |   |                          |         | 1  |
| 34            |          |         |                |            |                                            |             |   |                          |         |    |
| ~             |          |         |                |            |                                            |             |   |                          | ·       |    |
| 35            |          |         |                |            |                                            |             |   |                          |         |    |
| 36            |          |         |                |            |                                            |             |   |                          |         |    |
|               |          | Í       |                |            |                                            |             |   |                          |         |    |
| 37            |          |         |                |            |                                            |             |   |                          |         |    |
|               |          |         |                | ľ          |                                            |             |   |                          |         |    |
| 38            |          |         |                |            |                                            |             |   |                          |         |    |
| ~ -           |          |         |                | •          |                                            |             | 1 |                          |         |    |
| 39            |          |         |                |            |                                            |             | 1 |                          |         |    |
| 40            |          |         |                |            |                                            |             |   |                          |         |    |
|               |          |         | -              |            |                                            |             |   |                          |         |    |
| 41            |          |         |                |            |                                            |             |   |                          |         |    |
|               |          |         | ļ              |            |                                            |             |   |                          |         | ľ  |
| 42            |          |         |                |            |                                            |             |   |                          |         |    |
|               |          | •       |                |            |                                            |             |   |                          |         | 1  |

LANGAN Engineering and Environmental Services, Inc.

| (ft)<br>1 5<br>2                                                                                                | catic<br>ompa<br>uipr<br>ype<br>damr<br>s<br>S-1 | any<br>nent<br>of B<br>er<br>ner W  | it<br>Weight                             | CT&E  <br>Mobile<br>4-1/4"       | k, New Jersey<br>Environmental Services, Inc.<br>Drill B-80<br>I.D. Hollow Stem Auger<br>Drop<br>. Split Spoon<br>140 lb Drop 30"<br>DESCRIPTION | Date Si<br>Compl          | 9/24/97<br>etion Depth<br>9.5 ft<br>Level Not Enc<br>K. Mike                 | eelman                                                         |
|-----------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------|------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------|
| Jrilling Eq<br>Size and Ty<br>Casing<br>Casing Har<br>Sampler<br>Sampler Hi<br>Depth<br>(It)<br>1 S<br>2<br>3 S | ype<br>mm<br>lamr<br>s<br>S-1                    | nent<br>of B<br>er<br>ner W<br>Type | it<br>Weight<br>/eight<br>Recov.<br>(11) | Mobile<br>4-1/4"  <br><br>2" O.D | Drill B-80<br>I.D. Hollow Stem Auger<br>Drop<br>. Split Spoon<br>140 lb Drop 30"                                                                 | Compl<br>Water<br>Driller | 9/24/97<br>etion Depth<br>9.5 ft<br>Level Not Enc<br>K. Mike<br>tor Elana So | 9/24/97<br>Rock Depth<br>Not Encountered<br>Millican<br>eelman |
| Size and Ty<br>Casing<br>Casing Har<br>Sampler<br>Sampler Har<br>Depth<br>(It)<br>1 S<br>2<br>3 S               | ype<br>mm<br>lamr<br>s<br>S-1                    | of B<br>er<br>mer W<br>Type         | it<br>Weight<br>/eight<br>Recov.<br>(ft) | 4-1/4"  <br><br>2" O.D<br>SPT    | I.D. Hollow Stem Auger<br>Drop<br>. Split Spoon<br>140 lb Drop 30"                                                                               | Water<br>Driller          | etion Depth<br>9.5 ft<br>Level Not Enc<br>K. Mike<br>tor Elana S             | Not Encountered<br>ountered<br>Millican<br>eelman              |
| Casing<br>Casing Har<br>Sampler<br>Sampler Har<br>Depth<br>(It)<br>1 S<br>2<br>3 S                              | s<br>S-1                                         | er<br>ne <u>r</u> W<br>Type         | Weight<br>/eight<br>Recov.<br>(11)       | 2" O.D                           | Drop            . Split Spoon            140 lb         Drop         30"                                                                         | Water<br>Driller          | 9.5 ft<br>Level Not Enc<br>K. Mike<br>tor Elana So                           | ountered<br>Millican<br>eelman                                 |
| Casing Har<br>Sampler<br>Sampler Hr<br>Depth<br>(It)<br>1 S<br>2<br>3 S                                         | s<br>S-1                                         | ner W<br>Type                       | /eight<br>Recov.<br>(11)                 | 2" O.D                           | . Split Spoon<br>140 lb Drop 30"                                                                                                                 | Driller                   | K. Mike<br>tor Elana S                                                       | Millican<br>eelman                                             |
| Sampler<br>Sampler Hi<br>Depth<br>(it)<br>1 S<br>2 S                                                            | s<br>S-1                                         | ner W<br>Type                       | /eight<br>Recov.<br>(11)                 | 2" O.D                           | 140 lb Drop 30"                                                                                                                                  | i                         | tor Elana S                                                                  | eelman                                                         |
| Sampler H                                                                                                       | s<br>S-1                                         | Туре                                | /eight<br>Recov.<br>(11)                 | SPT                              | 140 lb Drop 30"                                                                                                                                  | inspec                    |                                                                              |                                                                |
| Depth<br>(it)<br>1 5<br>2 5<br>3 5                                                                              | s<br>S-1                                         | Туре                                | Recov.<br>(ft)                           |                                  |                                                                                                                                                  |                           | REMAR                                                                        |                                                                |
| 1 5<br>2 2<br>3 5                                                                                               |                                                  | SS                                  |                                          | <b>Ы/6</b> "                     |                                                                                                                                                  |                           |                                                                              | KS                                                             |
| 2                                                                                                               |                                                  | SS                                  | NR                                       | ·                                |                                                                                                                                                  |                           | Start 11:45                                                                  |                                                                |
| 2                                                                                                               |                                                  | 55                                  | NR                                       | 100/1"                           | ASPHALT                                                                                                                                          |                           | Auger through as                                                             | phalt                                                          |
| 3 5                                                                                                             |                                                  |                                     |                                          | 100/1                            |                                                                                                                                                  |                           | Refusal                                                                      |                                                                |
| 3 5                                                                                                             |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           | Auger to 2 feet                                                              |                                                                |
|                                                                                                                 | <u> </u>                                         |                                     |                                          | 14                               | Reddish brown silty f SAND, trace c-f g                                                                                                          |                           | Auger grinding                                                               |                                                                |
|                                                                                                                 | S-2                                              | SS                                  | 0.5                                      | 10                               | pockets of clay, occasional brick fragme                                                                                                         | ents                      | FID = 30 ppm                                                                 |                                                                |
| 4                                                                                                               |                                                  | 00                                  |                                          | 11                               | [FILL] (dry)                                                                                                                                     |                           |                                                                              |                                                                |
| · 1                                                                                                             |                                                  |                                     | [                                        | 12                               | Reddish brown SILT, trace f gravel,                                                                                                              |                           | Auger to 4 feet                                                              |                                                                |
|                                                                                                                 | †                                                |                                     |                                          | 9                                | occasional brick and concrete fragment                                                                                                           | S                         | FID = 0 ppm                                                                  |                                                                |
| 555                                                                                                             | S-3                                              | SS                                  | 1.2                                      | 7                                | [FILL] (dry)                                                                                                                                     |                           | רים – ע אויי                                                                 |                                                                |
| ]                                                                                                               |                                                  |                                     |                                          | 5                                | Reddish brown silty f SAND, trace f gra<br>[FILL] (dry)                                                                                          | VE1                       | Rock fragments ir                                                            | n tip of spoon                                                 |
| 6                                                                                                               |                                                  |                                     | <br>                                     | 6                                | [FILL] (dry)<br>Reddish brown m-f SAND, some silt,                                                                                               |                           |                                                                              |                                                                |
|                                                                                                                 |                                                  | 66                                  | 0.3                                      | 10<br>13                         | occasional rock fragments                                                                                                                        |                           | FID = 0 ppm                                                                  |                                                                |
| 7_5                                                                                                             | S-4                                              | SS                                  | 0.3                                      | 10                               | [FILL] (dry)                                                                                                                                     |                           |                                                                              |                                                                |
| 8                                                                                                               |                                                  |                                     |                                          | 8                                | [ [,]                                                                                                                                            |                           | Auger to 8 feet                                                              |                                                                |
| +                                                                                                               |                                                  |                                     |                                          | 20                               | Reddish brown silty f SAND, trace f gra                                                                                                          | vel                       |                                                                              |                                                                |
| 9 8                                                                                                             | S-5                                              | SS                                  | 0.8                                      | 22                               | Yellow brown f SAND, some silt and c-f                                                                                                           |                           | FID = 1.5 ppm                                                                |                                                                |
|                                                                                                                 |                                                  |                                     |                                          | 100/1"                           | gravel, occasional concrete fragments                                                                                                            |                           | Refusal                                                                      |                                                                |
| 10                                                                                                              |                                                  |                                     |                                          |                                  | (FILL) (dry)                                                                                                                                     |                           | Auger to 10 feet<br>Augering at 9 fee                                        | t with 1 200 lbs (                                             |
|                                                                                                                 |                                                  |                                     |                                          |                                  | Boring completed at 9.5 feet -                                                                                                                   |                           | down pressure - r                                                            | no movement                                                    |
| 11                                                                                                              |                                                  |                                     |                                          |                                  |                                                                                                                                                  | i                         | Auger refusal                                                                |                                                                |
|                                                                                                                 | 1                                                |                                     | 1                                        |                                  |                                                                                                                                                  |                           | End 12:25                                                                    |                                                                |
| 12                                                                                                              |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
| <u>_</u>                                                                                                        |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
| 13                                                                                                              |                                                  |                                     |                                          | ]                                |                                                                                                                                                  |                           |                                                                              |                                                                |
| 14                                                                                                              |                                                  |                                     | 1                                        |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
|                                                                                                                 |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
| 15                                                                                                              |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
|                                                                                                                 |                                                  |                                     |                                          | .                                |                                                                                                                                                  |                           |                                                                              |                                                                |
| 16                                                                                                              |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
|                                                                                                                 | ĺ                                                |                                     |                                          | Į                                |                                                                                                                                                  |                           |                                                                              |                                                                |
| 17                                                                                                              |                                                  |                                     | ~ .                                      |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
|                                                                                                                 |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
| 18                                                                                                              |                                                  |                                     | ļ                                        | 1                                |                                                                                                                                                  |                           |                                                                              |                                                                |
| /                                                                                                               |                                                  |                                     |                                          |                                  | 1                                                                                                                                                |                           |                                                                              |                                                                |
| 19                                                                                                              |                                                  |                                     |                                          |                                  |                                                                                                                                                  |                           |                                                                              |                                                                |
| 20                                                                                                              | ĺ                                                | •                                   | I                                        |                                  |                                                                                                                                                  |                           | ł                                                                            |                                                                |
| 20                                                                                                              |                                                  |                                     |                                          |                                  | LANGAN Engineering a                                                                                                                             |                           |                                                                              |                                                                |

| Project I   | Nam   | e                                             |          | PSF              | LOG OF BORING NO: B-64<br>&G Former Front Street Gas Works Site |              | Sheet 1                          | ······································ |
|-------------|-------|-----------------------------------------------|----------|------------------|-----------------------------------------------------------------|--------------|----------------------------------|----------------------------------------|
| Boring L    |       |                                               | ·        | New              |                                                                 |              | ct No. 140660<br>Ition and Datum |                                        |
| Drilling    |       |                                               | ·        | CT&              |                                                                 |              |                                  | 12.03                                  |
| Drilling I  |       |                                               | t        | Mobi             | e Drill B-80                                                    | Date         | Started<br>9/24/97               | Date Finished                          |
| Size and    | Тур   | e of                                          | Bit      |                  |                                                                 | Comr         | oletion Depth                    | <u>9/24/97</u>                         |
| Casing      |       |                                               |          |                  |                                                                 | oom          | 18 ft                            | Rock Depth<br>Not Encountered          |
| Casing H    | lamr  | ner                                           | Weigt    | ht               | Drop                                                            | Water        | Level ~ 12 ft                    | INUL Encountered                       |
| Sampler     |       |                                               |          | 2" O.            |                                                                 | Drille       |                                  | Milliogo                               |
| Sampler     | Нап   | nmer \                                        | Weight   |                  |                                                                 | Inspe        |                                  |                                        |
| Depth       | s     | Type                                          | Recov.   | SPT              |                                                                 |              | <u> </u>                         |                                        |
| (ft)        |       | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,         | (ft)     | Ы/6 <sup>т</sup> | DESCRIPTION                                                     |              | REMAR                            | KS                                     |
| (11)        | ╉┈╍╍╸ | ¦                                             |          |                  | ASPHALT                                                         |              |                                  |                                        |
| 1-          | S-1   | ss                                            | 0.6      | 7                |                                                                 |              | Start 13:55                      |                                        |
| ·           | 1     |                                               | 0.0      | 24               | Reddish brown silty f SAND, trace c-f gra                       | avel,        | Auger through asp                | halt                                   |
| 2           | 1     |                                               |          | 26               | occasional coal and glass fragments<br>[FILL] (moist)           |              | PID = 0.1 ppm                    |                                        |
|             |       | <u>-                                     </u> | <u> </u> | 21               | [FILL] (moist)<br>Reddish brown f SAND, trace-some silt,        |              |                                  |                                        |
| 3           | S-2   | SS                                            | 0.5      | 27               | trace f gravel                                                  |              |                                  |                                        |
| <u>~</u>    |       |                                               | 0.0      | 24               |                                                                 |              | PID = 0.1 ppm                    |                                        |
| 4           |       |                                               |          | 26               | [FILL] (dry-moist)                                              |              | A                                |                                        |
| ; .         |       |                                               |          | 75               | Beddish brown f SAND trans and all                              |              | Auger to 4 feet                  |                                        |
| 5           | S-3   | SS                                            | 0.4      | 55               | Reddish brown f SAND, trace-some silt,<br>trace f gravel [FILL] |              |                                  |                                        |
|             |       |                                               | 0.1      | 22               |                                                                 |              | PID = 6 ppm                      |                                        |
| 6 d         | 1     | ł                                             |          | 20               | Black - Yellow silty f SAND                                     |              | <b>.</b>                         | _                                      |
|             |       |                                               |          | 15               |                                                                 |              | Brick fragment in ti             | p of spoon                             |
| 7           | S-4   | ss                                            | 1.2      | 9                | Yellow m-f SAND, trace sitt, occ. rock frag                     | g.           |                                  |                                        |
|             |       |                                               | 1.2      | 18               | Reddish brown silty f SAND, trace f grave                       | ii, ji       | PID = 0.5 ppm                    |                                        |
| 8           |       |                                               |          | 20               | occasional coal fragments [FILL] (moist-                        | -wet)        |                                  |                                        |
| <u> </u>    |       |                                               |          | 29               | Mottled m-f SAND, some silt, trace f grave                      |              | Auger to 8 feet                  |                                        |
| 9           | S-5   | ss                                            | 1.0      | 24               | Reddish brown m-f SAND, some silt, trace<br>c-f gravel          |              |                                  |                                        |
|             | Ŭ     |                                               | 1.0      | 19               | -                                                               |              | <sup>o</sup> ID = 55 ppm         |                                        |
| 10          | ł     |                                               |          | 14               | [SM] (moist-wet)                                                |              |                                  |                                        |
|             |       | +                                             | ·        |                  |                                                                 | /            | Auger to 10 feet                 |                                        |
| 11          |       |                                               | 1.3      |                  | Reddish brown silty m-f SAND, trace clay                        |              |                                  |                                        |
|             |       |                                               |          | 1                | and c-f gravel [SM] (moist-wet)                                 | <sup>F</sup> | PID = 65 ppm                     |                                        |
| 12          |       | ł                                             |          | 1.               | Brown SILT, some f sand [ML]                                    |              |                                  |                                        |
|             | -+-   |                                               |          |                  | Light brown m-f SAND, trace silt and c-f<br>gravel [SP]         | 1            |                                  |                                        |
| 13          |       |                                               | NR       | 12               | gravel [SP]                                                     |              |                                  |                                        |
| — <u> </u>  |       |                                               |          | 14               |                                                                 |              |                                  |                                        |
| 14          |       |                                               |          | 10               |                                                                 |              | . <b></b>                        |                                        |
| <u> </u>    |       |                                               | ——       |                  | ight brown m ( CAND                                             | A            | lock in tip of spoon             |                                        |
| 15          | 1     |                                               | 0.8      |                  | ight brown m-f SAND, some silt, trace clay                      | -            | uger to 14 feet                  |                                        |
|             |       |                                               | 0.0      | 3                | and f gravel                                                    | P            | ID = 2 ppm                       | I                                      |
| 16          |       |                                               |          | 4                | [SM] (wet)                                                      |              |                                  |                                        |
| <u>·</u>    |       |                                               |          |                  |                                                                 |              |                                  |                                        |
| 17          |       |                                               | 1.9      | 4 C<br>5         | Greenish gray silty CLAY                                        |              | _                                |                                        |
| — <u>··</u> |       |                                               | 1.5      |                  | [CL] (moist)                                                    | P            | ID = 0.5 ppm                     |                                        |
| 18          | 1     | -                                             |          | 6<br>5           |                                                                 |              |                                  |                                        |
|             |       |                                               |          |                  | oring completed at 18 feet                                      |              | nd 14:40                         |                                        |
| <b>I</b>    |       | 1                                             | 1        | 1                |                                                                 | 101          | IU 14.40                         |                                        |
| 19          |       |                                               |          | 1                |                                                                 |              |                                  | 1                                      |
| 19          |       |                                               |          | -                |                                                                 |              |                                  |                                        |
| 19<br>20    |       |                                               |          |                  |                                                                 |              |                                  |                                        |

Standard Penetration Test N-Value

LANGAN Engineering and Environmental Services, Inc. River Drive Center 1 Elmwood Park NL 07407 TIERRA-B-018290

| ŀ              |                          |      |         |        | 0054    | LOG OF BORING                             |                |         |           | Sheet 1<br>1406602 |               | 1<br>1 |
|----------------|--------------------------|------|---------|--------|---------|-------------------------------------------|----------------|---------|-----------|--------------------|---------------|--------|
|                | Project N                | _    |         |        |         | G Former Front Street Ga                  | is Works Site  | Projec  | t NO.     |                    | 7.16          |        |
| •••            | Boring L                 |      |         |        |         | rk, New Jersey<br>Environmental Services, | lac .          | Date S  |           | Datom              | Date Finis    |        |
|                | Drilling C<br>Drilling E |      |         |        |         | Drill B-80                                | mo             |         |           | 4/97               | 9/24/9        | ŀ      |
|                | Size and                 |      |         |        |         | I.D. Hollow Stem Auger                    |                | Compl   | etion De  |                    | Rock Dept     |        |
|                | Casing                   | тур  |         |        |         | I.D. Hollow Oten Auger                    |                |         | 2.5 ft    | <b></b>            | Not Encou     |        |
|                | Casing H                 | lamn | ner     | Weigh  |         | Drop                                      |                | Water   |           | Not Enco           | A             |        |
|                | Sampler                  |      |         | neigh  |         | ). Split Spoon                            |                | Driller |           | K. Mike I          |               |        |
|                | Sampler                  | Hom  | morV    | Voight | 2 0.0   | 140 lb Drop                               | 30"            | Inspec  | tor       | Elana Se           |               | [      |
|                | Sampler                  |      |         | Feight | 1       |                                           |                | T       |           |                    |               |        |
|                | Depth                    | s    | Туре    | Recov. | SPT     | DESCRI                                    | PTION          |         |           | REMAR              | KS            |        |
|                | (ft)                     | ļ    |         | (11)   | Ы/6™    |                                           |                | [       |           |                    |               |        |
|                |                          | I    |         |        |         | Gray f GRAVEL                             |                |         | Start 9:0 |                    |               |        |
| <del></del>    | 1                        |      |         |        |         |                                           |                |         | -         |                    | vel to 2 feet |        |
|                | _                        |      |         |        |         |                                           |                |         |           | ngs: Blac          | k silty SANE  | ,      |
|                | 2                        |      |         |        |         |                                           |                |         | wood      | CONCO              |               |        |
|                |                          |      | 00      |        | 100/2"  |                                           |                |         |           | CONCRI             | gh concrete   |        |
| :              | 3                        | S-1  | SS      | NR     |         |                                           |                |         |           |                    | eath concret  |        |
|                |                          |      |         |        | _       |                                           |                |         |           |                    |               |        |
|                | 4_                       |      |         |        |         | Boring completed at 2.5 I                 |                |         | End 10:3  | 0                  |               |        |
|                | 5                        |      |         |        |         | Boring completed at 2.5 i                 | eel            | [       |           | 0                  |               |        |
| ·              | 5                        |      |         |        |         |                                           |                |         |           |                    |               |        |
|                | 6                        |      |         |        |         |                                           | . •            |         |           |                    |               |        |
|                |                          |      |         |        |         |                                           |                |         |           |                    |               | l      |
|                | 7                        |      |         |        |         |                                           |                |         |           |                    |               |        |
| . 1            |                          |      |         |        |         |                                           |                |         |           |                    |               |        |
|                | 8                        |      |         |        |         |                                           |                |         |           |                    |               |        |
| -              |                          |      |         |        |         |                                           |                |         |           |                    |               |        |
|                | 9                        |      |         |        |         |                                           |                |         |           |                    |               |        |
|                |                          |      |         |        |         |                                           |                |         |           |                    |               |        |
|                | 107                      |      |         |        |         |                                           |                |         |           |                    |               |        |
| ſ              | ]                        |      |         |        |         |                                           | -              |         |           |                    |               |        |
|                | 11                       |      |         |        |         |                                           |                | ,       |           |                    |               |        |
|                |                          | - [  |         |        |         |                                           |                |         |           |                    |               |        |
| Ļ              | 12                       |      |         | -      |         |                                           |                |         |           |                    |               | ļ      |
|                |                          | Í    |         |        |         |                                           |                |         |           |                    |               |        |
| ┟              | 13                       |      |         |        |         |                                           |                |         |           |                    |               |        |
|                |                          | Į    |         |        |         |                                           |                |         |           |                    |               |        |
| -              | 14                       |      |         | Ì      | 1       |                                           |                |         |           |                    |               |        |
|                | 15                       |      |         |        |         |                                           |                |         |           |                    |               |        |
| - i  -         |                          |      |         |        |         |                                           |                |         |           |                    |               | 1      |
|                | 16                       |      |         |        |         |                                           |                |         |           |                    |               |        |
| F              |                          |      |         |        | -       |                                           |                |         |           |                    |               |        |
|                | 17                       | ĺ    | İ       |        |         |                                           |                |         |           |                    |               |        |
| F              |                          |      |         | ļ      |         |                                           |                |         |           |                    |               |        |
|                | 18                       |      |         | · ~ .  |         |                                           |                | Į       |           |                    |               |        |
| _ <b>} ∤</b> − |                          |      |         |        |         |                                           |                |         |           |                    |               |        |
| <b>S</b> .     | / 19                     |      |         |        |         |                                           |                |         |           |                    |               |        |
| Ť              |                          |      |         |        |         |                                           |                |         |           |                    |               |        |
|                | 20                       |      | ·       |        |         |                                           |                |         |           |                    |               |        |
| ſ              |                          |      |         |        |         |                                           |                |         |           |                    | <u> </u>      |        |
| ŀ              | Standard                 | Pene | tration | Test N | I-Value |                                           | ngineering ar  |         |           |                    |               |        |
| L              | <u> </u>                 |      |         |        |         |                                           | r Drive Center | 1, Elmv | vood Par  | k, NJ _0'          | 7407          |        |
| -              |                          |      |         |        |         |                                           |                |         |           |                    | TIERRA-B-     | 018291 |

|            |      |        |            |        |                                            | 3-7A     | Sheet 1              |                 |
|------------|------|--------|------------|--------|--------------------------------------------|----------|----------------------|-----------------|
| roject N   |      |        |            |        | G Former Front Street Gas Works Si         |          | ect No. 1406602      | 9.13            |
| Boring Lo  |      |        |            |        | k, New Jersey                              |          | ation and Datum      |                 |
| )rilling C |      |        |            |        | Environmental Services, Inc.               |          | Started              | Date Finished   |
| )rilling E | quip | ment   |            |        | Drill B-80                                 |          | 9/24/97              | 9/24/97         |
| Size and   | Туре | e of B | Sit -      | 4-1/4" | I.D. Hollow Stem Auger                     |          | pletion Depth        | Rock Depth      |
| Casing     |      |        |            |        |                                            |          | 18 ft                | Not Encountered |
| Casing H   | amm  | ner    | Weight     | t      | Drop                                       |          | er Level ~ 7.5 ft    |                 |
| Sampler    |      |        |            | 2" O.D | ). Split Spoon                             | Drille   | e <b>r K. Mike</b>   | Millican        |
| Sampler I  | Ham  | mer V  | Veinht     |        | 140 lb Drop 30"                            | Insp     | ector Elana Se       | eelman          |
|            |      |        | 1          | r —    |                                            |          | DEMAR                | KC              |
| Depth      | S    | Type   | Recov.     | SPT    | DESCRIPTION                                |          | REMAR                | ND              |
| (f1)       |      |        | (ft)       | Ы/6"   |                                            |          |                      |                 |
|            |      |        |            | 23     | VEGETATION                                 |          | Start 12:35          |                 |
| 1          | S-1  | SS     | 0.7        | 9      | Light brown f SAND, some silt, trace       | c-f      | FID = 0 ppm          |                 |
|            |      |        |            | 7      | gravel, occasional concrete and brid       | k        |                      |                 |
| 2.         |      |        |            | 10     | fragments [FILL] (dry-mo                   | ist)     |                      |                 |
|            |      |        |            | 22     |                                            |          |                      |                 |
| 3          | S-2  | SS     | 0.5        | 24     | BRICK fragments                            |          | FID = 0 ppm          |                 |
|            | 52   |        |            |        | Black COAL ASH                             |          | Refusal              | ł               |
| 4          |      |        | 1          |        | [FILL] (dry)                               |          | Auger to 4 feet      | [               |
|            |      |        |            | 8      | Brown - Black f sandy SILT, trace f        | oravel.  | 1 -                  |                 |
|            | S-3  | SS     | 0.3        | 10     | occasional brick and concrete fragm        |          | FID = 0 ppm          |                 |
| 5          | 2-3  | ు      | 0.5        |        |                                            | 0.110    | r te - Fr            |                 |
|            |      |        |            | 6      | [FILL] (dry)                               |          |                      |                 |
| 6          |      |        |            | 4      | Deddich has an é CAND, como oit            | traca    |                      |                 |
|            |      |        |            | 4      | Reddish brown m-f SAND, some sit           | , lace   | FID = 0 ppm          |                 |
| 7          | S-4  | SS     | 0.3        | 5      | clay and f gravel                          |          |                      |                 |
|            |      |        |            | 2      | [FILL] (moist-v                            | vet)     | Augusta 9 feat       |                 |
| 8          |      |        | . <u> </u> | 1      |                                            |          | Auger to 8 feet      |                 |
|            |      |        |            | 8      | Brown c-f SAND, trace silt, occasior       | al       |                      |                 |
| 9          | S-5  | SS     | 0.7        | 5      | brick fragments                            |          | PID = 0.1 ppm        |                 |
|            |      |        | -          | 7      | [FILL] (wet)                               |          | Brick in tip of spoo | n               |
| 10         |      |        |            | 4      |                                            |          | Auger to 10 feet     |                 |
|            |      |        |            | 5      | Brown silty f SAND                         |          |                      |                 |
| 11         | S-6  | SS     | 0.7        | 8      | Brown c-f gravelly SAND                    |          | PID = 0 ppm          |                 |
|            |      |        |            | 4      | [FILL] (wet)                               |          |                      |                 |
| 12         |      |        |            | 6      |                                            |          |                      |                 |
|            |      |        |            | 4      |                                            |          |                      |                 |
| 13         | S-7  | SS     | NR         | 6      |                                            |          |                      |                 |
|            | 5-7  | 55     |            | 5      |                                            |          | Rock in tip of spoo  | n               |
|            | ļ    |        |            | 5<br>7 |                                            |          | Auger to 14 feet     |                 |
| 14         |      |        |            |        | I<br>I Drown either & CAND trace elever of | casional |                      |                 |
|            |      |        |            | 5      | Brown silty m-f SAND, trace clay, oc       | casional | PID = 0 ppm          |                 |
| 15         | S-8  | SS     | 0.1        |        | wood (0) f                                 |          |                      |                 |
| L          |      |        |            | 1      | [SM] (wet)                                 |          |                      |                 |
| 16         |      |        |            | - 2    | • • • • • • • • • • • • • • • • • • •      |          | -                    |                 |
|            | Ī    | ]      |            | 1      | Greenish gray silty CLAY, trace f sa       | nd and   |                      | 1               |
| 17         | S-9  | SS     | 0.5        | 1      | f gravel                                   |          | PID = 0.1 ppm        |                 |
| 1          |      |        | ~ _        | 3      | [CL] (moist)                               |          |                      |                 |
| 18         | ł    |        |            | 2      |                                            | ·        |                      |                 |
|            | ł    |        |            |        | Boring completed at 18 feet                |          | End 13:25            | 1               |
| 19         |      |        |            |        |                                            |          |                      | 1               |
|            |      |        |            | -      |                                            |          |                      |                 |
|            |      | •.     |            |        |                                            |          |                      | -               |
|            |      | 1      |            |        | 1                                          |          |                      | 1               |
| 20         |      |        |            |        |                                            |          |                      | 1               |

| Project N  |      |        |          |                | G Former From   |                            | Project No. 1406602<br>Elevation and Datum 7.15 |         |           |             |                    |
|------------|------|--------|----------|----------------|-----------------|----------------------------|-------------------------------------------------|---------|-----------|-------------|--------------------|
| Boring Lo  |      |        |          |                | k, New Jersey   | Date Started Date Finished |                                                 |         |           |             |                    |
| Drilling C |      |        |          |                | Environmenta    | Services, in               | <u>.                                    </u>    | Date 5  |           | 3/97        | 9/23/97            |
| Drilling E | quip | ment   |          |                | Drill B-80      |                            |                                                 | Comp    | letion De |             | Rock Depth         |
| Size and   | Туре | e of E | Bit      |                | I.D. Hollow St  | em Auger                   | <b>-</b>                                        |         | 20 ft     | pui         | Not Encounte       |
| Casing     |      |        |          | •••            |                 | D                          |                                                 | Water   |           | ~ 7 ft      | THOI Encourne      |
| Casing H   | amm  | ier    | Weigh    |                |                 | Drop                       |                                                 | Driller |           | K. Mike     | Millican           |
| Sampler    |      |        | ,        | 2" O.L         | . Split Spoon   |                            |                                                 |         |           | Ed Zofch    |                    |
| Sampler I  | Ham  | mer V  | Veight   | <del></del>    | 140 lb          | Drop                       | 30"                                             | Inspec  |           | LU 20101    |                    |
| Depth      | s    | Type   | Recov.   | SPT            |                 | DESCRIP                    | ΓΙΟΝ                                            |         |           | REMAR       | KS                 |
| (ft)       | _    |        | (ft)     | ь <i>і</i> /6" |                 |                            |                                                 |         |           |             |                    |
|            |      |        |          | 8              | Dark brownis    | h gray f SANI              | , trace-some                                    | e silt, | Start 13: | 50          |                    |
| 1          | S-1  | SS     | 0.4      | 100/1"         | trace c-m sar   |                            |                                                 |         | Refusal   |             |                    |
|            | •    |        |          |                | CONCRETE        | [FILL]                     | (dry)                                           |         | FID = 0 p | •           |                    |
| 2          |      |        |          | ł              | Brown - Gray    | c-f SAND, tra              | ace-some silt                                   | , trace |           |             | ugh concrete       |
|            |      |        | <u> </u> | 46             | fgravel         |                            |                                                 |         | Auger to  |             |                    |
| 3          | S-2  | SS     | 0.7      |                | COAL/Crushe     | d CINDERS                  |                                                 |         | FID = 0 p | pm          |                    |
|            | . –  |        |          | l              | [FILL]          |                            | (dry)                                           |         | Refusal   |             |                    |
| 4          |      |        | ł        |                |                 |                            |                                                 |         | Auger to  | 4 feet      |                    |
|            |      |        | [        | 8              | Brown - Dark    | gray c-m GR                | AVEL, some                                      | c-f     |           |             |                    |
| 5          | S-3  | SS     | 1.1      | 2              | sand, trace si  | lt, occasional             | cement fragi                                    | ment    | FID = 0.1 | l ppm       |                    |
|            |      | !      |          | 3              | FILL]           |                            | (dry)                                           |         |           |             |                    |
| 6          |      |        |          | 4              |                 |                            |                                                 |         |           |             |                    |
|            |      |        |          | 2              |                 |                            |                                                 |         |           |             |                    |
| 7          | S-4  | SS     | 1.2      | 1              | CONCRETE        |                            | -                                               |         | FID = 8-  | • •         |                    |
|            |      |        |          | 3              | Dark gray - D   |                            |                                                 |         | <b>.</b>  | troleum o   |                    |
| 8          |      |        |          | 1              | some silt, trad |                            | [FILL] (mo                                      |         |           |             | ith free product   |
|            |      |        |          | 2              | Dark gray c-f   | SAND, trace-               | some silt, tra                                  | ace     | Auger to  |             |                    |
| 9          | S-5  | SS     |          | 2              | fgravel         |                            |                                                 |         | FID = 30  | • •         | loum odor          |
| _          |      |        |          | 2              | [FILL]          |                            | (wet)                                           |         |           | of free pro | leum odor<br>oduct |
| 10         |      |        |          | 2              |                 |                            |                                                 |         | Auger to  | •           |                    |
| 4          |      |        |          | 2              | Dark gray - B   |                            |                                                 |         | FID = 70  |             |                    |
| 11         | S-6  | SS     | 1.2      |                | trace f gravel, | occasional D               | (wet)                                           | 12      |           |             | alene Odor         |
|            |      |        |          | 5              | [FILL]          |                            | (wei)                                           |         | Free pro  | -           |                    |
| 12         |      |        |          | 6              | Derly areas D   | ank Brown                  |                                                 |         | riec più  | 0001        |                    |
|            |      | 00     |          | 2              | Dark gray - B   |                            | , i onnu, ild                                   |         | FID = 30  | -100 ppm    | 1                  |
| 13         | S-7  | SS     | 1.0      |                | some silt, trac | e c-i gravei               | (wet)                                           |         | Petroleur | • •         |                    |
|            | ļ    |        |          | 4              | (FILL)          |                            | (men                                            |         | Free proc |             |                    |
| 14         |      |        |          | 3              |                 | •                          |                                                 |         | Auger to  |             |                    |
| ╻╻┥        | ا م  | SS     |          | ר<br>WH        |                 |                            |                                                 |         |           |             |                    |
| 15         | S-8  | ఎర     | NR       | WH<br>WH       |                 |                            |                                                 |         |           |             |                    |
|            |      |        |          |                |                 |                            |                                                 |         |           |             |                    |
| 16         |      |        |          | -WH            | Dark gray - Bl  | ack organia (              | II T trace fo                                   | sand    |           |             |                    |
| <u>_</u>   |      |        |          | 2              |                 | ack organic t              |                                                 |         | Petroleur | n Odor      |                    |
| 17         | S-9  | SS     | 0.8      | 1              | [OL]            |                            | (wet)                                           |         | Free proc |             |                    |
|            |      |        | ∼ .      | 1              |                 |                            |                                                 |         | Auger to  |             |                    |
| 18         |      |        |          | 2              | Dark areas      | nak aranala C              |                                                 |         | nuger to  |             |                    |
|            |      | ~      | <u> </u> | 5              | Dark gray - Bl  |                            |                                                 | ' I     | Petroleur | n Odor      |                    |
| 19_        | S-   | SS     | 0.7      |                | sand            | [OL]                       | (wet)                                           |         | Free proc |             |                    |
| <u>_</u>   | 10   | .      |          | 7              | TIMBER          |                            | n eilt tr m.f.                                  |         |           |             |                    |
| 20         |      |        |          | 5              | Dk. gry-Blk c-  |                            |                                                 | yiavçi  | End 15:0  | 0           | <u></u>            |
|            |      |        |          |                | Boring comple   | eleo al 20 tee             | gineering a                                     |         |           |             |                    |

| ject No.       1406602         ration and Datum       9.74         a Started       Date Finished         9/24/97       9/24/97         npletion Depth       Rock Depth         14 ft       Not Encounter         er       K. Mike Millican         ector       Elana Seelman         REMARKS       Start 7:55         Auger through asphalt       FID = 0 ppm         FID = 0 ppm       Auger to 4 feet         FID = 0 ppm       FID = 0 ppm         FID = 0 ppm       FID = 0 ppm |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Started     Date Finished       9/24/97     9/24/97       Appletion Depth     Rock Depth       14 ft     Not Encounter       er     K. Mike Millican       ector     Elana Seelman       REMARKS       Start 7:55       Auger through asphalt       FID = 0 ppm       Auger to 4 feet       FID = 0 ppm                                                                                                                                                                             |
| 9/24/979/24/97npletion Depth<br>14 ftRock Depth<br>Not EncountererLevel- 5.5 fterK. Mike MillicanectorElana SeelmanREMARKSStart 7:55Auger through asphaltFID = 0 ppmAuger to 4 feetFID = 0 ppm                                                                                                                                                                                                                                                                                      |
| Impletion DepthRock Depth14 ftNot Encounterer Level- 5.5 fterK. Mike MillicanectorElana SeelmanBEMARKSStart 7:55Auger through asphaltFID = 0 ppmAuger to 4 feetFID = 0 ppm                                                                                                                                                                                                                                                                                                          |
| 14 ft     Not Encounter       er     Level     - 5.5 ft       er     K. Mike Millican       ector     Elana Seelman       REMARKS       Start 7:55       Auger through asphalt       FID = 0 ppm       Auger to 4 feet       FID = 0 ppm                                                                                                                                                                                                                                            |
| er Level - 5.5 ft<br>er K. Mike Millican<br>ector Elana Seelman<br>REMARKS<br>Start 7:55<br>Auger through asphalt<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                  |
| er K. Mike Millican<br>ector Elana Seelman<br>REMARKS<br>Start 7:55<br>Auger through asphalt<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                       |
| Elana Seelman       REMARKS       Start 7:55       Auger through asphalt       FID = 0 ppm       Auger to 4 feet       FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                  |
| REMARKS<br>Start 7:55<br>Auger through asphalt<br>FID = 0 ppm<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                      |
| Start 7:55<br>Auger through asphalt<br>FID = 0 ppm<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                 |
| Auger through asphalt<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                              |
| Auger through asphalt<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                              |
| FID = 0 ppm<br>FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                        |
| FID = 0 ppm<br>Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Auger to 4 feet<br>FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Auger to 8 feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FID = 0 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FID = 4 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Auger to 10 feet                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FID = 10 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Brick in tip of spoon                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FID = 10 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| End 8:35                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| vironmental Services, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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| Drilling CompanyCT&E Environmental Services, Inc.Date StartedDate FinisheDrilling EquipmentMobile Drill B-809/22/979/22/97Size and Type of Bit4-1/4" I.D. Hollow Stem AugerCompletion DepthRock Depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Project N<br>Boring L |          |            |        |          | G Former Front Street G<br>rk, New Jersey |                                                                                                                  | Project No. 1406602<br>Elevation and Datum 8.62 |            |          |               |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------|------------|--------|----------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------|----------|---------------|--|
| Drilling<br>Site and<br>Type of Bit<br>A 11/4 LD. Hollow Stem AugerCompletion Depth<br>Completion Depth<br>18 ft $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/22/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2/37$ $9/2$                                                                                                                                                                                                                              |                       |          |            |        |          |                                           | , Inc.                                                                                                           | Date S                                          | Started    |          | Date Finished |  |
| Size and Type of Bit4-1/4" I.D. Hollow Stem AugerCompletion DepthRock DepthCompletion DepthRock DepthCompletion DepthRock DepthCompletion DepthRock DepthSampler2" O.D. Split SpoonDrillerK. Mike MillicanSampler2" O.D. Split SpoonDifferK. Mike MillicanSamplerV O.D. Split SpoonDifferK. Mike MillicanSamplerV O.D. Split SpoonDifferK. Mike MillicanSamplerV O.D. Split SpoonDifferK. Mike MillicanSamplerV O.D. Split SpoonDifferK. Mike MillicanSamplerDEpth Mathemer WeightJob Colspan="4">Job Colspan="4">Aster Mathematican10Sampler MathematicanSampler MathematicanSampler MathematicanSampler Mathematican10<                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |          |            |        |          |                                           | -                                                                                                                | 7                                               | 9/22       | 2/97     | 9/22/97       |  |
| CasingINOT EncounteCasing HammerWeightINOT EncounteCasing HammerWeight140 lbDrop30"InspectorElana SeelmanSamplerHammer Weight140 lbDrop30"InspectorElana SeelmanDepthSTypeRecov.SPTDESCRIPTIONREMARKS(m)STypeRecov.SPTDESCRIPTIONREMARKS(m)S10Gasonal brick and glass fragmentsStart 14:252S0.44Black - Gray silly 1 SAND, trace c+1 gravel.Auger through asphalt210If ILI(dry)Start 14:253Soccasional brick and glass fragmentsFID = 0 ppm42S0.21342S152gravel, occasional brick and glass fragments42S1.52gravel, occasional brick fragments5S-3SS1.52gravel, occasional brick fragments61.46Brown clayey SILT, trace c-1 sand and f7S-4SS1.46gravel, occasional brick fragments9S-5SS1.42gravel9S-5SS1.42gravel9S-6SS1.52gravel9S-7SS0.513910Brown clayey SILT, trace cl sand and f91010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |          |            |        |          |                                           |                                                                                                                  | Comp                                            | letion Dep | oth      | Rock Depth    |  |
| Casing HammerWeightDropWater Level6 ftSampler2" O.D. Split SpoonDrop30"InspectorElana SeelmanDeptin\$TypeRecev.SPTDESCRIPTIONREMARKS(m)5.1SS0.441Black - Gray silly I SAND, trace c-I gravel,<br>occasional brick and glass fragmentsStart 14-25210[FILL](dry)Auger through asphalt210[FILL](dry)3S-2SS0.21342Brown CLAY, trace f sandAuger to 4 feet5S-3SS1.52gravel, occasional brick fragments42Brown CLAY, trace f sand and fPID = 0 ppm5S-3SS1.46gravel, occasional brick fragments61.52gravel, occasional brick fragmentsPID = 0 ppm61.43Brown claye SILT, trace c-f sand and f7S-4SS1.46gravel, SAND, trace f gravel9S-5SS1.439S-5SS1.41011S-6SS1.5229S-7SS0.510[FILL](wet)9S-5SS1.49S-7SS1.510[FILL](wet)11S-6SS1.51222gravel13S-7SS0.5 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>T</td> <td></td> <td></td> <td>Not Encounte</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |          |            |        |          |                                           |                                                                                                                  | T                                               |            |          | Not Encounte  |  |
| 2* 0.D. Split SpoonDrillerK. Mike MillicanSampler Harmer Weight140 lbDropOriginationFind the MillicanSampler Harmer Weight140 lbDropOriginationFind the MillicanDescriptionREMARKSImage: Sampler Harmer Weight140 lbDropOriginationFind the MillicanDescriptionREMARKSImage: Sampler Harmer WeightApple Recov.Sampler K. Mike MillicanImage: Sampler Harmer Weight140 lbDrop 30°InspectorElana SeelmanImage: Sampler Harmer WeightApple Recov.Sampler Marker MillicanImage: Sampler Harmer WeightApple Recov.REMARKSImage: Sampler Harmer WeightApple Harmer MeightApple Harmer MeightREMARKSSampler Marker Marker Marker Gray silly I SAND, trace of gravel,<br>(rg)Gender Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker Marker                                                                                                                                                                                                                                                                                          |                       | lamn     | ner        | Weight | t        | Drop                                      |                                                                                                                  | Water                                           | Level      |          |               |  |
| Sampler Hammer Weight140 lbDrop30"InspectorElana SeelmanDepth<br>(m)STypeRecov.<br>(tt)SPT<br>(tt)DESCRIPTIONREMARKS1S-1SS0.441Black-Cray silty I SAND, trace c-I gravel,<br>occasional brick and glass fragments<br>(m)Start 14:252-ASPHALTStart 14:262-ASPHALTStart 14:262-10[FILL](dry)3S-2SS0.2113S-2SS0.213occasional brick and glass fragments<br>(moist)PID = 1.5 ppm4-2Brown CLAY, trace f sandAuger to 4 feet5S-3SS1.52gravel, occasional brick fragments<br>(moist-wet)PID = 0 ppm6-2Brown Claye SILT, trace c-1 sand and f<br>gravel, occasional brick fragments<br>Brown c-1 gravelly SAND, trace f sand and f<br>gravel, occasional brick fragments<br>Brown c-1 gravelly SAND, trace f sand and f<br>gravel (CCasional brick fragments)PID = 0 ppm9S-5SS1.44Brown C-1 gravelly SAND, trace f gravel<br>(FILL]Auger to 8 feet9S-5SS1.522gravel[FILL](wet)10I141010[FILL](wet)11S-6SS1.522gravelly SAND, trace f gravell11S-6SS1.522gravelly SAND, trace f gravell11S-6SS1.522gravelly                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |          |            |        | 2" O.C   | ). Split Spoon                            |                                                                                                                  | Driller                                         |            | K. Mike  | Millican      |  |
| Depth<br>(ft)STypeRec.v.<br>(ft)SPT<br>butDESCRIPTIONREMARKS1S.1SS0.4ASPHALTStart 14:25<br>Auger through asphalt2-10FillL1(dry)3S.2SS0.213<br>0bick - Gray sity I SAND, trace c-f gravel,<br>occasional brick and glass fragments<br>occasional brick and glass fragments<br>(dry)Auger through asphalt<br>PID = 0 ppm46<br>6FillL1<br>2(moist)4-2Brown clayey SLT, trace c-f gravel,<br>(gravel, occasional brick fragments<br>(moist)PID = 0 ppm5S-3SS1.52<br>2gravel, occasional brick fragments<br>(gravel, occasional brick fragments<br>Brown clayey SLT, trace c-f sand and f<br>gravel, occasional brick fragments<br>Brown c-f gravely SAND, trace fill and clay<br>Brown n-f SAND, some silty clay, trace f<br>gravel, occasional brick fragments<br>Brown c-f gravel<br>(moist-weth)PID = 0 ppm6-2gravel(FILL1)<br>(wet-moist)Nuger to 8 feet9S-5SS1.46<br>(gravel (Gravel) SAND, trace f gravel<br>(FILL1)<br>(wet)PID = 0 ppm10-10Gravel<br>(FILL1)<br>(wet)Nuger to 10 feet11S-6SS1.522<br>(gravelgravel12-22gravel(FILL1)<br>(wet)Nuger to 10 feet11S-6SS0.513<br>(FILL2)(ret)PID = 10 ppm12-2222Black c-f gravelly SAND, trace fill<br>(FILL2) <b< td=""><td></td><td>Ham</td><td>mer V</td><td>Veiaht</td><td></td><td></td><td>30"</td><td>Inspec</td><td>ctor</td><td>Elana Se</td><td>eelman</td></b<>                                                                                                    |                       | Ham      | mer V      | Veiaht |          |                                           | 30"                                                                                                              | Inspec                                          | ctor       | Elana Se | eelman        |  |
| Lip in<br>(ff)SSAASPHALTStart 14:251Start 14:25Auger through asphalt210FILU(dry)3S:2SS0.2171017Black - Gray sity f SAND, trace c-f gravel,<br>occasional brick and glass fragmentsPID = 0 ppm4217Black - Gray sity f SAND, trace c-f gravel,<br>occasional brick and glass fragmentsPID = 1.5 ppm422Brown CLAY, trace f sandAuger to 4 feet5S:3SS1.52gravel, occasional brick fragmentsPID = 0 ppm622Grown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragmentsPID = 0 ppm622Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragmentsPID = 0 ppm622gravel, occasional brick fragmentsPID = 0 ppm7S:4SS1.46gravel, occasional brick fragmentsPID = 0 ppm622gravel(moist)PID = 0 ppm7S:4SS1.43Brown clays silty c-f SAND, trace f<br>gravelAuger to 8 feet95S:5SS1.510Brown - Dark gray silty c-f SAND, trace f<br>gravelPID = 10 ppm1016[FILL](wet)Sheen on water1222Reddish brown silty f SAND, trace siltPID = 10 ppm13S:7SS0.513[FILL](wet)141819                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |          |            |        |          | 1                                         |                                                                                                                  |                                                 |            | REMAR    | KS            |  |
| 1Start 14:25Start 14:251S-1SS0.441Black - Gray slity 1 SAND, trace c-I gravel, occasional brick and glass fragments<br>FILL]PID = 0 ppm21017Black - Gray slity 1 SAND, trace c-I gravel, occasional brick and glass fragments<br>FILL]PID = 1.5 ppm3S-2SS0.213occasional brick and glass fragments<br>FILL]PID = 1.5 ppm42Brown Clayey SILT, trace c-I sand and 1<br>gravel, occasional brick fragments<br>FILL]PID = 0 ppm5S-3SS1.52gravel, occasional brick fragments<br>gravel, occasional brick fragments<br>Brown clayey SILT, trace c-I sand and f<br>gravel, occasional brick fragments<br>Brown c-I gravely SAND, trace slit and clay<br>Brown m-1 SAND, some slity clay, trace f<br>gravelPID = 0 ppm84Brown n-1 SAND, some slity clay, trace f<br>gravel<br>[FILL](wet)Auger to 8 feet9S-5SS1.43Reddish brown silty 1 SAND, trace f gravel<br>[FILL](wet)1016Brown n-Dark gray silty c-I SAND, trace f<br>gravelAuger to 10 feet11S-6SS1.522gravel1222Black c-f gravelly SAND, trace f gravel<br>[FILL](wet)13S-7SS0.513[FILL]1418Black c-f gravelly SAND, occasional brick<br>fragmentsPID = 10 ppm1418Black c-f gravelly SAND, trace silt<br>[FILL]PID = 10 ppm15S-8SS1.329Black c-f gravelly SAND, trace silt<br>                                                                                                                                                                                                | -                     | 5        | Туре       |        | ŀ        | DESUR                                     |                                                                                                                  |                                                 | ÷ ,        |          |               |  |
| 1S-1SS0.441Black - Gray sity f SAND, trace c-f gravel, occasional brick and glass fragments<br>occasional brick and glass fragmentsAuger through asphalt<br>PID = 0 ppm210[FILL](dy)3S-2SS0.21342Brown CLAY, trace f gravel, occasional brick and glass fragments<br>[FILL](moist)42Brown CLAY, trace f sand<br>gravel, occasional brick fragmentsAuger to 4 feet5S-3SS1.52gravel, occasional brick fragmentsPID = 0 ppm622Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragmentsPID = 0 ppm7S-4SS1.46gravel, occasional brick fragments9S-5SS1.46gravel (FILL](moist-wet)9S-5SS1.43gravel (FILL](wet-moist)9S-5SS1.43gravel (FILL](wet)1016[FILL](wet)Auger to 8 feet9S-5SS1.43gravel[FILL]11S-6SS1.522gravel[FILL]1222SAD, trace siltPID = 10 ppm13S-7SS0.513[FILL](wet)14141819Black c-f gravelly SAND, trace siltPID = 10 ppm15S-8SS0.710[FILL](wet)162.2S1.32.9 <td>(ft)</td> <td>ļ</td> <td><u> </u></td> <td>(ft)</td> <td><u>+</u></td> <td></td> <td>· · · · · · · · · · · · · · · · · · ·</td> <td><u></u></td> <td>Start 14:2</td> <td>25</td> <td></td>                                                                                                                                                                                                                                                                                                                                    | (ft)                  | ļ        | <u> </u>   | (ft)   | <u>+</u> |                                           | · · · · · · · · · · · · · · · · · · ·                                                                            | <u></u>                                         | Start 14:2 | 25       |               |  |
| 20000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000 <th< td=""><td></td><td></td><td><b>C</b>C</td><td></td><td></td><td></td><td>D trace c-f ora</td><td>vel</td><td></td><td></td><td>phalt</td></th<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |          | <b>C</b> C |        |          |                                           | D trace c-f ora                                                                                                  | vel                                             |            |          | phalt         |  |
| 210[FILL]<br>(dry)Auger grinding at 1 foot3S-2SS0.213<br>is casional brick and glass fragments<br>(FILL)(moist)Auger to 4 feet42Brown CLAY, trace f sand<br>gravel, occasional brick fragments<br>(FILL)(moist)Auger to 4 feet5S-3SS1.52<br>gravel, occasional brick fragments<br>(FILL)(moist-wet)622A<br>gravel, occasional brick fragments<br>Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel (accasional brick fragments<br>B rown clayey SILT, trace c-f sand and f<br>gravel (accasional brick fragments<br>B rown m-f gravelly SAND, trace f gravel<br>gravel<br>(FILL)<br>(wet)PID = 0 ppm101010Brown - Dark gray silty c-f SAND, trace f<br>gravel<br>gravel<br>gravel<br>(FILL)<br>(wet)PID = 10 ppm11S-6SS1.510Brown clayer silty f SAND, trace f gravel<br>gravel<br>gravel<br>(FILL)<br>(wet)PID = 10 ppm122S1.32S13S-7SS0.51.3[FILL]<br>(wet)PID = 10 ppm141818FILL]<br>(wet)Sheen on water15S-8< | 1                     | 12-1     | 22         | 0.4    | 1        |                                           |                                                                                                                  | v 0.1                                           | •          |          |               |  |
| 11111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111 <th< td=""><td>~</td><td>-</td><td></td><td></td><td></td><td>-</td><td>-</td><td></td><td></td><td>•</td><td>1 foot</td></th<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ~                     | -        |            |        |          | -                                         | -                                                                                                                |                                                 |            | •        | 1 foot        |  |
| 3S-2SS0.213occasional brick and glass fragments<br>(FILL)<br>Brown CLAY, trace f sand<br>(moist)PID = 1.5 ppm42Brown CLAY, trace f sand<br>gravel, occasional brick fragments<br>(moist)Auger to 4 feet5S-3SS1.52gravel, occasional brick fragments<br>(moist)PID = 0 ppm622[FILL]<br>(moist)(moist)PID = 0 ppm622[FILL]<br>(moist)PID = 0 ppm7S-4SS1.44Brown clayey SILT, trace cl sand and f<br>gravel, occasional brick fragments<br>Brown cl gravelly SAND, trace silt and clay<br>Brown cl gravelly SAND, trace f gravelPID = 0 ppm84Brown m-f SAND, some silty clay, trace f<br>gravelPID = 0 ppm9S-5SS1.42gravel1016[FILL]<br>(wet)(wet)PID = 0 ppm11S-6SS1.522gravel122Pidish brown silty f SAND, trace f gravelPID = 10 ppm1222Reddish brown silty f SAND, trace filtPID = 17 ppm13S-7SS0.513[FILL]<br>(wet)PID = 17 ppm1418If1.329[FILL]<br>(wet)PID = 10 ppm15S-8SS0.710If[FILL]<br>(wet)Sheen on water15S-9SS1.329[FILL]<br>(wet)[FILL]<br>(wet)PID = 50 ppm1622Black c-1 gravelly SAND,                                                                                                                                                                                                                                                                                                                                                                                                                          | 2                     | <b> </b> |            |        | 1        |                                           |                                                                                                                  | vel                                             | , ago, g   |          |               |  |
| 00100010000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000 <th< td=""><td>°_</td><td>0 1</td><td>60</td><td>02</td><td>ŧ</td><td></td><td></td><td></td><td>PID = 1.5</td><td>mag</td><td></td></th<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | °_                    | 0 1      | 60         | 02     | ŧ        |                                           |                                                                                                                  |                                                 | PID = 1.5  | mag      |               |  |
| 42Brown CLAY, trace f sandAuger to 4 feet5S-3SS1.52gravel, occasional brick fragmentsPID = 0 ppm622gravel, occasional brick fragmentsPID = 0 ppm622Brown clayey SILT, trace c-f sand and fgravel, occasional brick fragmentsPID = 0 ppm7S-4SS1.44Brown clayey SILT, trace c-f sand and fgravel, occasional brick fragmentsPID = 0 ppm84Brown clayey SILT, trace c-f sand and fgravel, occasional brick fragmentsPID = 0 ppm84Brown c-f graveliy SAND, trace silt and clayAuger to 8 feet9S-5SS1.43Reddish brown silty f SAND, trace f gravelPID = 0 ppm1016[FILL](wet)Auger to 10 feet11S-6SS1.522gravel[FILL]Wet)1222Reddish brown silty f SAND, trace f gravelPID = 100 ppm13S-7SS0.513[FILL](wet)141818If agmentsSheen on water15S-8SS0.710fragmentsPID = 10 ppm16-22222Black c-f gravelly SAND, trace siltPID = 10 ppm16-222If agmentsIf agmentsPID = 10 ppm16-222Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)18-5[CL] <td>3</td> <td>10-2</td> <td>33</td> <td>0.2</td> <td></td> <td>_</td> <td></td> <td></td> <td></td> <td>rr</td> <td></td>                                                                                                                                                                                                                                                                                                                                               | 3                     | 10-2     | 33         | 0.2    |          | _                                         |                                                                                                                  |                                                 |            | rr       |               |  |
| 5S-3SS1.53<br>2Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>[FILL]PID = 0 ppm622[FILL](moist-wet)622Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>Brown cl-gravelly SAND, trace silt and clay<br>Brown m-f SAND, some silty clay, trace f<br>gravelPID = 0 ppm84Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>Brown cl-gravelly SAND, trace silt and clay<br>Brown m-f SAND, some silty clay, trace f<br>gravelPID = 0 ppm9S-5SS1.43<br>Brown m-f SAND, some silty clay, trace f<br>gravelPID = 0 ppm1016[FILL](wet-moist)PID = 0 ppm11S-6SS1.522<br>gravelgravel [FILL]Wet12220Brown n- Dark gray silty c-f SAND, trace f<br>gravelPID = 100 ppm13S-7SS0.513<br>13[FILL](wet)1418Black c-f gravelly SAND, trace silt<br>ragmentsPID = 17 ppm15S-8SS0.710<br>fragmentsFILL](wet)16-22Black c-f gravelly SAND, occasional brick<br>ragmentsPID = 10 ppm16-22Black c-f gravelly SAND, trace silt<br>fragmentsPID = 10 ppm16-22Black c-f gravelly SAND, trace silt<br>FPID = 50 ppm17S-9SS1.329<br>Grayish brown silty CLAY<br>Grayish brown silty CLAYSheen on water18- <t< td=""><td><del>،</del> ر</td><td>Į ,</td><td></td><td></td><td></td><td></td><td>• •</td><td></td><td>Auger to</td><td>4 feet</td><td></td></t<>                                                                                          | <del>،</del> ر        | Į ,      |            |        |          |                                           | • •                                                                                                              |                                                 | Auger to   | 4 feet   |               |  |
| 5 $S.3$ $SS$ $1.5$ $2$<br>$2$ gravel, occasional brick fragments<br>[FILL]PID = 0 ppm $6$ $2$ $2$ $2$ $2$ $2$ $14$ $6$ $14$ $6$ $14$ $16$ $14$ $16$ $14$ $16$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $14$ $110$ $110$ $15$ $15$ $12$ $110$ $15$ $120$ $110$ $15$ $15$ $120$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$ $110$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4                     |          |            | ·      |          |                                           |                                                                                                                  | ť                                               |            |          |               |  |
| 5551.52[FILL](moist-wet) $6^-$ 2Brown clayey SILT, trace c-f sand and fgravel, occasional brick fragmentsPID = 0 ppm $7^-$ S-4SS1.46gravel, occasional brick fragmentsPID = 0 ppm $8^-$ -2gravel, occasional brick fragmentsAuger to 8 feet $9^-$ S-5SS1.43gravel[FILL](wet-moist) $9^-$ S-5SS1.43Reddish brown silty f SAND, trace f gravelAuger to 10 feet $10^-$ 10Brown - Dark gray silty c-f SAND, trace fPID = 100 ppm $10^-$ 10Brown - Dark gray silty c-f SAND, trace fPID = 100 ppm $11^-$ S-6SS1.522gravel $12^-$ 20Black c-f gravelly SAND, trace f gravelSheen on water $12^-$ 20Black c-f gravelly SAND, trace f gravelPID = 17 ppm $14^-$ 1819Black c-f gravelly SAND, occasional brickPID = 10 ppm $14^-$ 22Black c-f gravelly SAND, occasional brickPID = 10 ppm $16^ 17^-$ S-9SS1.329[FILL](wet) $18^-$ -22Black c-f gravelly SAND, trace siltPID = 50 ppm $18^-$ -5[CL](moist)Sheen on water $19^-$ -6Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       | 0.0      | 00         | 1 .    |          |                                           |                                                                                                                  | -                                               | PID = 0 n  | om       |               |  |
| 62Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>Brown c-f gravelly SAND, trace silt and clay<br>A Brown m-f SAND, some silty clay, trace f<br>gravel (FILL] (wet-moist)PID = 0 ppm9S-5SS1.439S-5SS1.431014Reddish brown silty f SAND, trace f gravel<br>(FILL] (wet)Auger to 8 feet11S-6SS1.5221210Brown - Dark gray silty c-f SAND, trace f<br>gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f<br>gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelSheen on water13S-7SS0.513[FILL](wet)1418Black c-f gravelly SAND, occasional brick<br>tragmentsPID = 17 ppm15S-8SS0.710[FILL](wet)16-22Black c-f gravelly SAND, occasional brick<br>tragmentsPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](moist)18-5Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                           | 5                     | 5-3      | 33         | 1.Ş    |          | 1-                                        |                                                                                                                  | ١                                               |            | F        |               |  |
| 7S-4SS1.46Brown clayey SILT, trace c-f sand and f<br>gravel, occasional brick fragments<br>Brown c-f gravelly SAND, trace silt and clay<br>Brown m-f SAND, some silty clay, trace f<br>gravelPID = 0 ppm9S-5SS1.439S-5SS1.431016[FILL](wet-moist)1016Brown - Dark gray silty c-f SAND, trace f gravel<br>(FILL]Auger to 10 feet11S-6SS1.522gravel1222Reddish brown silty f SAND, trace f gravel<br>(FILL]Wet)Auger to 10 feet1222Reddish brown silty f SAND, trace f gravel<br>(gravel)PID = 100 ppm13S-7SS0.513[FILL](wet)141818[FILL](wet)PID = 17 ppm141818If agmentsPID = 10 ppm15S-8SS0.710fragments16-22Black c-f gravelly SAND, occasional brick<br>fragmentsPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)18-25ICL](moist)PID = 50 ppm19-26Gravish brown silty CLAYSheen on water19-25ICL](moist)Sheen on water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ~ <sup>-</sup>        |          |            | ţ      |          | [ [ ו וב ב ]                              | (moist wet                                                                                                       | /                                               |            |          |               |  |
| 7S-4SS1.46gravel, occasional brick fragments<br>Brown c-f gravelly SAND, trace silt and clay<br>Brown m-f SAND, some silty clay, trace f<br>gravelPID = 0 ppm9S-5SS1.43102gravel[FILL](wet-moist)1016[FILL](wet)Auger to 8 feet11S-6SS1.522gravel[FILL]11S-6SS1.522gravelPID = 0 ppm1210Brown - Dark gray silty c-f SAND, trace f<br>gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelSheen on water13S-7SS0.513[FILL](wet)141618IfiL](wet)Sheen on water15S-8SS0.710fragmentsPID = 10 ppm16-22IfiL](wet)Sheen on water17S-9SS1.329[FILL](wet)18-22Black c-f gravelly SAND, trace siltPID = 50 ppm18-22IfiL](moist)Sheen on water19-21(moist)Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | D                     |          |            |        |          | Rown clayer SILT trac                     | e c.f.sand and                                                                                                   | f                                               |            |          |               |  |
| 10001.1000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000<                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |          | 22         | 1.4    |          |                                           |                                                                                                                  | •                                               | PID = 0 p  | om       |               |  |
| 84Brown m-f SAND, some silty clay, trace f<br>gravelAuger to 8 feet9S.5SS1.43104Reddish brown silty f SAND, trace f gravel<br>[FILL](wet)1010Brown - Dak gray silty c-f SAND, trace f<br>gravelAuger to 10 feet11S.6SS1.5221222Reddish brown silty f SAND, trace f gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelSheen on water13S-7SS0.513[FILL]141610Black c-f gravelly SAND, trace siltPID = 17 ppm141819Black c-f gravelly SAND, occasional brickPID = 10 ppm15S-8SS0.710fragments16-222Black c-f gravelly SAND, occasional brickPID = 10 ppm16-222Black c-f gravelly SAND, trace siltPID = 10 ppm16-222Black c-f gravelly SAND, trace siltPID = 10 ppm16-222Black c-f gravelly SAND, trace siltPID = 50 ppm16-222Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL]18-5[CL](moist)Sheen on water19-5Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | /                     | 5-4      | 55         | 1.4    |          |                                           |                                                                                                                  | clav                                            |            | <b>P</b> |               |  |
| 9S-5SS1.42gravel[FILL](wet-moist)PID = 0 ppm101016[FILL](wet)Auger to 10 feet11S-6SS1.522gravelPID = 100 ppm11S-6SS1.522gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelPID = 17 ppm1222Reddish brown silty f SAND, trace siltPID = 17 ppm13S-7SS0.513[FILL]141819Black c-f gravelly SAND, occasional brickPID = 10 ppm141819Black c-f gravelly SAND, occasional brickPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 50 ppm16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL]18-5[CL](moist)Sheen on water19-5Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | . –                   |          |            |        |          |                                           |                                                                                                                  |                                                 | Auger to I | 8 feet   |               |  |
| 9S.5SS1.43Reddish brown silty f SAND, trace f gravel<br>(FILL)PID = 0 ppm1016[FILL](wet)Auger to 10 feet11S.6SS1.522gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelSheen on water13S-7SS0.513[FILL]1420Black c-f gravelly SAND, trace siltPID = 17 ppm141819Black c-f gravelly SAND, occasional brickPID = 10 ppm15S-8SS0.710fragments16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)18-5[CL](moist)Sheen on water1980 rown silty CLAYSheen on water195[CL](moist)19End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0                     |          |            |        |          |                                           |                                                                                                                  |                                                 | . loge lo  |          |               |  |
| 104Reddish brown silty f SAND, trace f gravel<br>(wet)Auger to 10 feet11S-6SS1.522gravelPID = 100 ppm1222Reddish brown silty f SAND, trace f gravelPID = 100 ppmSheen on water1222Reddish brown silty f SAND, trace f gravelBlack c-f gravelly SAND, trace siltPID = 17 ppm13S-7SS0.513[FILL](wet)PID = 10 ppm141616IfFill(wet)Sheen on waterSheen on water1418Black c-f gravelly SAND, occasional brickFiD = 10 ppmSheen on water167[FILL](wet)PID = 10 ppm16-22Black c-f gravelly SAND, occasional brickPID = 10 ppm16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)185[CL](moist)PID = 50 ppm1996Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | a-1                   | S-5      | 22         | 14     |          |                                           | (                                                                                                                | ,                                               | PID = 0 p  | pm       |               |  |
| $10^-$ 16[FILL](wet)Auger to 10 feet11S-6SS1.522gravelPID = 100 ppm1219[FILL](wet)Sheen on water1222Reddish brown silty f SAND, trace f gravelSheen on water13S-7SS0.513[FILL](wet)1410Black c-f gravelly SAND, trace siltPID = 17 ppm141819Black c-f gravelly SAND, occasional brickPID = 10 ppm15S-8SS0.710fragmentsPID = 10 ppm167[FILL](wet)Sheen on water1622Black c-f gravelly SAND, occasional brickPID = 10 ppm1622Black c-f gravelly SAND, trace siltPID = 10 ppm1622Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)185[CL](moist)Sheen on water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |          | 00         |        |          | Reddish brown silty f S/                  | ND, trace f gra                                                                                                  | vel                                             |            |          |               |  |
| 11S-6SS1.510<br>22Brown - Dark gray silty c-f SAND, trace f<br>gravelPID = 100 ppm<br>Sheen on water1222Reddish brown silty f SAND, trace f gravelBlack c-f gravelly SAND, trace siltPID = 17 ppm<br>Sheen on water13S-7SS0.513[FILL](wet)PID = 17 ppm<br>Sheen on water1418IfIfIfIfSheen on water1418IfIfIfIfSheen on water15S-8SS0.710If agmentsPID = 10 ppm1622IfIfIfIfIf1622IfIfIfIf1622IfIfIfIf1622IfIfIfIf1622IfIfIf17S-9SS1.329[FILL]18IfIfIfIfIf18IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19IfIfIfIf19If <td>10</td> <td></td> <td></td> <td></td> <td>16</td> <td></td> <td></td> <td></td> <td>Auger to 1</td> <td>10 feet</td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10                    |          |            |        | 16       |                                           |                                                                                                                  |                                                 | Auger to 1 | 10 feet  |               |  |
| 11S-6SS1.522gravelPID = 100 ppm1219[FILL](wet)Sheen on water1222Reddish brown silty f SAND, trace f gravelBlack c-f gravelly SAND, trace siltPID = 17 ppm13S-7SS0.513[FILL](wet)PID = 17 ppm141616Sheen on waterSheen on water141818Iff ragmentsPID = 10 ppm15S-8SS0.710fragmentsPID = 10 ppm1622PIDBlack c-f gravelly SAND, occasional brickPID = 10 ppm1622PIDFILL](wet)Sheen on water1622PIDFillL](wet)Sheen on water1622PIDGrayish brown silty CLAYSheen on water1829FILL](wet)PID = 50 ppm1820CL](moist)PID = 50 ppm1919Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |          |            |        |          |                                           |                                                                                                                  | f                                               | -          |          |               |  |
| 1219[FILL]<br>(wet)(wet)<br>(wet)Sheen on water1222Reddish brown silty f SAND, trace f gravelBlack c-f gravelly SAND, trace siltPID = 17 ppm<br>Sheen on water13S-7SS0.513[FILL](wet)PID = 17 ppm<br>Sheen on water141819Black c-f gravelly SAND, occasional brick<br>fragmentsPID = 10 ppm<br>Sheen on water15S-8SS0.710fragmentsPID = 10 ppm<br>Sheen on water16-2225Black c-f gravelly SAND, trace silt<br>[FILL](wet)PID = 50 ppm<br>Sheen on water17S-9SS1.329[FILL]<br>(Wet)PID = 50 ppm<br>Sheen on water18-5[CL]<br>(moist)Sheen on water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 11                    | S-6      | SS         | 1.5    |          |                                           | -                                                                                                                |                                                 | PID = 100  | ) ppm    |               |  |
| 1222Reddish brown silty f SAND, trace f gravel13S-7SS0.513[FILL](wet)141616Sheen on water141819Black c-f gravelly SAND, occasional brickFID = 10 ppm15S-8SS0.710fragmentsPID = 10 ppm16-227[FILL](wet)Sheen on water16-2225Black c-f gravelly SAND, trace siltFID = 50 ppm17S-9SS1.329[FILL](wet)185[CL](moist)PID = 50 ppm199Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |          |            |        |          | 0                                         | (wet)                                                                                                            |                                                 | Sheen on   | water    |               |  |
| 13S-7SS0.513<br>13[FiLL](wet)PID = 17 ppm<br>Sheen on water1414181618Sheen on waterSheen on water15S-8SS0.710<br>fragmentsfragmentsPID = 10 ppm<br>Sheen on water16-227[FiLL](wet)Sheen on water16-22-22Black c-f gravelly SAND, trace siltSheen on water17S-9SS1.329<br>6[FILL](wet)PID = 50 ppm<br>Sheen on water18-5[CL](moist)Sheen on water1980 ring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 12                    |          |            | ŀ      |          |                                           | • •                                                                                                              | vel                                             |            |          | -             |  |
| 13S-7SS0.513[FILL](wet)PID = 17 ppm<br>Sheen on water1418161816Sheen on water141819Black c-f gravelly SAND, occasional brick<br>fragments<br>[FILL]PID = 10 ppm<br>Sheen on water167[FILL](wet)Sheen on water16-221325Black c-f gravelly SAND, trace silt<br>[FILL]PID = 50 ppm17S-9SS1.329[FILL](wet)186Grayish brown silty CLAY<br>[CL]Sheen on water199818 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       | †        |            |        |          | -                                         |                                                                                                                  |                                                 |            |          |               |  |
| 141616Sheen on water141819Black c-f gravelly SAND, occasional brickPID = 10 ppm15S-8SS0.710fragmentsPID = 10 ppm167[FILL](wet)Sheen on water16-22Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)185[CL](moist)Sheen on water19980 ring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 13                    | S-7      | ss         | 0.5    |          |                                           |                                                                                                                  |                                                 | PID = 17   | ppm      |               |  |
| 14 $18$ $19$ Black c-f gravelly SAND, occasional brickPID = 10 ppm $15$ S-8SS $0.7$ $10$ fragmentsPID = 10 ppm $16$ $7$ [FILL](wet)Sheen on water $16$ $25$ Black c-f gravelly SAND, trace siltPID = 50 ppm $17$ S-9SS $1.3$ $29$ [FILL](wet) $18$ $ 6$ Grayish brown silty CLAYSheen on water $18$ $ 5$ [CL](moist)End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |          |            |        |          |                                           |                                                                                                                  |                                                 | Sheen on   | water    |               |  |
| 15S-8SS $0.7$ 19Black c-f gravelly SAND, occasional brick<br>fragmentsPID = 10 ppm167[FILL](wet)Sheen on water16-2225Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)PID = 50 ppm18-6Grayish brown silty CLAYSheen on waterSheen on water19Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 14                    |          |            | -      | 1        |                                           |                                                                                                                  |                                                 |            |          |               |  |
| 15S-8SS0.710fragmentsPID = 10 ppm167[FILL](wet)Sheen on water16-2225Black c-f gravelly SAND, trace siltPID = 50 ppm17S-9SS1.329[FILL](wet)PID = 50 ppm186Grayish brown silty CLAYSheen on waterSheen on water18105[CL](moist)End 15:2519191018 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       | †        | †          | t      |          | Black c-f gravelly SAND                   | , occasional brid                                                                                                | ck                                              |            |          |               |  |
| 16       7       [FILL]       (wet)       Sheen on water         16       -22       -22       Black c-f gravelly SAND, trace silt       PID = 50 ppm         17       S-9       SS       1.3       29       [FILL]       (wet)       PID = 50 ppm         18       -       6       Grayish brown silty CLAY       Sheen on water       Sheen on water         18       5       [CL]       (moist)       End 15:25         19       9       Boring completed at 18 feet       End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 15                    | S-8      | ss         | 0.7    |          |                                           |                                                                                                                  |                                                 | PID = 10 j | ppm      |               |  |
| 16- 2217S-9SS1.329[FILL] (wet)PID = 50 ppm18-6Grayish brown silty CLAYSheen on water185[CL] (moist)End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |          |            |        |          | -                                         | (wet)                                                                                                            |                                                 | Sheen on   | water    |               |  |
| $17$ S-9SS $1.3$ $29$ Black c-f gravelly SAND, trace silt<br>(wet)PID = 50 ppm18 $\sim$ 6Grayish brown silty CLAY<br>5Sheen on water18 $\sim$ 6Grayish brown silty CLAY<br>(moist)Sheen on water19 $\sim$ $\sim$ $\sim$ $\sim$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 16                    |          |            |        |          |                                           |                                                                                                                  |                                                 |            |          |               |  |
| 17S-9SS1.329[FILL](wet)PID = 50 ppm $-$ 6Grayish brown silty CLAYSheen on water $18$ 5[CL](moist)199Boring completed at 18 feetEnd 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       | †        |            |        |          | Black c-f gravelly SAND                   | , trace silt                                                                                                     |                                                 |            |          |               |  |
| 6     Grayish brown silty CLAY     Sheen on water       18     5     [CL]     (moist)       19     Boring completed at 18 feet     End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 17                    | S-9      | ss         | 1.3    |          |                                           |                                                                                                                  |                                                 | PID = 50 j | opm      |               |  |
| 18         5         [CL] (moist)           19         Boring completed at 18 feet         End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |          |            | ~ . ]  | +        | Grayish brown silty CLA                   | Y                                                                                                                |                                                 | Sheen on   | water    |               |  |
| 19 Boring completed at 18 feet End 15:25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 18                    |          |            |        |          |                                           |                                                                                                                  |                                                 |            |          |               |  |
| 19                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |          |            |        |          |                                           | and the second second second second second second second second second second second second second second second |                                                 | End 15:25  |          |               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 19                    | 1        |            |        |          |                                           |                                                                                                                  |                                                 |            |          |               |  |
| 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                       |          |            |        |          |                                           |                                                                                                                  |                                                 |            |          |               |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20                    | Ī        | · [        |        |          |                                           |                                                                                                                  |                                                 |            |          |               |  |
| Standard Penetration Test N-Value LANGAN Engineering and Environmental Services, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       |          |            |        |          |                                           |                                                                                                                  | Í                                               |            |          |               |  |

| rojecti           | lam   | e    |       | PSE            | LOG OF BORING NO: P-1<br>E&G Former Front Street Gas Works Site | Projec  | t No. 1406602        | of                     |  |  |
|-------------------|-------|------|-------|----------------|-----------------------------------------------------------------|---------|----------------------|------------------------|--|--|
| Boring L          |       |      |       | Nev            |                                                                 |         | ion and Datum        |                        |  |  |
| Drilling (        |       |      | _     |                |                                                                 | Date S  |                      | 36.14<br>Date Finished |  |  |
| Drilling E        |       |      | t     | Mot            | pile Drill B-80                                                 | שמוב ט  |                      |                        |  |  |
| Size and          |       |      |       |                |                                                                 | Comul   |                      | 9/5/97                 |  |  |
| Casing            |       |      |       |                | - i.e. Hollow Oteni Auger                                       |         | etion Depth          | Rock Depth             |  |  |
| asing H           | amr   | ner  | Weig  | iht            | Drop N                                                          |         | 43 ft                | Not Encounter          |  |  |
| Sampler           |       |      |       |                |                                                                 | Water   |                      |                        |  |  |
| Sampler           | Han   | mor  | Woigh |                | 4.40.11                                                         | Driller | K. Mike N            |                        |  |  |
|                   |       |      | T     | <u> </u>       | 140 lb Drop 30" li                                              | nspec   | tor Elana Se         | elman                  |  |  |
| Depth             | S     | Туре | Reco  | /. †~SP1       | DESCRIPTION                                                     |         | REMAR                | s                      |  |  |
| (ft)              |       | ļ    | (ft)  | <i>ъ</i> 1/6   |                                                                 | ł       |                      |                        |  |  |
| _                 | _     |      |       |                |                                                                 |         | Start 11:20          |                        |  |  |
| 1                 | S-1   | SS   | 0.7   | 10             | Reddish brown - Black f SAND, trace-son                         | ne      | Auger through aspl   | halt                   |  |  |
|                   |       |      |       | 15             |                                                                 |         | PID = 0 ppm          |                        |  |  |
| 2                 |       |      |       | 12             | concrete fragments [FILL] (dry)                                 | ľ       | ··- • pp             |                        |  |  |
| -                 |       |      | 1     | 11             | Reddish brown f SAND, trace silt and f                          |         |                      |                        |  |  |
| 3                 | S-2   | SS   | 1.0   | 7              | gravel, occasional brick fragments                              |         | PID = 0 ppm          |                        |  |  |
|                   |       |      |       | 11             | [FILL] (dry)                                                    | .       | ie v ppin            |                        |  |  |
| 4                 | i     |      |       | 9              |                                                                 |         |                      |                        |  |  |
|                   |       |      | 1     | 6              | Reddish brown f SAND, trace silt and clay                       | ,       |                      |                        |  |  |
| 5                 | S-3   | SS   | 0.4   | 5              | and f gravel, occasional asphalt fragments                      |         | PID = 0 ppm          |                        |  |  |
|                   |       |      |       | 4              | and vegetation                                                  | °       | n – o bhui           |                        |  |  |
| 6                 |       |      |       | 2              | [FILL] (moist)                                                  |         | upper to E fact      |                        |  |  |
|                   |       |      | ···   | 1 9            |                                                                 | ľ       | luger to 6 feet      |                        |  |  |
| 7                 | S-4   | ss   | NR    | 7              |                                                                 |         |                      |                        |  |  |
|                   | -     |      |       | 5              |                                                                 |         |                      |                        |  |  |
| 8                 |       |      |       | 5              | }                                                               |         |                      |                        |  |  |
|                   | t-    |      |       | 15             | Provin f CAND trans silt and 1                                  | IA      | uger to 8 feet       |                        |  |  |
| 9 8               | S-5   | ss   | 0.6   | 8              | Brown f SAND, trace silt and clay and c-f                       |         |                      |                        |  |  |
| <u> </u>          |       |      | 0.0   | 10             | gravel, occasional brick fragments [Fi                          | ILLJ  P | ID = 0.5 ppm         |                        |  |  |
| 10                |       |      |       | 1              | Brown m-f SAND, trace silt and f gravel,                        |         |                      |                        |  |  |
|                   |       |      |       | 4              | occasional brick fragments (moist)                              |         | ecomposed brick i    | n tip of spoon         |  |  |
| 11 5              | 6-6   | ss   | 0.0   | 14             | Brown f SAND, trace silt and f gravel                           |         | uger to 10 feet      |                        |  |  |
| - <u>''</u>  °    | 10'   | 33   | 0.9   | 5              | [FILL] (dry)                                                    | P       | ID = 0.5 ppm         |                        |  |  |
| 42-1              |       |      |       | 5              | BRICK fragments                                                 | ļ       |                      |                        |  |  |
| 12                |       |      |       | 5              | Brown m-f SAND, trace clay and c-f gravel                       | R       | ock fragments in tip | o of spoon             |  |  |
| 1, -1, -          |       |      | '     | 35             | Brown f SAND, trace silt and clay and c-f                       |         | - ,                  |                        |  |  |
| <u>13</u> S       | -7    | SS   | 1.6   | 11             | gravel [FILL] (dry)                                             | PI      | D = 0.1 ppm          |                        |  |  |
|                   |       |      |       | 10             | BRICK fragments                                                 |         |                      |                        |  |  |
| 14                |       |      |       | 16             | Brown - White m-f SAND, trace f gravel                          | AL      | iger to 14 feet      |                        |  |  |
|                   |       |      |       | 36             | ROCK fragments                                                  | ·       | ÷ · · · ·            |                        |  |  |
| <u>15</u> S       | -8  3 | SS   | 0.8   | 38             | Brown f SAND, trace-some silt, trace clay                       | PI      | D= 0 ppm             |                        |  |  |
| L                 |       | 1    |       | 35             | and f gravel, occasional brick fragments                        |         | - r.t                |                        |  |  |
| 16                |       |      |       | 42             | [FILL] (dry)                                                    | R       | ck fragments in tip  | of spoon               |  |  |
|                   | T     |      |       |                | Brown m-f SAND, some silt, trace clay                           |         | ger to 16 feet       | or spoon               |  |  |
| 17 S-             | 9  3  | ss   | 1.3   | 43             | the second shit, have slay                                      |         |                      |                        |  |  |
|                   |       |      |       |                | Reddish brown silty m f SAND trace for                          | . 141   | D = 0.1 ppm          |                        |  |  |
| 18                |       |      |       | 21             | Reddish brown silty m-f SAND, trace f grave                     | ы       |                      |                        |  |  |
|                   | +     |      |       |                | [SM] (dry)                                                      |         |                      |                        |  |  |
|                   |       | s    | 0.4   | 45             | Brown f SAND, some silt, trace c sand and t                     |         |                      |                        |  |  |
| o Lot             |       |      |       |                |                                                                 |         |                      |                        |  |  |
| 19 S-             |       |      | 0.4   |                | gravel                                                          | PIC     | ) = 0 ppm            |                        |  |  |
| 19 S-<br>10<br>20 |       |      | 0.4   | 33<br>32<br>27 | [SM] (dry-moist)                                                | PIC     | ) = 0 ppm            |                        |  |  |

LANGAN Engineering and Environmental Services, Inc.

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| roject<br>oring |          |               | <br>on   |                |              | G Former Front Street Ga<br>k, New Jersey |                | Projec<br>Date S | Started                  | Date Finished |
|-----------------|----------|---------------|----------|----------------|--------------|-------------------------------------------|----------------|------------------|--------------------------|---------------|
| rilling         |          |               |          |                | CT&E         | Environmental Services,                   | inc.           |                  | 9/5/97                   | 9/5/97        |
| Depth<br>(ft)   |          | S             | Туре     | Recov.<br>(ft) | SPT<br>bl/6" | DESCRI                                    | PTION          |                  | REMAR                    | KS            |
|                 | -+       |               |          |                | 12           | Brown silty f SAND, trace                 | efgravel [SM   | ]                | PID = 0 ppm              |               |
| 2               | -1       | S-            | SS       | 1.6            | 8            | Brown SILT [ML]                           |                |                  |                          |               |
|                 | -        | 11            |          |                | 16           | Grayish brown f SAND, t                   |                |                  | PID = 100 ppm            |               |
| 22              | 27       |               |          |                | 25           | [SP] -                                    | (dry-moist)    |                  | Odor<br>Auger to 22 feet |               |
|                 |          |               | ~~       |                | 18           | Light brown f SAND                        | (dry-moist)    |                  | PID = 105  ppm           |               |
| 2               | 3        | S-            | SS       | 1.6            | 21<br>20     | [SP]                                      | (0) 9-110(31)  |                  |                          |               |
| 24              | <u>_</u> | 12            |          |                | 19           |                                           |                |                  | PID = 1 ppm              |               |
|                 | ╌┼       |               |          |                | 16           | Light brown f SAND                        |                |                  | Auger to 24 feet         |               |
| 2               | 5        | S-            | SS       | 1.7            | 16           | [SP]                                      | (dry)          |                  | PID = 0.5 ppm            |               |
|                 |          | 13            |          |                | 20           |                                           |                |                  |                          |               |
| 26              | 6]       |               |          |                | 25           |                                           | .,             |                  |                          | -             |
|                 |          |               | <u> </u> |                | 53<br>25     | Brown f SAND, trace cla<br>[SP]           | у              |                  | PID = 1 ppm              |               |
| 27              | 4        | S-<br>14      | SS       | 1.5            | 33           | Grayish brown f SAND, s                   | some silt      |                  |                          |               |
| 28              |          | 14            |          |                | 35           | [SM]                                      | (moist)        |                  | PID = 40 ppm             |               |
|                 | -+       |               |          |                | 23           | Brown - Dark brown m-f                    | SAND, trace si | t and            | Auger to 28 feet         |               |
| 29              | 97       | S-            | SS       | 1.4            | 25           | f gravel                                  |                |                  | PID = 55 ppm             |               |
|                 |          | 15            |          |                | 17           | [SP]                                      | (moist-wet)    |                  | Odor .                   |               |
| 30              | 0]       |               |          |                | 19           |                                           |                |                  |                          |               |
|                 | . –      |               | 00       |                | 20<br>50     | Brown silty f SAND                        | (wet)          |                  | PID = 200 ppm            |               |
| 3.              | 1        | S-<br>16      | SS       | 1.8            | 50/3"        | [SM]                                      | (wet)          |                  | Tight soil               |               |
| 32              | 2        | 10            |          |                | 50/0         |                                           |                |                  | Auger to 32 feet         |               |
|                 |          |               |          |                | 50           | Brown silty f SAND                        |                |                  |                          |               |
| 33              | 3        | S-            | SS       | 1.1            | 50/3"        | [SM]                                      | (wet)          |                  | PID = 90 ppm             |               |
|                 |          | 17            |          |                |              |                                           | -              |                  | Tight soil               |               |
| 34              | 4        |               |          |                |              |                                           |                |                  | Auger to 34 feet         |               |
| 0.0             | {        |               | <u></u>  |                | 47<br>50/3"  | Brown silty f SAND<br>[SM]                | (wet)          |                  | PID = 20 pppm            |               |
| 35              |          | S-<br>18      | SS       | 1.1            | 50/3         | [OW]                                      | (1101)         |                  | Tight soil               |               |
| 36              | _        | <sup>'0</sup> |          |                |              |                                           |                |                  | Auger to 36 feet         |               |
|                 | -+       | -+            |          |                | 40           | Brown silty f SAND, trace                 | e clay [SM]    | }                | PID = 50 ppm             |               |
| 37              | 7        | S-            | ss       | 1.0            | 50/3"        | Brown silty f SAND                        |                |                  | PID = 12 ppm             |               |
|                 |          | 19            |          | i              |              | [SM]                                      | (wet)          |                  | Tight soil               |               |
| 38              | 3        |               |          |                |              |                                           |                |                  | Auger to 38 feet         |               |
| ~~              |          |               |          |                | -            | Brown silty f SAND                        | (wet-moist)    |                  | PID = 1 ppm              |               |
| 39              |          | S-            | SS       | 1.0            | 50/4"        | [SM]                                      | (wet-moist)    |                  | Tight soil               |               |
| 40              | _        | 20            |          |                |              |                                           |                |                  | Auger to 40 feet         |               |
| -+0             | <u>_</u> |               |          | ,              | 43           | Brown clayey SILT                         |                |                  | -                        |               |
| 41              | -        | s-            | SS       | 0.9            | 50/4"        | [ML]                                      | (moist)        |                  | PID = 0.1 ppm            |               |
| )               | _        | 21            |          |                |              |                                           |                |                  | Tight soil               |               |
| 42              | 2        |               |          |                |              | ·                                         | ····           | _,               | Auger to 42 feet         |               |
| tanda           |          |               |          |                |              |                                           |                |                  | vironmental Servi        |               |

| Project N     | ame   |       | ········       | PSE&         | LOG OF BORING NO: P-1<br>G Former Front Street Gas Works Site | Project  | Sheet<br>t No. 14066 |               |  |  |
|---------------|-------|-------|----------------|--------------|---------------------------------------------------------------|----------|----------------------|---------------|--|--|
| Boring L      |       |       |                | Newar        | k, New Jersey                                                 | Date S   |                      | Date Finished |  |  |
| orilling C    | omp   | any   | , <u> </u>     |              | Environmental Services, Inc.                                  | 1        | 9/5/97               | 9/5/97        |  |  |
| Depth<br>(II) | S     | Туре  | Recov.<br>(ft) | SPT"<br>bV6" | DESCRIPTION                                                   |          | REMARKS              |               |  |  |
|               |       |       |                |              | Brown silty CLAY                                              |          | Tight soil           | ·····         |  |  |
| 43            | S-    | SS    | 0.7            | 50/4"        | [CL] (moist-dry)                                              | ·        | PID = 1.5 feet       |               |  |  |
|               | 22    |       |                |              | -                                                             |          | Auger to 43 feet     |               |  |  |
| 44            |       |       |                |              |                                                               |          | Install piezomete    | er at 43 feet |  |  |
| 45            |       |       |                |              | Boring completed at 43 feet                                   | ļ        | End 14:50            |               |  |  |
|               |       |       |                |              |                                                               |          |                      |               |  |  |
| 46            |       |       |                |              |                                                               |          |                      |               |  |  |
|               |       | -     |                |              |                                                               |          |                      |               |  |  |
| 47            |       | ĺ     |                |              |                                                               |          |                      |               |  |  |
| 48            |       |       |                |              |                                                               |          |                      |               |  |  |
|               |       |       |                |              |                                                               |          | -                    |               |  |  |
| 49            |       |       | ĺ              |              |                                                               |          |                      |               |  |  |
|               |       |       |                |              |                                                               |          |                      |               |  |  |
| 50            |       |       |                | ļ            |                                                               |          |                      |               |  |  |
| 51            |       |       |                |              |                                                               |          |                      |               |  |  |
| j             |       |       |                |              |                                                               | ľ        |                      |               |  |  |
| 52            |       |       |                |              |                                                               |          |                      | 1             |  |  |
|               |       |       |                |              |                                                               |          |                      |               |  |  |
| 53            |       |       |                |              |                                                               | İ        |                      |               |  |  |
| 54            |       |       |                |              |                                                               |          |                      |               |  |  |
|               |       |       |                |              |                                                               |          |                      |               |  |  |
| 55            |       |       |                |              | -                                                             |          |                      |               |  |  |
|               |       |       |                |              |                                                               | 1        |                      |               |  |  |
| 56            |       |       |                |              |                                                               |          |                      |               |  |  |
| 57            |       |       |                |              |                                                               |          |                      |               |  |  |
|               |       |       | Į              |              |                                                               |          |                      |               |  |  |
| 58            |       |       |                |              |                                                               |          |                      | 1             |  |  |
|               |       |       |                |              |                                                               | ł        |                      |               |  |  |
| 59            |       |       |                |              |                                                               |          |                      |               |  |  |
| 60            |       |       |                |              |                                                               |          |                      |               |  |  |
|               |       |       |                |              |                                                               | <b>.</b> |                      |               |  |  |
| 61            |       |       | -   -          | ·            |                                                               | 1        |                      |               |  |  |
|               |       |       |                | 1            |                                                               | f        |                      |               |  |  |
| 62            |       | _     | -              |              |                                                               |          |                      |               |  |  |
| <u>_</u>      |       |       |                |              |                                                               | ł        |                      |               |  |  |
| 63            |       |       |                |              |                                                               |          |                      |               |  |  |
| 64            |       |       |                |              |                                                               | ĺ        |                      |               |  |  |
| <u>`</u> -    | ·     | ·     |                |              |                                                               |          |                      |               |  |  |
| andard P      | enetr | ation | Test N-        | Value        | LANGAN Engineering and                                        | d Enviro | onmental Servi       | ces. Inc.     |  |  |
|               |       |       |                | -            | River Drive Center 1                                          |          |                      | 07407         |  |  |

|                                                                                                                                          |       |        |        | 005       | and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s | OF BORIN             |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Sheet 1                                                                    |                                        |
|------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------|
| Project N                                                                                                                                |       |        | _      |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      | as Works Site             | Projec                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 1406602                                                                    |                                        |
| Boring L                                                                                                                                 |       |        |        |           | rk, New Jerse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      | 100                       |                         | tion and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | vatum                                                                      | 36.46                                  |
| Drilling C                                                                                                                               |       |        |        |           | Environmente<br>Drill B-80 ar                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                           | Date Started<br>9/10/97 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                            | Date Finished                          |
| Drilling E<br>Size and                                                                                                                   |       |        |        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                           | Come                    | 9/1<br>letion De                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                            | 9/16/97                                |
| Casing                                                                                                                                   | iypi  |        |        | 3-7/8" Ho | ller Cohe, 4-1/4" & 8-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 4" LD. Hollow Stem   | Augers, 5-7/8" Roller Bit |                         | 58 ft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ehm                                                                        | Rock Depth<br>58 ft                    |
| Casing H                                                                                                                                 | атп   | ier    | Weigh  | nt        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Drop                 |                           | Water                   | Level                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ~ 29 ft                                                                    |                                        |
| Sampler                                                                                                                                  |       |        |        | 2" O.[    | D. Split Spoor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                           | Driller                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | K. Mike I                                                                  | Millican                               |
| Sampler                                                                                                                                  | Ham   | mer V  | Veiaht |           | 140 lb                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Drop                 | 30"                       | Inspec                  | tor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Elana Se                                                                   | elman/Ed Zofchal                       |
| Depth                                                                                                                                    | s     |        | Recov. | SPT       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DESCR                | IPTION                    |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | REMAR                                                                      |                                        |
| $(")$ $1$ $2^{-}$ $3^{-}$ $4^{-}$ $5^{-}$ $6^{-}$ $7^{-}$ $8^{-}$ $9^{-}$ $10^{-}$ $11^{-}$ $12^{-}$ $13^{-}$ $14^{-}$ $15^{-}$ $16^{-}$ |       |        | (11)   | Ы/6"      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | See Bori<br>Log of E | -                         | L                       | Losing w<br>gallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons p<br>dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons dallons | rough asp<br>4 feet with<br>t<br>er 10 feet<br>plation at 1<br>ed at 14 fe | 3-7/8" Roller<br>ate of ~ 50<br>4 feet |
| 17<br>18<br>19                                                                                                                           |       |        | ~      |           | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                            |                                        |
| 20                                                                                                                                       |       |        |        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                           |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | ·····                                                                      |                                        |
| tandard P                                                                                                                                | 'enet | ration | Test N | I-Value   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      | ngineering an             |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                            | -                                      |
|                                                                                                                                          |       |        |        |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | River                | Drive Center 1            | , Elmv                  | vood Pari                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | k, NJ 07                                                                   | 407                                    |

|           |     |    |            | <u></u>     | LOG OF BORIN                              | the second second second second second second second second second second second second second second second se |        | Sheet 2                 | and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se |
|-----------|-----|----|------------|-------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|--------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project N |     |    | . <u> </u> |             | G Former Front Street Ga                  | as works Site                                                                                                   | Projec | t No. 140660<br>Started | 2<br>Date Finished                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Boring Lo |     |    |            |             | rk, New Jersey<br>Environmental Services, | Inc.                                                                                                            |        | 9/10/97                 | 9/16/97                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Depth     | s   | T  | Recov.     | SPT         | · · ·                                     | DESCRIPTION REMARKS                                                                                             |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| (ft)      | -   |    | (ft)       | ы/6"        |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            |             |                                           |                                                                                                                 |        |                         | · · · · · · · · · · · · · · · · · · ·                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 21        |     |    |            |             | •                                         |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 22        |     |    |            |             | -                                         |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 23        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 24        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 25        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 26        | •   |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 27        |     |    |            |             |                                           | •                                                                                                               |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            | ŀ           |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 28        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 29        |     |    |            |             |                                           |                                                                                                                 |        |                         | ,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 30        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 31        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 32        |     |    |            |             |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 33        |     |    |            |             |                                           | _                                                                                                               |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 34        |     |    |            |             |                                           | -                                                                                                               |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           | _   |    |            | 14          | Brown silty f SAND                        |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 35        | S-1 | SS | 1.5        | 28<br>44    | [SM]                                      | (moist)                                                                                                         |        | FID = 0 ppm             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 36        |     |    |            | 60          |                                           |                                                                                                                 |        | Auger to 36 feet        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            | 10          | Brown silty f SAND                        |                                                                                                                 |        | -                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 37        | S-2 | SS | 1.5        | 26          | [SM]                                      | (wet)                                                                                                           |        | FID = 0 ppm             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 38        |     |    |            | 43<br>50/4" |                                           |                                                                                                                 |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            | 21          | Brown silty f SAND                        | [SM]                                                                                                            |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 39        | S-3 | ss | 1.5        |             | Brown clayey SILT                         |                                                                                                                 |        | FID = 0 ppm             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     |    |            | 35          | [ML]                                      | (dry-moist)                                                                                                     |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 40        |     |    |            | 30          |                                           |                                                                                                                 |        | Auger to 40 feet        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>,</b>  |     | ee |            |             | Brown silty CLAY                          | (de constat)                                                                                                    |        |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 41        | S-4 | SS | 1.1        | 31<br>42    | [CL]                                      | (dry-moist)                                                                                                     |        | FID = 0 ppm             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 42        |     |    |            | 42<br>50/3" |                                           |                                                                                                                 | 1      | Auger to 42 feet        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|           |     | †  |            |             | <u></u>                                   |                                                                                                                 |        | End 16:15               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

Standard Penetration Test N-Value LANGAN Engineering and Environmental Services, Inc. River Drive Center 1, Elmwood Park, NJ 07407 8.

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P. Samuel

**1**2222-22

V.

| P        | roject N  | ame  | _       |        | PSE&(         | G Former Front Street Gas Wor                 |                  | ject No. 1406602                                                                             |
|----------|-----------|------|---------|--------|---------------|-----------------------------------------------|------------------|----------------------------------------------------------------------------------------------|
|          | oring Lo  |      |         |        | Newar         | k, New Jersey                                 | Dat              | e Started Date Finishe                                                                       |
|          | rilling C |      |         |        | CT&E          | Environmental Services, Inc.                  |                  | 9/10/97 9/16/97                                                                              |
| _<br>    | Depth     | S    |         | Recov. | SPT-<br>6//6" | DESCRIPTION                                   | N                | REMARKS                                                                                      |
|          | (ft)      |      |         | (ft)   | 30            | Red brown c-f SAND, some sil                  | ity clay, trace- | Start 9/12/97 7:40                                                                           |
|          | 43        | S-5  | SS      | 1.3    | 32<br>55      | some m-f gravel                               | noist)           | Auger PID = 2-3 ppm Oc                                                                       |
|          | 44        |      |         |        | 60            |                                               |                  | Auger to 42 feet with 8-1/4" I.D.                                                            |
| $\vdash$ |           |      |         |        | 30            | Red brown c-f SAND and SILT                   | f, trace-some    | Hollow Stem Auger PID = 2-3 p                                                                |
| -        | 45        | S-6  | SS      | 0.8    | 50/4"         | clay, trace f gravel<br>[SM-ML] (п            | noist)           | Install 8" Steel Casing through<br>center of augers to 42 feet<br>Tremie grout annular space |
|          | 46        |      |         | ļ      | <u> </u>      |                                               | It along trace   |                                                                                              |
| +        |           |      |         |        |               | Red brown c-f SAND, some sil                  | ווא כומא, וומכפי | with portland cement/bentonite                                                               |
| ╞        | 47<br>48  | S-7  | SS      | 0.8    | 100/4"        | some m-f gravel<br>[SC] (п                    | noist)           | while removing augers Ro<br>PID = 2 ppm End 12:30 fragm                                      |
|          | 48        |      |         |        | 60            | Red brown c-f SAND, some sil                  | Ity clay, trace  | Start 9/16/97 9:40 in tip of sp                                                              |
|          | 49        | S-8  | SS      | 0.8    |               | f gravel [SC]<br>Red brown c-f SAND, trace-so |                  | PID = 8-12 ppm Refusal<br>PID = 20 ppm Drill with 5-7/8                                      |
|          | 50        |      |         |        |               |                                               | noist)           | Drill to 50 feet Roller bit                                                                  |
| ┝        |           |      |         | ├───   | 75            | Red brown c-f SAND, some sil                  |                  | PID = 15-20 ppm Odor                                                                         |
|          | 51_       | S-9  | SS      | 0.9    |               | and f gravel                                  | lry-moist)       | Frequent red brown siltstone/<br>sandstone rock fragments                                    |
|          | 52        |      |         |        |               |                                               |                  | Drill to 52 feet Refusal                                                                     |
| -        |           |      |         |        | 100/5"        | Red brown c-f SAND, trace-so                  | ome silt and     | Refusal                                                                                      |
|          | 53        | S-   | SS      | 0.4    |               | clay, trace m-f gravel                        |                  | PID = 3 ppm                                                                                  |
| ┢──      |           | 10   |         |        |               | [SM-SC] (n                                    | noist)           |                                                                                              |
|          | 54        |      |         |        |               |                                               |                  | Drill to 54 feet                                                                             |
| F        |           |      |         | 1      | 48            | Red brown c-f SAND, some sil                  | lt, trace-some   | Frequent siltstone/sandstone roc                                                             |
|          | 55        | S-   | SS      | 1.1    | 70            | clay, trace f gravel                          |                  | fragments                                                                                    |
| F        |           | 11   |         |        | 100/4"        | [SM-SC] (n                                    | noist-wet)       | Refusal                                                                                      |
|          | 56        | . :  |         |        |               |                                               |                  | Drill to 56 feet                                                                             |
| ┢        |           |      |         | ţ      | 100/5"        | Red brown c-f SAND and m-f (                  | GRAVEL, trac     | e l                                                                                          |
|          | 57        | S-   | SS      | 0.3    |               | silt                                          |                  |                                                                                              |
| $\vdash$ |           | -12  |         |        |               |                                               | vet)             | Siltstone rock fragment in tip of                                                            |
| l        | 58        | S-13 | SS      | 0.04   | 100/0"        |                                               |                  | spoon Drill to 58 feet                                                                       |
|          | 59        |      |         |        |               | Boring completed at 58 feet                   |                  | Install piezometer at 58 feet<br>End 12:52                                                   |
|          | 60        |      |         |        |               |                                               |                  |                                                                                              |
|          | 61        |      |         |        | -             |                                               |                  |                                                                                              |
|          | 62        |      |         | ~      |               |                                               |                  |                                                                                              |
|          | 63        |      |         |        |               |                                               |                  |                                                                                              |
| Ĺ        | 64        |      | ·       |        |               |                                               |                  |                                                                                              |
| 1.5      | Standard  | Pen  | etratio | n Tect | N-Valu        | LANGAN Engin                                  | neering and E    | Environmental Services, Inc.                                                                 |

|                          |      |        |                |         | LOG OF BORING NO: P-2                        |               | Snee              |                    | ʻ.              |
|--------------------------|------|--------|----------------|---------|----------------------------------------------|---------------|-------------------|--------------------|-----------------|
| Project N                |      |        |                |         |                                              | Projec        |                   |                    |                 |
| Boring L                 | _    |        | <u> </u>       |         | irk, New Jersey                              | <u> </u>      | ion and Datum     | <u>. 38</u> .      | 09              |
| Drilling C<br>Drilling E |      |        | t              |         | Environmental Services, Inc.<br>e Drill B-80 | Date S        | Started<br>9/8/97 | Date Fi            | nished<br>3/97  |
| Size and                 |      |        |                |         | I.D. Hollow Stem Auger                       | Comp          | letion Depth      | Rock D             |                 |
| Casing                   | 170  |        |                |         | I.D. Hollow Stern Auger                      | Comp          | 44 ft             | eptn<br>countered, |                 |
| Casing H                 | атл  | ner    | Weigh          | nt      | Drop                                         | Water         | Level ~ 30.       |                    | <u>duntered</u> |
| Sampler                  |      |        |                | 2" 0.[  | D. Split Spoon                               | Driller       | K. Mil            | ke Millican        |                 |
| Sampler                  | Ham  | mer V  | Neight         |         | 140 lb Drop 30"                              | Inspec        | tor Elana         | i Seelman          |                 |
| Depth<br>(ft)            | s    | Туре   | Recov.<br>(ft) | SPT*    | DESCRIPTION                                  |               | REM               | ARKS               |                 |
|                          |      |        | 1 (11)         |         | ASPHALT                                      |               | Start 8:40        |                    |                 |
| 1                        | S-1  | ss     | 0.6            |         | COBBLES                                      |               | Auger through a   | asnhalt            |                 |
| ·····                    |      |        | 0.0            | 10      | Brown f SAND, some silt, trace f gravel,     |               | Jackhammer th     | -                  |                 |
| 2                        |      |        |                | 10      |                                              |               | FID = 0 ppm       |                    | 50              |
|                          |      |        | <u> </u>       | 15      | Reddish brown silty f SAND, trace c-f gri    | (dry)         | i io – o ppin     |                    |                 |
| 3                        | S-2  | ss     | 0.8            | 9       | occasional brick fragments                   | avei,         | FID = 0 ppm       |                    |                 |
| ¥                        |      |        |                | 14      | [FILL] (dry)                                 |               | – o hhiu          |                    |                 |
| 4                        |      |        |                | 17      |                                              |               | Auger to 4 feet   |                    |                 |
| •                        |      |        | <u>†</u>       | 18      | Brown - Reddish brown silty f SAND           |               | . ogci to 4 iedt  |                    |                 |
| 5                        | S-3  | SS     | 1.7            | 20      | [FILL] (dry)                                 |               | FID = 0 ppm       |                    |                 |
|                          | ÷ -  |        |                | 23      | Reddish brown m-f SAND, trace f gravel       |               | nie - o ppin      |                    |                 |
| 6                        |      |        | 1              | 17      | occasional brick fragments [FILL             |               |                   |                    |                 |
|                          |      |        |                | 19      | Reddish brown f SAND                         | -]            |                   |                    |                 |
| 7                        | S-4  | SS     | 1.1            | 19      | [FILL] (dry)                                 |               | FID = 0 ppm       |                    |                 |
|                          | - 1  |        |                | 30      | Reddish brown silty f SAND, trace clay       |               | oppin             |                    |                 |
| 8                        |      |        |                | 50/3"   | Reddish brown f SAND, some silt, trace       | c-f           | Auger to 8 feet   |                    | 1               |
|                          |      |        |                | 26      | gravel, occasional brick fragments           | Ŭ .           |                   |                    | ł               |
| 9                        | S-5  | SS     | 0.7            | 22      | [FILL] (dry)                                 |               | FID = 0 ppm       |                    | 1               |
|                          |      |        | •              | 44      |                                              |               | 1.8 - 0 ppm       |                    |                 |
| 10                       |      |        |                | 50/4"   |                                              |               | Refusal           |                    |                 |
|                          |      |        |                |         | Reddish brown SILT, some f sand, trace       |               | Auger to 10 feet  |                    | j j             |
| 11                       | S-6  | SS     | 1.2            |         | gravel [FILL] (dry)                          |               | FID = 0 ppm       |                    |                 |
|                          |      |        |                |         | Reddish brown c-f SAND, trace silt and f     |               |                   |                    |                 |
| 12                       |      |        |                |         | gravel, occasional brick fragments           |               |                   |                    |                 |
|                          |      |        |                |         | Reddish brown c-f SAND, trace silt and c     | ;-f           |                   |                    |                 |
| 13                       | S-7  | SS     | 1.1            |         | occasional brick fragments                   |               | FID = 0 ppm       |                    |                 |
|                          |      |        |                | 24      | [FILL] (dry)                                 |               |                   |                    |                 |
| 14                       |      |        |                | 25      |                                              |               | Auger to 14 feet  |                    |                 |
|                          | T    |        |                | 20      | Reddish brown c-f SAND, trace c-f gravel     |               |                   |                    |                 |
| 15\$                     | 5-8  | SS     | 0.6            |         | occasional brick fragments                   |               | ID = 0 ppm        |                    |                 |
|                          |      | 1.     |                | 50/5"   | (FILL) (dry-moist)                           |               | Refusal           |                    |                 |
| 16                       |      | 1      |                |         |                                              | 1             | Auger to 16 feet  |                    |                 |
| 1                        |      |        |                | 18      | Reddish brown f SAND, some silt, trace c     |               | -                 |                    |                 |
| 17 5                     | S-9  | ss     | 0.6            |         | gravel, occasional clay pockets              | 1             | ID = 0 ppm        |                    |                 |
|                          |      |        |                | 20      | [SM] (dry-moist)                             | ľ             |                   |                    |                 |
| 18                       |      |        |                | 20      |                                              | 1             |                   |                    |                 |
|                          |      |        | ~ .            |         | Brown silty f SAND, occasional clay pocke    | ets           |                   |                    |                 |
| 19                       | S-   | ss     | 1.7            | 13      | [SM] (dry-moist)                             |               | ID = 0 ppm        |                    |                 |
|                          | 0    | - I    |                | 12      |                                              | ľ'            |                   |                    | ľ               |
| 20                       |      |        |                | 13      |                                              |               | uger to 20 feet   |                    |                 |
|                          | -†-  | ·      |                |         |                                              | Į             |                   |                    |                 |
| andard F                 | enel | ration | Test N         | I-Value | LANGAN Engineering and                       | d Envir       | onmental Serv     | ices Inc           | <u> </u>        |
|                          |      |        |                |         | River Drive Center 1                         |               |                   | 07407              | ļ               |
|                          |      |        |                |         |                                              | <u>, E011</u> | JUUU PAIK, INJ    | 0/40/              |                 |

| Project N    |          |         |          |          | G Former Front Street Ga                   | s Works Si          |              | Projec | t No. 140660<br>tarted    | 2<br>Date Finish | er |
|--------------|----------|---------|----------|----------|--------------------------------------------|---------------------|--------------|--------|---------------------------|------------------|----|
| Boring Lo    |          |         | <u> </u> |          | k, New Jersey<br>Environmental Services, I | Inc.                | <sup>1</sup> |        | 9/8/97                    | 9/8/97           | ~  |
| Uniling      | ,0111†   | [       |          |          |                                            |                     | <b>.</b>     |        | REMAR                     | Ve               |    |
| Depth        | s        | Туре    | Recov.   | SPT      | DESCRI                                     | PTION               |              |        | REMAN                     | ND               |    |
| (ft)         |          | ļ       | (ft)     | Ы/6"     |                                            |                     | 000          |        |                           | ·····            |    |
| _            |          |         |          | 10       | Brown silty f SAND                         |                     | [SM]         |        | FID = 0 ppm               |                  |    |
| 21           | S-       | SS      | 1.7      | 9        | Lens of CLAY [CL]                          |                     |              |        | FID = 0 ppm               |                  |    |
|              | 11       |         |          | 15<br>16 | Brown silty f SAND<br>[SM] -               | (dry-mo             | nist)        |        |                           |                  |    |
| 22           |          |         |          | 20       | Brown silty f SAND, trace                  | • •                 |              | [SM]   | -                         |                  |    |
| 23           | S-       | ss      | 1.1      | 40       | Brown silty f SAND                         | (dry-mo             |              |        | FID = 0 ppm               |                  |    |
|              | 12       |         |          | 41       | Lens of CLAY [CL]                          |                     |              |        | Tight soil                |                  |    |
| 24           |          |         |          | 50/3*    | Brown silty f SAND, trace                  |                     |              | • •    | Auger to 24 feet          |                  |    |
|              |          |         |          | 30       | Brown silty f SAND, occa                   | sional poc          | kets c       | DT I   | FID = 0 ppm               | -                |    |
| 25           | S-       | SS      | 2.0      |          | clay [SM]<br>Brown f sandy SILT, trac      | o day and           | foray        |        |                           |                  |    |
| 26           | 13       |         |          | 29<br>41 | Brown silty f SAND [SM                     |                     | (dry-n       |        |                           |                  |    |
| 20           |          |         |          | 41       | Brown silty f SAND, occa                   |                     |              |        | FID = 0 ppm               |                  |    |
| 27           | S٠       | SS      | 0.9      |          | clay                                       | •                   |              |        | Refusal                   |                  |    |
|              | 14       |         |          |          | [SM]                                       | (dry-mo             | oist)        |        |                           |                  |    |
| 28           |          |         |          |          | _                                          |                     |              |        | Auger to 28 feet          | . •              |    |
| _            |          |         |          | 26       | Brown silty f SAND                         | ( -   - · ·         |              |        | FID = 0 ppm               |                  |    |
| 29           | S-       | SS      | 1.9      | 28       | [SM]                                       | (dry-ma             | oist)        |        | FID – U ppm               |                  |    |
| 30           | 15       |         |          | 32<br>29 |                                            |                     |              |        | Auger to 30 feet          |                  |    |
|              |          |         |          |          | Brown silty f SAND [SM                     | 1                   |              |        |                           |                  |    |
| 31           | S-       | SS      | 1.5      | 12       | Brown m-f SAND, trace f                    |                     |              |        | FID = 10 ppm              |                  |    |
|              | 16       |         |          | 20       | [SP]                                       | (moist-v            | wet)         |        | Odor                      |                  |    |
| 32 ]         |          |         |          | 19       |                                            | - · · · <b>·</b> ·  |              |        |                           |                  |    |
|              |          |         |          |          | Brown - Dark brown m-f S                   |                     | [SP]         |        | FID = 2 ppm               |                  |    |
| 33           | S-<br>17 | SS      | 0.8      | 50/3"    | Brown silty f SAND [SM                     | ] (wet)             |              |        | Tight soil                |                  |    |
| 34           | ·'       |         |          |          |                                            |                     |              |        | Auger to 34 feet          |                  |    |
|              |          |         |          | 10       | Brown clayey SILT                          |                     |              |        | •                         |                  |    |
| 35           | S-       | SS      | 2.0      | 8        | [ML]                                       | (wet)               |              |        | FID = 1 ppm               |                  |    |
|              | 18       |         |          | 6        |                                            |                     |              | ļ      |                           |                  |    |
| 36           |          |         |          | 15       |                                            |                     |              |        |                           |                  |    |
|              |          |         |          | 18       | Brown SILT                                 | (                   |              |        | FID = 5 ppm               |                  |    |
| 37           | S-       | SS      | 1.5      | 22<br>32 | [ML]<br>Brown f sandy SILT, trace          | (wet)<br>a clav – I | ML)          |        | Tight soil                | •                |    |
| 38           | 19       |         |          |          | Brown silty f SAND [SM                     |                     |              |        | Auger to 38 feet          |                  |    |
|              |          | · · ·   |          |          | Brown silty f SAND                         | ł                   |              |        |                           |                  |    |
| 39           | S-       | ss      | 0.8      | 50/4"    | [SM]                                       | (wet)               |              |        | FID = 5 ppm               |                  |    |
|              | 20       |         |          |          | . 4                                        |                     |              |        | Tight soil                |                  |    |
| 40           |          |         |          |          |                                            |                     |              |        | Auger to 40 feet          |                  |    |
|              |          |         | ~ .      |          | Brown silty f SAND                         | , .                 |              | Ì      |                           |                  |    |
| 41           | S-       | SS      | 1.5      | 25       | [SM]                                       | (wet)               |              |        | FID = 0 ppm<br>Tight soil |                  |    |
|              | 21       |         |          | 50/5"    | Brown f sandy SILT                         | (moist)             |              |        | Auger to 42 feet          |                  |    |
| 42           |          |         |          | ]        | [ML]                                       | (កាហទាវ)            |              |        |                           |                  |    |
| <br>Standard | Pene     | etratio | 1 Test M | J-Value  | LANGAN                                     | ngineerin           | ig and       | d Env  | ironmental Servi          | ces, Inc.        | _  |
|              |          |         |          |          |                                            |                     | ntor 1       | Flm    | wood Park, NJ             | 07407            |    |

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| roject N  | ame  | <u></u> |          | PSE&       | LOG OF BORING NO:<br>G Former Front Street Gas Works Si | P-2<br>te | St<br>Project No. 14 |        |              |   |
|-----------|------|---------|----------|------------|---------------------------------------------------------|-----------|----------------------|--------|--------------|---|
| oring Lo  |      | on      |          |            | k, New Jersey                                           |           | Date Started         |        | Date Finishe | d |
| rilling C |      |         |          |            | Environmental Services, Inc.                            |           | 9/8/97               | 7      | 9/8/97       |   |
| Depth     | s    | Туре    | Recov.   | SPT"       | DESCRIPTION                                             |           | Ri                   | EMAR   | кs           |   |
| (ft)      |      |         | (ft)     | ы/6"<br>WR | Brown f sandy SILT                                      | <u> </u>  |                      |        |              |   |
| 43        | S-   | SS      | 2.0      | 55         | [ML]                                                    |           | FID = 0 ppn          | า      |              |   |
|           | 22   | 00      | 2.0      | 42         | Brown silty CLAY-                                       |           | Auger to 44          |        |              |   |
| 44        |      |         |          | 46         | [CL] (moist-c                                           | dry)      | Install piezo        |        | at 44 feet   |   |
|           |      |         |          |            | Boring completed at 44 feet                             |           | End 13:00            |        |              |   |
| 45        |      |         |          |            |                                                         |           |                      |        |              |   |
| 46        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          | :          |                                                         |           |                      |        |              |   |
| 47        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         | •         |                      |        |              |   |
| 48        |      |         |          |            |                                                         |           |                      |        |              |   |
| 49        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 50        |      |         |          |            |                                                         |           |                      |        |              |   |
| 51        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 52        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 53        |      |         |          |            |                                                         |           |                      |        |              |   |
| 54        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 55        |      |         |          | 1          | · _                                                     |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 56        |      |         |          |            |                                                         |           |                      |        | -            |   |
| 57        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 58        |      |         |          |            |                                                         |           |                      |        | •            |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 59        |      |         |          |            |                                                         |           |                      |        |              |   |
| 60        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 61        |      |         |          | -          |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 62        |      |         | ~        |            |                                                         |           |                      |        |              | ſ |
| 63        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      |         |          |            |                                                         |           |                      |        |              |   |
| 64        |      |         |          |            |                                                         |           |                      |        |              |   |
|           |      | •       | [        |            |                                                         |           |                      |        | ·····        |   |
| tandard   | Pene | tration | n Test I | N-Value    | E LANGAN Engineerin                                     | g ar      | nd Environmental     | Servic | ces, Inc.    |   |

| Project Nan<br>Boring Loca | ation     |        |           | k, New Jerse      |                | as Works Site         |         | ion and D  | atum      | 38.41          |
|----------------------------|-----------|--------|-----------|-------------------|----------------|-----------------------|---------|------------|-----------|----------------|
| Drilling Con               |           |        | CT&E      | Environment       | al Services,   | Inc.                  | Date S  | tarted     |           | Date Finished  |
| Drilling Equ               |           | ·      | Mobile    | Drill B-80 ar     | d Mobile Dr    | ill B-61              |         | 9/11       | /97       | 9/15/97        |
| Size and Ty                |           |        | 4-1/4" ar | nd 8-1/4" I.D. Ho | llow Stem Auge | rs, 5-7/8" Roller Bit |         | letion Dep | oth       | Rock Depth     |
| Casing                     |           |        |           |                   |                |                       |         | 70 ft      |           | 70 ft          |
| Casing Harr                | mer       | Weigh  |           | <u> </u>          | Drop           |                       | Water   |            | ~ 30.5 ft |                |
| Sampler                    |           |        | 2" O.D    | . Split Spoon     |                |                       | Driller |            | K. Mike I |                |
| Sampler Ha                 | mmer V    | Veight | <b>_</b>  | 140 lb            | Drop           | 30"                   | Inspec  | tor        | Elana Se  | elman          |
| Depth S                    | Type      | Recov. | SPT       |                   | DESCR          | IPTION                |         |            | REMARI    | ŚŚ             |
| (ft)                       |           | (ft)   | Ы/6"      |                   |                |                       |         |            |           |                |
|                            |           |        |           |                   |                |                       |         | Start 8:10 |           |                |
| 1                          |           |        |           |                   |                |                       |         | Auger thro |           |                |
|                            |           |        |           |                   |                |                       |         |            |           | gh cobbles     |
| 2                          |           |        |           |                   | See Bori       |                       |         | -          |           | th 4-1/4" l.D. |
|                            |           |        |           |                   | Log of E       | Boring                |         | Holiow Ste | em Auge   | r              |
| 3                          |           |        |           |                   |                |                       |         |            |           |                |
| <b>ا</b> -۲                |           |        |           |                   |                |                       |         |            |           |                |
| 4                          |           |        |           |                   | -              |                       | ļ       |            |           |                |
| 5                          |           |        |           |                   |                |                       |         |            |           |                |
| Ť                          |           |        |           |                   |                |                       |         |            |           |                |
| 6                          |           |        |           |                   |                |                       | 1       | •          |           |                |
| ]                          |           |        |           |                   |                |                       | ·       |            |           |                |
| 7                          |           |        |           |                   |                |                       |         |            |           |                |
|                            |           |        |           |                   |                |                       | Ĩ       |            |           |                |
| 8                          |           |        | 1         |                   |                |                       |         |            |           |                |
| e                          |           |        | ł         |                   |                |                       |         |            |           |                |
|                            |           |        |           |                   |                |                       |         |            |           |                |
| 10                         |           |        |           |                   |                |                       |         |            |           |                |
|                            |           |        |           |                   |                |                       |         |            |           |                |
| 11                         |           |        |           |                   |                | -                     |         |            |           |                |
|                            |           |        |           |                   |                |                       |         |            |           |                |
| 12                         |           |        |           |                   |                |                       |         |            |           |                |
|                            |           | [      |           |                   |                |                       |         |            |           |                |
| 13                         |           | ·      |           |                   |                |                       |         |            |           |                |
| 14                         | 1         |        |           |                   |                |                       |         |            |           |                |
|                            |           |        |           |                   |                |                       |         |            |           |                |
| 15                         |           |        |           |                   |                |                       |         |            |           |                |
|                            |           |        |           |                   |                |                       | l       |            |           |                |
| 16                         |           |        |           |                   |                |                       | Í       |            |           |                |
|                            |           |        | -         |                   |                |                       |         |            |           |                |
| 17                         |           |        |           |                   |                |                       | ſ       |            |           |                |
|                            |           |        |           |                   |                |                       |         |            |           |                |
| 18                         | l l       | ~ .    |           |                   |                |                       |         |            |           |                |
| 19                         | ]         |        |           |                   |                |                       | 1       |            |           |                |
|                            |           |        |           |                   |                |                       |         |            |           |                |
| 20                         |           |        |           |                   |                |                       |         |            |           |                |
|                            | •.        |        |           |                   |                |                       |         |            |           |                |
| Standard Per               | netration | Test N | I-Value   |                   | LANGAN         | Engineering an        | nd Envi | ronmenta   | I Service | es, Inc.       |
|                            |           |        |           |                   |                | r Drive Center        |         |            |           | 7407           |

| ing L  | ocat     | ion      |                | Newa                     | G Former Front Street Gas Works Site<br>rk, New Jersey<br>Environmental Services, Inc. |          | Started<br>9/11/97 | Date Finished<br>9/15/97 |
|--------|----------|----------|----------------|--------------------------|----------------------------------------------------------------------------------------|----------|--------------------|--------------------------|
| epth   | s.       | T        | Recov.<br>(ft) | SPT*                     | DESCRIPTION                                                                            | <u> </u> | REMAR              |                          |
| (ft) - | <u> </u> | <u> </u> |                | 000                      |                                                                                        |          |                    |                          |
| 21     | 1        |          |                |                          |                                                                                        |          |                    |                          |
| 22     |          |          |                |                          | -                                                                                      |          |                    |                          |
| 23     |          |          |                |                          |                                                                                        |          | ·                  |                          |
| 24     |          |          |                |                          |                                                                                        |          |                    |                          |
| 25     |          |          |                |                          |                                                                                        |          |                    |                          |
| 26     |          |          |                |                          |                                                                                        |          |                    |                          |
| 27     | ]        |          |                | -                        |                                                                                        |          |                    |                          |
| 28     |          |          |                |                          |                                                                                        |          |                    |                          |
|        |          |          |                |                          |                                                                                        |          |                    |                          |
| 30     |          |          |                |                          |                                                                                        |          |                    |                          |
|        |          |          |                |                          |                                                                                        |          |                    |                          |
| 31     |          |          |                |                          |                                                                                        |          |                    |                          |
| 32     |          |          |                |                          |                                                                                        |          |                    |                          |
| 33     |          |          |                |                          | -                                                                                      |          |                    |                          |
| 34     |          |          |                |                          |                                                                                        |          |                    |                          |
| 35     |          |          |                |                          |                                                                                        |          |                    |                          |
| 36     |          |          |                |                          |                                                                                        |          |                    |                          |
| 37     | S-1      | SS       | 2.0            | 10<br>7<br>28            | Brown silty f SAND, trace f gravel<br>[SM] (wet)                                       |          | FID = 0 ppm        |                          |
| 38     |          |          |                | 17                       |                                                                                        |          |                    |                          |
| 39     | S-2      | SS       | 0.4            | 19<br><sup>-</sup> 50/4" | Brown silty f SAND, trace f gravel<br>[SM] (wet)                                       |          | FID = 0 ppm        |                          |
| 40     |          |          |                |                          |                                                                                        |          | Auger to 40 feet   |                          |
| 41     | S-3      | SS       | ~<br>1.9       | 27<br>30<br>36           | Brown silty f SAND, trace f gravel<br>[SM]                                             |          | FID = 0 ppm        |                          |
| 42     |          |          |                | 36<br>29 -               | Brown silty CLAY [CL] (moist)                                                          |          |                    |                          |
|        |          |          | n Test I       |                          | e LANGAN Engineering a                                                                 | and En   | ironmontal Convi   |                          |

| Project N     | lame          |     |                |                 | G Former Front Street Gas                   | Works Site     | Projec     |                                           | Date Finished |
|---------------|---------------|-----|----------------|-----------------|---------------------------------------------|----------------|------------|-------------------------------------------|---------------|
| Boring L      |               |     |                |                 | k, New Jersey<br>Environmental Services, II |                | Juate s    | Started 9/11/97                           | 9/15/97       |
| Drilling (    | Comp          | any | r              |                 | Environmental Services, II                  | ic.            | <u> </u>   | 3/11/07                                   |               |
| Depth<br>(ft) | . S Type Reco |     | Recov.<br>(ft) | SPT<br>bl/6"    | DESCRIF                                     | TION           |            | REMAF                                     | 1KS           |
|               |               |     |                | 18              | Brown silty CLAY                            |                |            | FID = 0 ppm                               | ·             |
| 43            | ]S-4          | SS  | 1.1            | 30              | [CL]                                        | (moist)        |            | Auger to 44 feet                          |               |
|               |               |     |                | 33              |                                             |                |            | Install 8" Steel Ca<br>center of augers 1 | + -           |
| 44            |               |     |                | <u>36</u><br>43 | Brown m-f SAND and CL                       | AV trace silts |            | Tremie grout ann                          |               |
| 45            | S-5           | SS  | 0.8            | 43              | c-f gravel                                  |                |            | between casing a                          |               |
| 40            | 3-3           | 33  | 0.6-*          | 50/3"           | [SC-CL]                                     | (moist)        |            | w/ portland ceme                          |               |
| 46            |               |     |                |                 | []                                          | ( ,            |            | removing augers                           |               |
|               |               |     |                | 50              | Brown gravelly c-f SAND,                    | trace silt     |            | Start 9/15/97 8:0                         |               |
| 47            | S-6           | SS  | 0.4            | 50/4"           | [SP]                                        | (wét)          |            | Drill with 5-7/8" R                       | oller Bit     |
| · _           | ]             |     |                |                 |                                             |                |            | FID = 0 ppm                               |               |
| 48            | <b> </b>      |     |                |                 |                                             |                |            | Drill to 48 feet                          |               |
|               |               | ~~  |                | 75/5"           | Brown c-f SAND, trace-so                    | me siit and ci | ay,        | FID = 0 ppm                               |               |
| 49            | S-7           | SS  | 0.4            |                 | trace f gravel<br>[SM-SC]                   | (dry-moist)    |            | 1 ID - 0 ppm                              |               |
| 50            |               |     |                |                 |                                             | (ary-moist)    |            | Drill to 50 feet                          |               |
|               |               |     |                | 58              | Brown c-f SAND, trace-sc                    | me silt and cl | ay.        |                                           |               |
| 51            | S-8           | SS  | 0.1            |                 | trace f gravel                              |                |            | FID = 0 ppm                               |               |
|               |               |     |                |                 | [SM-SC]                                     | (dry-moist)    |            | Rock in tip of spo                        | on            |
| 52            |               |     |                |                 |                                             |                |            | Drill to 52 feet                          |               |
|               |               |     |                |                 | Brown m-f sandy SILT, tra                   |                |            |                                           |               |
| 53            | S-9           | SS  | 0.7            | 100/3"          | [ML]                                        | (dry-moist)    |            | FID = 0 ppm                               |               |
| 54            |               |     |                |                 |                                             |                |            | Drill to 54 feet                          |               |
|               |               |     |                | 85              | Brown c-f SAND, trace-so                    | me silt, trace | f          |                                           |               |
| 55            | S-            | SS  | 0.2            |                 | gravel                                      |                |            | FID = 0 ppm                               |               |
|               | 10            |     |                |                 | [SM-SP]                                     | (dry-moist)    | -          |                                           |               |
| 56            |               |     |                |                 |                                             |                |            | Drill to 56 feet                          |               |
|               |               |     |                | 100/5"          | Brown c-f SAND, trace-so                    | me silt, trace | c-f        |                                           |               |
| 57            | S-            | SS  | 0.3            |                 | gravel                                      | (d             |            | FID = 0 ppm                               |               |
|               | 11            |     |                |                 | [SM-SP]                                     | (dry-moist)    |            | Drill to 58 feet                          |               |
| 58            |               |     |                | 53              | Brown c-f SAND, trace-so                    | me silt_trace  | c-f        |                                           |               |
| 59            | S-            | ss  | 0.7            | 53<br>100/4"    |                                             | The plit, page |            | FID = 0 ppm                               |               |
|               | 12            | 55  | 0.7            |                 | [SM-SP]                                     | (dry-moist)    | 1          |                                           |               |
| 60            |               |     |                |                 |                                             |                |            | Drill to 60 feet                          |               |
|               |               |     |                | 50              | Brown c-f SAND, tráce-so                    | me silt, trace | c-f        |                                           |               |
| 61            | S-            | SS  | 1.3            |                 | gravel                                      |                |            | FID = 0 ppm                               |               |
|               | 13            | l   |                | 100/5"          | [SM-SP]                                     | (dry-moist)    |            |                                           |               |
| 62            |               |     |                |                 | Desus - COAND to                            |                | <u>_</u> , | Drill to 62 feet                          |               |
| <u> </u>      |               |     | 0.2            |                 | Brown c-f SAND, trace-so                    | me siit, trace | (-1        | FID = 0 ppm                               |               |
| 63            | S-<br>14      | SS  | 0.2            | 100/5"          | graver<br>[SM-SP]                           | (dry-moist)    |            | Rock fragments in                         | tip of spoon  |
| 64            | 14            |     |                |                 |                                             |                |            | Drill to 64 feet                          | e - 1         |
| <u> </u>      |               |     |                |                 |                                             |                |            |                                           |               |
| Standard      |               |     |                |                 | LANCANE                                     | nainoprina a   | nd Env     | ironmental Servi                          | ices Inc.     |

| oject Name                                                                 |           | PSE&   |                                                                           | Project |                                                    |               |
|----------------------------------------------------------------------------|-----------|--------|---------------------------------------------------------------------------|---------|----------------------------------------------------|---------------|
| oring Locatio                                                              |           | Newa   | rk, New Jersey                                                            | Date St |                                                    | Date Finished |
| illing Compa                                                               | any<br>I  | CT&E   | Environmental Services, Inc.                                              | T       | 9/11/97                                            | 9/15/97       |
| Depth S<br>(ft)                                                            | Type Reco |        | DESCRIPTION                                                               |         | REMAR                                              | RKS           |
| 65 S-<br>15<br>66                                                          | SS 0.4    | 100/5  | Brown c-f SAND, trace-some silt, trace c<br>gravel<br>[SM-SP] (dry-moist) | F       | Pockets of clay<br>FID = 0 ppm<br>Drill to 66 feet |               |
| 67 S-<br>16<br>68                                                          | SS 0.2    | 100/3" | Brown silty f SAND, trace clay, occasiona<br>rock fragments<br>[SM]       | F       | ID = 0 ppm<br>Inill to 68 feet                     |               |
| -<br>69 S-<br>17<br>70                                                     | SS 0.1    |        | Brown silty f SAND, occasional rock<br>fragments<br>[SM]                  | F       | poon bouncing<br>ID = 0 ppm<br>will to 70 feet     |               |
| 71 S-<br>18                                                                | SS NF     | 100/0″ |                                                                           | s       | poon bouncing<br>Istall piezometer                 | at 70 feet    |
| 72<br>73<br>74<br>75<br>76<br>77<br>78<br>79<br>80<br>81<br>82<br>83<br>84 |           |        | Boring completed at 70 feet                                               | E       | nd13:50                                            |               |
| <u>85</u><br>86                                                            |           |        |                                                                           |         |                                                    |               |

|              | Nama       |        |                  | PSFL   | LOG OF BORING NO: P-3<br>G Former Front Street Gas Works Site | Project   | Sheet 1 (<br>No. 1406602 |                 |
|--------------|------------|--------|------------------|--------|---------------------------------------------------------------|-----------|--------------------------|-----------------|
| Project      |            |        |                  |        |                                                               |           | on and Datum             | 8.88            |
| Boring       |            |        |                  |        | Environmental Services, Inc.                                  | Date St   |                          | Date Finished   |
| Drilling     |            |        |                  |        |                                                               |           | 9/8/97                   | 9/9/97          |
| Drilling     |            |        |                  |        | Drill B-80                                                    | Comple    | tion Depth               | Rock Depth      |
| Size an      | d Type     | e of E | 3 it             |        | I.D. Hollow Stem Auger                                        |           | 18 ft                    | Not Encounter   |
| Casing       |            |        |                  |        |                                                               |           |                          | Inot Encounter  |
| Casing       | Натп       | ier    | Weigh            |        |                                                               | Water L   |                          |                 |
| Sample       | r _        |        |                  | 2" O.E | ). Split Spoon                                                | Driller   | K. Mike M                |                 |
| Sample       | r Ham      | mer V  | Veight           | T      | 140 lb Drop 30"                                               | Inspect   | or Elana Se              | elman           |
| Depth        | s          | Туре   | Recōv.<br>(ft)   | SPT*   | DESCRIPTION                                                   |           | REMAR                    | <s< td=""></s<> |
| (ft)         |            |        | <u> </u>         |        | CONCRETE                                                      |           | Start 15:30              | ·····           |
| 1            | -<br>S-1   | ss     | 0.5              | 10     | Brown - Dark gray silty f SAND, trace c-1                     | f A       | Auger and jackhan        | nmer through    |
| ╞╼╼╧         |            | 00     | 0.5              | 29     | gravel, occasional concrete fragments                         |           | concrete                 | F1D = 0 ppm     |
| 2            | -{         |        |                  | 10     | [FILL] (moist-dry)                                            | 5         | Stop 15:40               |                 |
| <u> </u>     |            |        |                  | 15     | Light gray silty f SAND, trace c-f gravel,                    | 1         | Start 9/9/97 7:30        |                 |
|              | -<br>  S-2 | SS     | 0.3              | 17     | occasional concrete fragments                                 |           | ID = 0 ppm               |                 |
| 3            | -13-2      | 55     | 0.3              | 1      | ÷                                                             | ľ         |                          |                 |
|              | -          |        |                  | 11     | [FILL] (dry)                                                  |           | Auger to 4 feet          |                 |
| 4            |            |        | ļ                | 18     | Distant Distant DAND Anone                                    |           | nugei lo a leel          |                 |
|              |            |        |                  | 14     | Light brown - Black silty f SAND, trace c                     |           |                          |                 |
| 5            | ]S-3       | SS     | 1.1              | 12     | gravel, occasional brick fragments                            | · · · · · | 1D = 0 ppm               |                 |
|              |            |        |                  | 8      | Orangish brown - Brown m-f SAND, trac                         |           |                          |                 |
| 6            | 7          |        |                  | 9      | silt and f gravel, occasional glass fragme                    | ents      |                          |                 |
|              | 1          |        |                  | 8      | Dark gray gravelly c SAND                                     |           |                          |                 |
| 7            | S-4        | SS     | 1.1              | 6      | [FILL] (wet)                                                  | F         | ID = 35 ppm              |                 |
|              |            |        | 1                | 4      | Yellow brown - Dark gray c-f SAND, som                        | nef S     | Sheen on water           |                 |
| 8            | -          |        |                  | 4      | gravel, trace silt, occasional cinders                        | A         | luger to 8 feet          |                 |
| <del>`</del> |            |        |                  | 5      | Dark gray c SAND, some f gravel, trace                        | silt      |                          |                 |
| 9            | S-5        | SS     | 1.2 <sup>.</sup> | 3      | , , , , , , , , , , , , , , , , , , ,                         |           | ID = 400 ppm             |                 |
|              |            | 00     | 1.2              | 3      | Dark brown silty c-f SAND, trace clay                         |           | Sheen on water           |                 |
| 10           |            |        |                  | 2      | [FILL] (wet)                                                  |           | Auger to 10 feet         |                 |
|              |            |        |                  | 2      | Dark brown c-f SAND, some silt and f gr                       |           | - <u>j</u> -             |                 |
| ' د د        |            | SS     |                  |        |                                                               |           | ID = 100 ppm             |                 |
| 11           | S-6        | 22     | 1.1              |        |                                                               |           |                          |                 |
| '            | -          |        |                  | 1      | Dark brown c-f SAND, trace silt and clay                      | anu       |                          | -               |
| . 12         |            |        |                  | 1      | c-f gravel, occasional pockets of clay                        | ł         |                          |                 |
|              |            |        |                  | 6      | [FILL] (wet)                                                  | , l_      |                          |                 |
| 13           | S-7        | SS     | 1.0              | 4      | Orangish brown silty f SAND, occasional                       | I   +     | ID = 600 ppm             |                 |
|              |            |        |                  | 3      | cinders                                                       | I .       |                          |                 |
| 14           |            |        |                  | 4      | Dark gray fibrous clayey SILT [ML]                            | [A        | luger to 14 feet         |                 |
|              |            |        |                  | 1      | Grayish brown clayey SILT                                     | [         |                          |                 |
| 15           | S-8        | SS     | 1.7              | 1      | [ML] (moist)                                                  | F         | ID = 200 ppm             |                 |
|              | 1 1        |        | 1                | 1      |                                                               |           |                          |                 |
| 16           | 1 1        |        |                  | 1      |                                                               | l         |                          |                 |
|              | ┼──┦       |        |                  | 2      | Grayish brown silty CLAY                                      |           |                          |                 |
| 17           | S-9        | ss     | _1.9             | 2      | [CL] (moist)                                                  | F         | ID = 70 ppm              |                 |
|              |            | 55     | ~'···            | 2      |                                                               |           | uger to 18 feet          |                 |
| 40           |            |        |                  |        |                                                               |           | nstall piezometer a      | at 18 feet      |
| 18           | <b>↓</b> ↓ |        |                  | 2      |                                                               |           | ind 8:35                 |                 |
| /            |            |        | ļ                |        | Boring completed at 18 feet                                   |           | .10 0.33                 |                 |
| 19           |            | Į      |                  |        |                                                               | l         |                          | -               |
| _            |            |        |                  |        |                                                               |           |                          |                 |
| 20           |            | •      |                  |        |                                                               |           |                          |                 |
|              | - (        |        |                  |        |                                                               |           |                          |                 |

Standard Penetration Test N-Value ----

LANGAN Engineering and Environmental Services, Inc.

| Project Name              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DCC           |                   | OF BORIN     |                                       |          | Sheet 1 d                              |                     |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|--------------|---------------------------------------|----------|----------------------------------------|---------------------|
| Project Name              | <u></u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               | &G Former Fro     |              | as Works Site                         | Proje    |                                        |                     |
| Boring Location           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | ark, New Jerse    |              | <u> </u>                              |          | tion and Datum                         | 9.06                |
| Drilling Compa            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | E Environment     | al Services, | Inc.                                  | Date     | Started                                | Date Finished       |
| Drilling Equipm           | and the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second se |               | ile Drill B-80    |              |                                       | <u> </u> | 9/10/97                                | 9/17/97             |
| Size and Type o<br>Casing | of Bit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6-5/8         | " I.D. Hollow Ste | m Auger, 5-7 | /8" Roller Bit                        | Comp     | oletion Depth<br>30 ft                 | Rock Depth<br>30 ft |
| Casing Hamme              | r Weig                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ht            |                   | Drop         |                                       | Water    | Level ~ 5.5 ft                         | <u> </u>            |
| Sampler                   | <del>-</del>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               | .D. Split Spoon   | <u>I F</u>   | · · · · · · · · · · · · · · · · · · · | Drille   |                                        | Aillionn            |
| Sampler Hamm              | or Woigh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               | 140 lb            | Dees         | 007                                   |          |                                        |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1             | 14010             | Drop         | 30"                                   | Inspe    | ctor Elana Se                          | elman/Ed Zofchal    |
|                           | Type Recov                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | . SPT<br>БІ/б |                   | DESCRI       | PTION                                 |          | REMARI                                 | (S                  |
| (ft)                      | (ft)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 010           | CONCRETE          |              |                                       |          |                                        |                     |
| 1                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | CONCRETE          | ***********  |                                       |          | Start 10:40                            |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   | •            |                                       |          | Jackhammer throug                      | gh concrete         |
| 2                         | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               | 1                 |              | •                                     |          | Auger to 10 feet                       | la -t               |
| <u>_</u>                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | 1                 |              |                                       |          | Auger grinding at 1                    | 1001                |
| 3                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       |          | 1                                      |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   | C            | 0 0                                   |          | · ·                                    |                     |
| , -                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | 1                 | See Bori     | 0                                     |          |                                        |                     |
| 4                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   | Log of E     | oring                                 |          | 1                                      |                     |
| _                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       |          |                                        |                     |
| 5                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | ļ                 |              |                                       |          |                                        |                     |
| _                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1             |                   |              | •                                     |          |                                        |                     |
| 6                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1             |                   |              |                                       |          |                                        |                     |
| 7                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | 1                 |              |                                       | l        |                                        |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | ł                 |              |                                       |          |                                        |                     |
|                           | ļ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               | 1                 |              |                                       |          |                                        |                     |
| 8                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1             |                   |              |                                       |          |                                        |                     |
| 9                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       |          |                                        |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       |          |                                        |                     |
| 10                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       |          |                                        |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       |          |                                        |                     |
| 11 S-1 S                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 4             |                   |              | lay and silt and                      | L L      |                                        |                     |
| <u></u>  S-1  S           | S 0.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4             | gravel, occasi    | onal glass f | •                                     |          | FID = 150 ppm                          |                     |
| 12                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               | [FILL]            |              | (wet)                                 |          |                                        |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 5             |                   |              |                                       |          |                                        |                     |
| 13 S-2 S                  | 0 4 -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 4             |                   |              | f SAND, trace of                      | -        |                                        |                     |
| <u>13</u> S-2 S           | S 1.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6             |                   |              | sional cinders,                       |          | FID = 500 ppm                          |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 7             | fibers and coa    | I fragments  |                                       |          |                                        |                     |
| 14                        | <del></del> _                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5             | [FILL]            |              | (wet)                                 |          | Auger to 14 feet                       |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6             | Brown silty CL    | AY           |                                       | ļi li    | FID = 100 ppm                          |                     |
| <u>15</u> S-3 S           | S 1.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2             | [CL]              |              | (moist)                               |          |                                        | ľ                   |
| , - I I                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2             |                   |              |                                       |          | FID = 50 ppm                           |                     |
| 16                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3             | 1                 |              |                                       |          | Auger to 16 feet                       |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2             | 1                 |              |                                       |          |                                        | ID = 2-3 ppm        |
| <u>17</u> S-4 SS          | S NR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | - 3           |                   |              |                                       | ļ        | nstall 8" Steel Casin                  | g through           |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2             |                   |              |                                       |          | center of augers to 1                  |                     |
| 18                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 3             |                   |              |                                       |          | Fremie grout annular                   |                     |
|                           | ~                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5             | Dark gray orga    | nic SILT, so | ome clay, trace                       |          | etween casing and                      |                     |
| 19 8-5 55                 | 3 2.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 6             | sand and forga    |              | •                                     |          | vith portland cement                   |                     |
|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6             | [OL]              |              | (moist)                               |          | while removing auge                    |                     |
| •                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6 -           | [ []              |              | 1                                     |          | Start 9/17/97 9:05                     |                     |
| 20                        | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                   |              |                                       | 1.       | AGILULIIJI J.VJ                        |                     |
| 20                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   |              |                                       | 10       | ID - 100 100                           | Oranaia adart       |
| 20<br>andaro Penetrat     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |               |                   | ANGANE       | nineering and                         | F        | ID = 100-120 ppm<br>ronmental Services | Organic odor -      |

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| Project N               |          |         | · · · · · · · · · · · · · · · · · · · |              | G Former Front Street Gas Works Site<br>k, New Jersey                               |         | ct No. 140660<br>Started             | Date Finished    |
|-------------------------|----------|---------|---------------------------------------|--------------|-------------------------------------------------------------------------------------|---------|--------------------------------------|------------------|
| Boring Lo<br>Drilling C |          |         |                                       |              | Environmental Services, Inc.                                                        |         | 9/10/97                              | 9/17/97          |
| Depth -                 | s        |         | Recov.                                | SPT*         | DESCRIPTION                                                                         |         | REMAR                                | IKS              |
| (ft)                    |          |         | (ft)                                  | 1            | Dark brownish gray organic clayey SILT                                              | -       | Drill with 5-7/8" R                  | oller Bit        |
| 21                      | S-6      | SS      | 1.3                                   | 1            | trace f sand and f organic material<br>[OL] – (moist)                               | •       | FID = 20-30 ppm                      |                  |
| 22                      |          |         |                                       | 1            |                                                                                     |         | - ·                                  |                  |
| 23                      | S-7      | SS      | 2.0                                   | 3<br>2       | Dark brownish gray organic finely lamin<br>silty CLAY, trace c-f sand and f organic | ated    | FID = 8-10 ppm<br>Slight to moderate | e organic odor   |
|                         |          |         |                                       | 3            | material [OH] (moist)                                                               |         |                                      | ·                |
| 24                      |          |         |                                       | 4            | TIMBER<br>Gray - Red brown m-f SAND, some silt,                                     |         | Drill to 24 feet                     |                  |
| ~_ <sup>_</sup> _       | S-8      | SS      | 0.5                                   | 20<br>16     | trace-some f gravel                                                                 |         |                                      |                  |
| 25<br>                  | 5-0      | 22      | 0.5                                   | 25<br>33     | [SM] (moist-wet)                                                                    |         | Sandstone rock fi<br>spoon           | agment in tip of |
|                         |          |         |                                       | 37           | Gray - Red brown c-f SAND, some clay                                                | ey      |                                      |                  |
| 27                      | S-9      | SS      | 0.9                                   | 60           | silt, trace f gravel                                                                |         | FID = 1-2 ppm                        |                  |
|                         |          |         |                                       | 100/5"       | [SM] (dry-moist)                                                                    |         | Refusal                              |                  |
| 28                      |          |         | ļ                                     |              |                                                                                     |         | Drill to 28 feet<br>FID = 1-2 ppm    |                  |
| 29                      | S-       | SS      | 0.5                                   | 77<br>100/5" | Red brown c-f SAND and GRAVEL, trac<br>some silt                                    | <br>ce- | Refusal                              |                  |
| 30                      |          |         |                                       |              | [SP-GP] (moist-wet)                                                                 |         | Drill to 30 feet                     |                  |
|                         |          |         |                                       | 100/2"       |                                                                                     |         | Install piezometer                   | r at 30 feet     |
| 31                      | S-<br>11 | SS      | NR                                    | :            |                                                                                     |         |                                      |                  |
| 32                      |          |         |                                       |              | Device completed at 20 feat                                                         | - · ·   | End 10:35                            |                  |
| 33                      |          |         |                                       |              | Boring completed at 30 feet                                                         |         |                                      |                  |
| 34                      |          |         |                                       |              |                                                                                     |         |                                      |                  |
| 35                      |          |         |                                       |              |                                                                                     |         |                                      |                  |
| 36                      |          |         |                                       |              |                                                                                     |         |                                      |                  |
| 37<br>38                |          |         |                                       |              |                                                                                     |         |                                      |                  |
|                         |          |         |                                       | -            |                                                                                     |         |                                      |                  |
| 40                      |          |         | ~ .                                   |              | ·                                                                                   |         |                                      |                  |
| 41                      |          |         |                                       |              |                                                                                     |         |                                      |                  |
| 42                      |          |         |                                       | -            |                                                                                     |         |                                      |                  |
| Standard                | Pené     | etratio | n Test I                              | N-Valu       | E LANGAN Engineering a                                                              | nd En   | vironmental Servi                    | ces, Inc.        |
| Januaro                 | i chi    | suauy   | 11 16311                              | - value      |                                                                                     |         | nwood Park, NJ                       | 07407            |

|            |          |          |        |              |                                      | P-4      |        |            | Sheet 1     |               | 1   |
|------------|----------|----------|--------|--------------|--------------------------------------|----------|--------|------------|-------------|---------------|-----|
| Project N  | lame     |          |        | PSE&         | G Former Front Street Gas Works Si   |          | rojec  |            | 1406602     |               |     |
| Boring L   | ocat     | ion      |        | Newa         | rk, New Jersey                       |          |        | ion and    | Datum       | 9.25          |     |
| Drilling ( |          |          | _      |              | Environmental Services, Inc.         |          | ate S  | tarted     | 9/97        | Date Finisher | d [ |
| Drilling E | Equip    | oment    |        | Mobile       | Drill B-80                           |          |        | 9/9/97     |             |               |     |
| Size and   | Тур      | e of E   | Bit    | 4-1/4"       | I.D. Hollow Stem Auger               | ]C       | compl  | etion D    | epth        | Rock Depth    |     |
| Casing     |          |          |        |              | -                                    |          |        | 18 ft      |             | Not Encounte  | red |
| Casing H   | lamn     | ner      | Weigh  | t            | Drop                                 | W        | Vater  | Level      | ~ 6 ft      |               |     |
| Sampler    |          |          |        | 2" O.E       | ). Split Spoon                       | D        | Filler |            | K. Mike     | Millican      |     |
| Sampler    | Ham      | mer V    | Veight |              | 140 lb Drop 30"                      | In       | nspec  | tor        | Elana Se    | eelman        |     |
| Depth      | s        | Туре     | Recov. | SPT          | DESCRIPTION                          |          |        |            | REMAR       | KS            |     |
| (ft)       | ļ        |          | (ft)   | <i>ы</i> /6" |                                      |          |        |            |             |               |     |
| _          | }        |          |        |              | CONCRETE                             |          |        | Start 10   |             |               |     |
| 1          | S-1      | SS       | 0.7    | 25           | Light brown m-f SAND, trace silt and | d f gra  |        |            | nrough cor  |               |     |
| -          | 1        |          |        | 50/4"        | occasional concrete fragments        |          |        | FID = 0    | •••         | Refusal       |     |
| 2          | <u> </u> |          | ļ      | ļ            | Purplish brown - Yellow silty f SAND | ), trace |        |            | tip of spoc | n             |     |
|            |          |          |        | 5            | c-f gravel [FILL] (dry)              |          |        | Auger to   |             |               |     |
| 3          | S-2      | SS       | 0.5    | 50/3"        | Reddish brown c-f SAND, some silt,   | trace    |        | FID = 0    | •••         | Refusal       |     |
| _          | ļ        |          |        | 1            | gravel [FILL] (dry)                  |          |        | Auger to   |             |               |     |
| 4          |          | <u> </u> |        | ļ            | Pinkish brown m-f SAND, some silt,   |          |        | Auger g    | rinding     |               |     |
| -          | ļ        |          | ļ      | 50/4"        | gravel, occasional brick and concret | -        | -      | Refusal    |             |               |     |
| 5          | S·3      | SS       | 0.3    |              | Reddish brown - Brown silty f SAND   |          |        |            | tip of spoc | n             |     |
| _          |          |          |        | 1            | occasional brick and concrete fragm  | ients    |        | FID = 0    | •••         |               |     |
| 6          |          |          |        |              | [FILL] (dry)                         |          |        | Auger to   | o 6 feet    |               |     |
|            |          |          |        | 2            | Brown gravelly c-f SAND, occasiona   | d        | ļ      |            |             |               |     |
| 7          | S-4      | SS       | 0.2    | 5            | pockets of clay and brick fragments  |          |        | FID = 9    | ppm         |               |     |
|            |          |          |        | 13           | [FILL] (wet)                         |          |        |            |             |               | 1   |
| 8          |          |          |        | 14           |                                      |          |        |            |             |               |     |
|            |          |          |        | 8            | Reddish brown gravelly c-f SAND, si  | ome s    | silt,  |            |             |               |     |
| 9          | S-5      | SS       | 1.1    | 9            | trace clay                           |          |        | FID = 5    | ppm         |               |     |
|            |          |          |        | 19           | Dark gray gravelly c-f SAND, trace s | silt     |        |            |             |               |     |
| 10         |          |          |        | 14           | [FILL] (wet)                         |          | 1      | Auger to   | 10 feet     |               |     |
|            |          |          |        | 11           | Brown gravelly c-f SAND              |          |        | FID = 5    | ppm         |               |     |
| 11         | S-6      | SS       | 0.7    | 7            | [FILL] (wet)                         |          |        | Sheen o    | n water     |               |     |
|            |          |          |        | 9            |                                      |          |        |            |             |               |     |
| 12         |          |          |        | 17           |                                      |          |        | FID = 20   | )0 ppm      | ÷.            |     |
|            |          |          |        | 6            |                                      |          |        |            |             |               |     |
| 13         | S-7      | SS       | NR     | 3            |                                      |          | ,      | Sheen o    | n water     |               |     |
|            |          |          |        | 2            |                                      |          |        | Brick in t | ip of spoo  | ก             |     |
| 14         |          |          |        | +            |                                      |          | ,      | Auger to   | 14 feet     |               |     |
|            |          |          |        | 14           | Brown silty CLAY                     |          |        | e          |             |               |     |
| 15         | S-8      | ss       | 1.0    | 9            | [CL] (moist)                         |          | li     | FID = 30   | ppm         |               |     |
|            |          |          |        | 2            | [01]                                 |          |        | Sheen o    |             |               |     |
| 16         |          |          |        | 2            |                                      |          |        |            |             |               | Ì   |
|            |          |          |        |              | Brown silty CLAY                     |          |        | FID = 50   | hnm         |               |     |
| 17         | S-9      | SS       | 2.0    | - 9          | [CL] (moist)                         |          | 1      | Sheen o    |             |               |     |
|            | 3-9      | 33       | 2.0    | L            |                                      | CNA      |        | FID = 90   |             |               |     |
|            |          |          |        |              | -                                    | SM]      |        |            |             |               |     |
| 18         | -+       |          |        |              | Brownish gray silty c-f SAND, some   | ciay     |        | Auger to   |             | 1 1 1 î 1 -   |     |
|            |          |          |        |              | Boring completed at 18 feet          |          |        |            | 16 feet wi  | th bentonite  | r   |
| 19         |          |          |        |              |                                      |          |        | slurry     |             |               |     |
|            |          | .        | -      | -            |                                      |          |        | •          | ezometer a  | at 16 feet    |     |
| 20         |          | ·        |        |              |                                      |          |        | End 11:2   | 20          |               | ŀ   |
|            |          |          |        |              |                                      |          |        | <u></u> .  |             |               |     |
| Standard   | Pene     | etration | Test   | N-Value      | LANGAN Engineerin                    | g and    | Envi   | ronmen     | tal Servic  | es. Inc.      |     |

Standard Penetration Test N-Value

LANGAN Engineering and Environmental Services, Inc. TIERRA-B-018312

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|                  |                    |            |          |           |                                                             |                                  | OF BORIN    |                       | P-44   |                                                                                                                 |                            | Sheet 1               |                  |  |  |
|------------------|--------------------|------------|----------|-----------|-------------------------------------------------------------|----------------------------------|-------------|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------|------------------|--|--|
|                  | Project N          |            |          |           |                                                             | G Former Fro                     |             | as Works S            | Site   | Projec                                                                                                          |                            | 1406602               |                  |  |  |
|                  | Boring L           |            |          |           |                                                             | rk, New Jerse                    |             |                       |        |                                                                                                                 | Elevation and Datum 9.63   |                       |                  |  |  |
|                  | Drilling (         |            |          |           |                                                             | Environmenta                     | al Services | , Inc.                |        | Date S                                                                                                          | Date Started Date Finished |                       |                  |  |  |
|                  | Drilling E         |            |          |           | Mobile Drill B-80                                           |                                  |             |                       |        |                                                                                                                 | 9/10/97 9/17/97            |                       |                  |  |  |
|                  | Size and           | Тур        | e 01 1   | 311       | 4-1/4" & 6-5/8" I.D. Hollow Stem Auger, 5-7/8" Roller Bit C |                                  |             |                       |        |                                                                                                                 | letion De<br>26 ft         | eptn                  | Rock Depth       |  |  |
|                  | Casing<br>Casing H | . <u>.</u> |          | Weigh     | +                                                           |                                  | Drop        |                       | Water  |                                                                                                                 | ~ 6 ft                     | 26 ft                 |                  |  |  |
|                  |                    | am         | nei      | meigi     |                                                             | D. Split Spoon                   | Пор         |                       |        | Driller                                                                                                         |                            | K. Mike M             | Aillican         |  |  |
| •                | Sampler<br>Sampler |            |          | Voight    |                                                             | 140 lb                           | Drop        | 30"                   |        | Inspec                                                                                                          |                            |                       | elman/Ed Zofchak |  |  |
|                  | Sampler            | Tan        | T        | l         | 1                                                           | 14010                            |             |                       |        | mspec                                                                                                           |                            |                       |                  |  |  |
|                  | Depth              | s          | Туре     | Recov.    | SPT                                                         |                                  | DESCF       | RIPTION               |        |                                                                                                                 |                            | REMAR                 | <s< td=""></s<>  |  |  |
| •                | (ft)               | · ·        |          | (ft)      | bl/6"                                                       |                                  |             |                       |        |                                                                                                                 |                            |                       | ·····            |  |  |
| ſ                | . <del>-</del>     |            |          |           |                                                             | CONCRETE                         |             |                       |        |                                                                                                                 | Start 10:                  |                       | -                |  |  |
|                  | 1                  |            | 1        |           | 1                                                           |                                  |             |                       |        |                                                                                                                 | Jacknam<br>Auger to        |                       | gh concrete      |  |  |
|                  | 2                  | 1          |          |           |                                                             | ]                                |             |                       |        |                                                                                                                 | -                          | inding at 1           | foot             |  |  |
|                  | <u> </u>           | ł          |          |           |                                                             |                                  |             |                       |        |                                                                                                                 | , loge, g.                 |                       |                  |  |  |
|                  | 3                  |            |          |           |                                                             | •                                |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  |                    | i          | 1        | l         |                                                             |                                  | See Bor     | ring P-4              |        |                                                                                                                 |                            |                       |                  |  |  |
| :•*              | 4                  |            |          |           |                                                             |                                  | Log of      | Boring                |        |                                                                                                                 |                            |                       |                  |  |  |
| <u>.</u>         |                    |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  | 5                  |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  | ~                  |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  | 6                  |            |          |           | 1                                                           | ĺ                                |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  | 7                  |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  | /                  |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
| • •              | 8                  |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
| ·                |                    |            |          |           |                                                             |                                  |             |                       |        | [                                                                                                               |                            |                       |                  |  |  |
|                  | 9                  |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  |                    |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
|                  | 10                 |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
| .                |                    | ~ .        |          |           | 18                                                          | Brown m-f SA                     | ND, some    | f gravel, tra         | ace cl |                                                                                                                 | rin                        |                       |                  |  |  |
| ·                | 11                 | S-1        | SS       | 1.0       |                                                             | and silt                         |             | (                     |        |                                                                                                                 | FID = 80                   | ppm                   |                  |  |  |
| -1               | 12                 |            |          |           | 5<br>17                                                     | [SP]                             |             | (wet)                 |        |                                                                                                                 |                            |                       |                  |  |  |
| $\left  \right $ | - 12               |            |          |           | 7                                                           | Brown m-f SA                     | ND and G    | RAVEL tra             | ce cl: |                                                                                                                 |                            |                       |                  |  |  |
|                  | 13                 | S-2        | SS       | 0.8 ·     | 5                                                           | [SP-G                            |             | (wet)                 |        | -                                                                                                               | FID = 15                   | ppm                   |                  |  |  |
| ł                |                    |            |          |           |                                                             | Black c-f GRA                    |             |                       |        | [                                                                                                               |                            | r #                   |                  |  |  |
|                  | 14                 |            |          |           | 2                                                           | Dark gray silty                  |             |                       | (wet)  | [,                                                                                                              | Auger to                   | 14 feet               |                  |  |  |
| _[               |                    |            |          |           | 3                                                           | Brown silty Cl                   |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
| L                | 15                 | S-3        | SS       | 0.5       | 2                                                           | [CL]                             |             | (moist)               |        |                                                                                                                 | FID = 15                   | ppm                   |                  |  |  |
|                  |                    |            |          |           | 3                                                           |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |
| :                | 16                 |            |          |           | 2                                                           |                                  |             | - 1                   |        |                                                                                                                 | Auger to 1                 |                       |                  |  |  |
|                  |                    |            |          |           | 1                                                           | Dark brownish                    |             |                       |        |                                                                                                                 | End 16:00                  |                       | FID = 10-20 ppm  |  |  |
| -                | 17                 | S-4        | SS       | 1.9       | L .                                                         | trace m-f sand                   |             |                       |        |                                                                                                                 |                            |                       | ng through       |  |  |
|                  | 18                 |            |          |           |                                                             | Mottled Dark g<br>c-f SAND, trac |             | _                     |        |                                                                                                                 |                            | augers to<br>-300 ppm | ID IEEL          |  |  |
| : F              |                    |            |          | ~         |                                                             | Gray - Red bro                   |             |                       |        | the second second second second second second second second second second second second second second second se |                            | out annula            | r space Odor     |  |  |
| <b>1</b>         | 19                 | S-5        | ss       | 1.0       |                                                             | trace m-f grave                  |             | , nacc <sup>2</sup> 3 | 0.110  |                                                                                                                 | -                          | asing and             | ·····            |  |  |
| ×                | ) `                | - <b>-</b> |          |           | 42                                                          | [SM-SF                           |             | (dry)                 |        |                                                                                                                 |                            | -                     | t/bentonite      |  |  |
| T                | 20                 |            |          | ľ         | 57                                                          | L                                | -           | <b>∖</b> - J7         |        | 1                                                                                                               | •                          | oving auge            |                  |  |  |
|                  |                    |            | <u> </u> |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            | -600 ppm              | Stained soil     |  |  |
| •                | Standard I         | Pene       | etration | Test N    | I-Value                                                     |                                  |             | Engineerin            |        |                                                                                                                 |                            |                       |                  |  |  |
| Ľ                |                    |            |          | <u></u> . |                                                             |                                  | Rive        | er Drive Cer          | nter 1 | , Elmv                                                                                                          | vood Parl                  | k, NJ 07              | 407              |  |  |
| 7                |                    |            |          |           |                                                             |                                  |             |                       |        |                                                                                                                 |                            |                       |                  |  |  |

|                         |     | <u>.</u> |          |                | LOG OF BORING NO: P-4,                        | -      | Sheet 2              |            | 2            |
|-------------------------|-----|----------|----------|----------------|-----------------------------------------------|--------|----------------------|------------|--------------|
| Project N               |     |          |          |                |                                               | Proje  |                      |            |              |
| Boring Lo<br>Drilling C |     |          |          |                | k, New Jersey<br>Environmental Services, Inc. | Date   | Started              | Date Fin   |              |
| Drinning C              |     |          | <u> </u> |                | Environmental Services, Inc.                  | l      | 9/10/97              | 9/17       | / <u>/97</u> |
| Depth -                 | ۰s  | Туре     | Recov.   | SPT            | DESCRIPTION                                   |        | REMAR                | KS         | Ì            |
| (ft)                    |     |          | (ft)     | <b>БІ/6</b> ** |                                               |        |                      |            |              |
|                         |     |          |          | 33             | Red brown m-f SAND, trace-some silt, t        | race   | Drill with 5-7/8" Ro | ller Bit   |              |
| 21                      | S-6 | SS       | 1.1      | 20             | c sand and m-f gravel [SM-SP]                 |        | FID = 100 ppm        |            |              |
|                         |     |          |          | 40             | Red brown m-f SAND, some silty clay, t        | race   | Naphthalene Odor     |            |              |
| 22                      |     |          |          | 12             | c sand and f gravel [SC] (moist)              |        | 1                    |            |              |
| _                       |     |          |          | 10             | Red brown silty c-f SAND, trace-some c        | lay,   | FID = 20-30 ppm      |            |              |
| 23                      | S-7 | SS       | 1.0      | 28             | trace m-f gravel                              |        | Naphthalene Odor     |            |              |
|                         |     |          |          | 25             | [SM] (moist-wet)                              |        | Black free product   |            |              |
| 24                      |     |          |          | 28             |                                               |        | Oily surface sheen   |            |              |
|                         |     | ~ ~      |          | 24             | Red brown c-f SAND, some silt, trace-se       | ome    | Drill to 24 feet     |            |              |
| 25                      | S-8 | SS       | 1.3      |                | clay, trace m-f gravel                        |        | Naphthalene Odor     |            |              |
|                         |     |          |          | 26             | [SM] (moist-wet)                              |        | Surface sheen        |            | _            |
| 26                      |     |          |          | 100/5"         |                                               |        | FID = 30-50 ppm      |            | Refusal      |
| 27                      | S-9 | ss       | NR       | 100/0"         |                                               |        | Heavy grinding at 2  | 26 feet    | Refusal      |
|                         | 2-9 | 55       | INH      |                |                                               |        | Drill to 26 feet     |            |              |
| 28                      |     |          | Ì        |                |                                               |        | Install piezometer a | ai 26 ieel |              |
|                         | -+  |          |          |                | Boring completed at 26 feet                   |        | End 15:00            |            |              |
| 29                      |     |          |          |                | Bonnig completed at 20 leet                   |        | LIU #3.00            |            |              |
|                         |     |          |          | ł              |                                               |        |                      |            |              |
| 30                      |     |          |          |                |                                               |        |                      |            |              |
|                         |     |          | ł        |                |                                               |        |                      |            | 6            |
| 31                      | 1   |          |          |                |                                               |        |                      |            |              |
|                         |     |          |          |                |                                               |        |                      |            |              |
| 32                      |     |          |          |                |                                               |        |                      |            |              |
| _                       |     |          |          | 1              |                                               |        |                      |            |              |
| 33                      |     |          |          | 1              | -                                             |        |                      |            |              |
| _                       |     |          |          | 1              |                                               |        |                      |            |              |
| 34                      |     |          |          |                |                                               |        |                      |            |              |
|                         |     |          |          |                |                                               |        |                      | • •        |              |
| 35                      |     |          |          |                |                                               |        |                      |            |              |
| 0.0-                    |     |          |          |                |                                               |        |                      |            |              |
| 36                      |     |          |          |                |                                               |        |                      |            |              |
| 27-                     |     |          |          |                |                                               |        |                      |            |              |
| 37                      |     |          |          | 1              |                                               | ł      |                      |            |              |
| 38                      |     |          |          |                |                                               |        |                      |            |              |
|                         | I   | ĺ        |          |                |                                               | 1      |                      |            | 1            |
| 39                      |     |          |          |                |                                               |        |                      |            |              |
|                         |     |          |          |                |                                               |        |                      |            | 1            |
| 40                      |     |          |          |                |                                               |        |                      |            |              |
|                         |     |          | .        |                |                                               | 1      |                      |            |              |
| <b>→</b>                | Ì   |          | ·        |                |                                               |        |                      |            |              |
| 41                      |     |          |          |                |                                               |        |                      |            |              |
| 42                      |     |          |          |                |                                               |        |                      |            | ľ            |
| ~~~                     | .   | .        |          | Ĩ              |                                               |        |                      |            | 1            |
| tandard P               |     |          | Toot N   | Valua          |                                               |        |                      | - I        |              |
|                         |     | anon     | 162114   | - мание        | LANGAN Engineering and                        | 3 ENVI | onmental Service     | s. Inc.    |              |

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| Project N    | ame              |             |          | PSFA          | LOG OF BORING NO: TWP<br>G Former Front Street Gas Works Site | Projec                    |                          | of                |  |  |
|--------------|------------------|-------------|----------|---------------|---------------------------------------------------------------|---------------------------|--------------------------|-------------------|--|--|
| Boring Lo    | _                |             |          |               |                                                               | Elevation and Datum 6.84  |                          |                   |  |  |
| Drilling C   |                  |             |          |               |                                                               | Date Started Date Finishe |                          |                   |  |  |
| Drilling E   |                  |             |          |               | Drill B-80                                                    | 9/22/97 9/22/             |                          |                   |  |  |
| Size and     |                  |             |          |               |                                                               | Comp                      | letion Depth             | Rock Depth        |  |  |
| Casing       | • • • •          |             |          | ····          |                                                               | p                         | 8 ft                     | Not Encounter     |  |  |
| Casing H     | amn              | her         | Weigh    |               | Drop 1                                                        | Water                     | Level ~ 5.5 ft           |                   |  |  |
| Sampler      |                  | 101         | mengin   |               |                                                               | Driller                   |                          | Millican          |  |  |
|              | 11               |             | Noteba   | 3 0.0         |                                                               | Inspec                    |                          |                   |  |  |
| Sampler      | nam              | iner v<br>I | veignt   | 1             | 300 lb Drop 30"                                               | inspec                    |                          |                   |  |  |
| Depth        | S ·              | Туре        | Recov.   | SPT           | DESCRIPTION                                                   |                           | REMAR                    | <s< td=""></s<>   |  |  |
| (ft)         |                  |             | (ft)     | <i>ыле.</i> . |                                                               |                           | 0                        |                   |  |  |
| _            |                  |             |          | 5             | VEGETATION and GRAVEL                                         |                           | Start 11:10              |                   |  |  |
| 1            | S-1              | SS          | 0.7      | 5             | Dark brown silty f SAND, occasional brick                     | к,                        | FID = 0.1 ppm            |                   |  |  |
|              |                  |             |          | 5             | glass, coal, and concrete fragments and                       |                           |                          |                   |  |  |
| 2            |                  |             | ļ        | 7             | rebar [FILL] (dry)                                            |                           |                          |                   |  |  |
|              |                  |             |          | 3             | Dark brown silty f SAND, trace f gravel,                      |                           |                          |                   |  |  |
| 3            | S-2              | SS          | 0.2      | 4             | occasional brick, glass, coal, and concret                    |                           | FID = 0 ppm              | 2002              |  |  |
|              |                  |             |          | 2             | fragments                                                     |                           | Concrete in tip of s     | рооп              |  |  |
| 4            |                  |             | <b>!</b> | 2             | [FILL] (dry-moist)                                            |                           |                          |                   |  |  |
|              | <u></u>          |             |          | 2             | Dark brown silty f SAND, trace f gravel,                      |                           |                          |                   |  |  |
| 5            | S-3              | SS          | 1.0      | 2             |                                                               |                           | FID = 0 ppm              |                   |  |  |
| <u>_</u> _   |                  |             |          | 2             | Brown c-f SAND, trace silt and clay and f                     |                           | Details in the of anothe | -                 |  |  |
| 6            |                  |             |          | 4             |                                                               | 1                         | Brick in tip of spoor    | l .               |  |  |
|              |                  |             |          | 2             | Reddish brown - Dark brown c-f SAND, tr                       |                           |                          |                   |  |  |
| 7            | S-4              | SS          | 0.7      |               | silt and clay and f gravel                                    |                           | FID = 0 ppm              | to hole closice   |  |  |
| ا            |                  |             |          | 4             | [FILL] (wet)                                                  |                           | Auger to 8 feet due      |                   |  |  |
| 8            |                  |             |          | 7             |                                                               |                           | Install temporary w      | en point at o let |  |  |
| ~-           |                  |             |          |               | Boring completed at 8 feet                                    |                           | End 11:25                |                   |  |  |
| 9            |                  |             |          |               |                                                               | 1                         |                          |                   |  |  |
|              |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| 10           |                  |             |          |               | -                                                             |                           |                          |                   |  |  |
| <del> </del> |                  |             |          |               |                                                               |                           |                          |                   |  |  |
|              |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| 12           |                  |             |          |               |                                                               |                           |                          | ·•                |  |  |
|              |                  |             | i        |               |                                                               |                           |                          |                   |  |  |
| 13           |                  |             |          |               |                                                               |                           |                          |                   |  |  |
|              |                  |             | [        |               |                                                               | 1                         |                          |                   |  |  |
| -,           |                  | [           |          |               |                                                               |                           |                          |                   |  |  |
| 14           |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| 15           | Í                | ļ           |          |               |                                                               |                           |                          |                   |  |  |
|              |                  | ·           |          |               |                                                               | 1                         |                          |                   |  |  |
| 10-          |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| 16           |                  |             |          | -             |                                                               |                           |                          |                   |  |  |
|              |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| 17           |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| <b>_</b>     | ļ                |             | ~ .      |               |                                                               |                           |                          |                   |  |  |
| 18           |                  | ļ           |          |               |                                                               | . I                       |                          |                   |  |  |
|              |                  |             |          |               |                                                               | ļ                         |                          |                   |  |  |
| 19           |                  |             |          |               |                                                               | 1                         |                          |                   |  |  |
|              |                  |             |          |               |                                                               |                           |                          |                   |  |  |
| 20           |                  | ·           |          |               |                                                               |                           |                          |                   |  |  |
|              | 1                | 1           | 1        |               |                                                               | F                         |                          |                   |  |  |
| Standard F   | <sup>2</sup> ene | tration     | Test N   | I-Value       | LANGAN Engineering and<br>River Drive Center 1,               | d Envil                   | ronmental Service        | s, Inc.           |  |  |

| Project Name         PSEAG Former Front Street Gas Works Stee         Project No.         1406502           Bring Location         Newark, New Jersey         Elevation and Datum         7.48           Drilling Company         CTAE Environmental Services, Inc.         Date Started         9/2297           Size and Type of Bit         4.1/4 I.D. Holow Stem Auger         Completion Depth         Rock Depth           Casing Hammer         Weight          8 t         Not Encountered           Sampler         3'O.D. Split Spoon         Driller         K. Mike Abepth         Not Encountered           Sampler         3'O.D. Split Spoon         Driller         K. Mike Abepth         Not Encountered           Sampler         3'O.D. Split Spoon         Driller         K. Mike Abepth         Not Encountered           Sampler         3'O.D. Split Spoon         Driller         K. Mike Abepth         Not Encountered           Sampler         1'S         VEGETATION         BEMARKS         Elana Seelman           ************************************                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |      |          |        |          |                   | OF BORING       | the second second second second second second second second second second second second second second second se |          |              | neet 1 c | · · · · · · · · · · · · · · · · · · · |
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| Diffing Company     CT&E Environmental Services, Inc.     Date Started     Date Finished       Orilling Equipment     Mobile Diff B-80     Sorgers     Sorgers     Sorgers       Size and Type of Bit     1.14* LD. Hollow Stem Auger     Completion Depth     Rock Depth       Sating Hammer     Weight     Image Drop of Sorgers     Not Encountered       Sampler     3* O.D. Split Spoon     Driller     K. Mike Millican       Sampler Hammer Weight     300 ib     Drop 30*     Inspector     Elana Seelman       Cm     (n)     Mote Countered     Start Level - 5.5 ft       Sampler Hammer Weight     300 ib     Drop 30*     Inspector     Elana Seelman       Cm     (n)     Mote Countered     Start Holes     Start Holes       (n)     (n)     Mote Countered     Start Holes     Start Holes       (n)     (n)     Mote Countered     Start Holes     Start Holes       2     1     15     VEGETATION     Start Holes     Start Holes       2     1     15     VEGETATION     Start Holes     Auger to 2 feet       2     2     Start Allow Forward Holes     Start Holes     Auger to 2 feet       3     S-2     S     0.7     3     Fill (moist)       4     2     Brown - Black c-I S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |      |          |        |          |                   |                 | Works Site                                                                                                      |          |              |          |                                       |
| Drilling Equipment         Mobile Drill 8-80         9/22/97         9/22/97         9/22/97         9/22/97         Rock Depth<br>Rock Depth         Rock Depth<br>Not Encountered         Prote Field         Not Encountered           Casing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              | um       |                                       |
| Size and Type of Bit       4:1/4" LD. Holiow Stem Auger       Completion Depth 8t       Rock Depth Not Encountered 2asing Hammer Weight         Casing Hammer Weight       3"O.D. Split Spoon       Driller       K. Mike Millican         Sampler Hammer Weight       300 lb       Drop       30" Inspector       Elana Seelman         Depth (m)       8       Type Recox SPT       DESCRIPTION       REMARKS         (m)       15       Start 10:30       Start 10:30       Start 10:30         1       S-1       SS       1.1       S CONCRETE fragments [FILL] (dry-moist) [FID - 0.1-20 ppm]         2       37       3 gravel, occasional coal and trick fragments       Auger to 2 feet         3       S-2       SS       0.7       3 gravel, occasional coal fragments         4       2       Brown - Black of SAND, stace silt and clay       FID = 0 ppm         4       2       Brown - Coracional coal fragments       FID = 0 ppm         4       2       Brown - Gravelly SAND, stace silt and clay       FID = 0 ppm         7       S-4       SS       0.6       8         7       S-4       SS       0.6       4         3       Brown or of gravely costal coal fragments       FID = 0 ppm         10       3       Brown o                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |      |          |        |          |                   | al Services, Ir | 1C.                                                                                                             | Date S   |              | _        |                                       |
| Casing         0         Not Encountered           Casing         3° O.D. Split Spoon         Driller         K. Mike Millican           Sampler         3° O.D. Split Spoon         Driller         K. Mike Millican           Sampler Hammer Weight         300 lb         Drop         30° Inspector         Elana Seelman           Depth         S         Type         Recov.         SFT         DESCRIPTION         REMARKS           (1)         Start 10.30         FT         DESCRIPTION         REMARKS         Start 10.30           1         S.1         15         VEGETATION         Start 10.30         FILL] (dry-moist)         FID = 0.1-20 ppm           2         Uight thorw - Light gray cf SAND, trace silt         Auger to 2 feet         Auger to 2 feet           3         S-2         SS 0.7         S         Brown - Black cf SAND, some silt, trace c-f           3         S-2         SS 0.9         2         gravel, occasional coal fragments           4         2         Brown - Gravelly SAND, trace silt and clay         FID = 0 ppm           4         2         Brown c-f gravelly SAND, trace silt and clay         FID = 0 ppm           7         S-4         SS 0.6         8         Broring completed at 8 feet         End 10:45     <                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          |        |          |                   |                 |                                                                                                                 | <u> </u> |              |          |                                       |
| Casing Hammer     Weight     Drop     Water Level     - 5.5 ft       Sampler     3'O.D. Split Spoon     Driller     K. Mike Millican       Sampler     300 lb     [Drop     30'     Inspector     Elana Seelman       Depth     s     Type Record     SFT     DESCRIPTION     REMARKS       1     S-1     SS     1.1     15     VEGETATION     Start 10:30       2     S1     15     VEGETATION     Start 10:30       2     S2     SS     1.7     15     CONCRETE tragments     [FILL] (dry-molst)       2     S2     SS     0.7     S     Brown - Elack of SAND, state sitt       4     2     Brown - Black of SAND, some sitt, trace of gravel, occasional coal tragments     FID = 0 ppm       4     2     Brown - G gravel, occasional coal tragments     FID = 0 ppm       6     3     Gravel, occasional coal tragments     FID = 0 ppm       7     S-4     SS     0.6     4     [FILL]       7     S-4     SS     0.6     4     [FILL]       7     S-4     SS     0.6     4     Improve of feet due to hole closing Install temporary well point at 8 feet       9     10     11     12     13     Boring completed at 8 feet     End 10:45 <td>Size and</td> <td>Туре</td> <td>e of E</td> <td>Bit</td> <td>4-1/4"</td> <td>I.D. Hollow S</td> <td>tem Auger</td> <td>-</td> <td>Comp</td> <td>•</td> <td>)</td> <td> ,</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Size and        | Туре | e of E   | Bit    | 4-1/4"   | I.D. Hollow S     | tem Auger       | -                                                                                                               | Comp     | •            | )        | ,                                     |
| Sampler     3" O.D. Split Spoon     Driller     K. Mike Millican       Bampler Hammer Weight     300 lb     Drop     30" Inspector     Elana Seetman       Bampler Hammer Weight     300 lb     Drop     30" Inspector     Elana Seetman       m)     to     been     been     REMARKS     REMARKS       m)     to     been     been     Start 10:30     Start 10:30       1     S-1     SS     1.1     15     CONCRETE fragments     FILL] (dry-moist)       2     and c1 gravel, occ. coal and brick fragments     Auger to 2 feet       3     S-2     SS     0.7     gravel, occasional coal fragments     FID = 0 ppm       4     2     Brown - Black c1 SAND, some silt, trace c-f     FID = 0 ppm       4     2     gravel, occasional coal fragments     FID = 0 ppm       4     2     gravel, occasional coal fragments     FID = 0 ppm       4     2     Brown - frazvelly SAND, trace silt and clay     FID = 0 ppm       7     S-4     SS     0.6     8     Brown c-f gravelly SAND, trace silt and clay       7     S-4     SS     0.6     8     Broing completed at 8 feet     End 10:45       9     10     15     S     S     S     Barting completed at 8 feet     End 10:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Casing          |      |          |        |          |                   |                 |                                                                                                                 |          |              |          | Not Encountered                       |
| Sampler Hammer Weight         300 lb         Drop         30"         Inspector         Elana Seelman           Depth         s         Type         Reco.         SPT         DESCRIPTION         REMARKS           1         S.1         SS         1.1         15         VEGETATION         Start 10:30           2         1         S.1         SS         1.1         15         CONCRETE tragments         [FILL] (dry-moist)         FID = 0.1-20 ppm           2         1         3         and cf gravel, occ all and bick tragments         Auger to 2 feet         Brown - Black c+f SAND, some silt, trace c-f         FID = 0 ppm           4         2         2         Brown - Black c+f SAND, some silt, trace c-f         FID = 0 ppm           5         S.3         SS         0.3         2         gravel, occasional coal fragments         FID = 0 ppm           6         3         2         Brown - I gravelly SAND, trace silt and clay         FID = 0 ppm           6         3         3         [FILL]         (moistwet)         FID = 0 ppm           7         S-4         SS         0.6         8         Broring completed at 8 feet         FID = 0 ppm           9         10         10         14         14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Casing H        | amn  | ier      | Weight | t        |                   | Drop            |                                                                                                                 | Water    | Level ~      | 5.5 ft   |                                       |
| Sampler Hammer Weight         300 lb         Drop         30"         Inspector         Elana Seelman           Depth<br>(tt)         S         Type         Recox.         SPT         DESCRIPTION         REMARKS           1         S-1         SS         1.1         15         VEGETATION         Start 10:30         FID = 0.1-20 ppm           2         1         15         VEGETATION         Start 10:30         FID = 0.1-20 ppm           2         1         15         VEGETATION         Light brown - Light gray of SAND, trace slit         Auger to 2 feel           3         S-2         SS         0.7         5         Brown - Black c-I SAND, some slit, trace c-f         FID = 0 ppm           5         S-3         SS         0.9         2         Brown - Black c-I SAND, some slit, trace c-f         FID = 0 ppm           6         2         Brown - Gravelly SAND, trace slit and clay         FID = 0 ppm         Auger to 8 feet due to hole closing install temporary well point at 8 feet         FID = 0 ppm           7         S-4         SS         0.6         8         Brown c-f gravelly SAND, trace slit and clay         FID = 0 ppm           9         3         1         1         1         1         1           10         4 <td>Sampler</td> <td>-</td> <td></td> <td></td> <td>3" O.E</td> <td>. Split Spoon</td> <td></td> <td></td> <td>Driller</td> <td>К.</td> <td>Mike N</td> <td>Aillican</td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Sampler         | -    |          |        | 3" O.E   | . Split Spoon     |                 |                                                                                                                 | Driller  | К.           | Mike N   | Aillican                              |
| Depth<br>(m)         S         Type         Recov.         SPT<br>(W)         DESCRIPTION         REMARKS           1         S-1         SS         1.1         15         VEGETATION<br>20         Start 10:30         FID = 0.1-20 ppm           2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 | Ham  | mer V    | Veight |          | 300 lb            | Drop            | 30"                                                                                                             | Inspe    | tor El       | ana Se   | elman                                 |
| 15         15         VEGETATION<br>CONCRETE fragments         Start 10:30           2         11         15         CONCRETE fragments         [FIL1] (dry-moist)           2         2         2         2         U Light brown - Light gray c-1 SAND, trace sit<br>and c-1 gravel, occ. coal and brick fragments         Auger to 2 feet           3         S-2         SS         0.7         3         gravel, occasional coal tragments<br>[FIL1]         (moist)           4         2         2         Brown - Black c-1 SAND, some silt, trace c-1<br>gravel, occasional coal tragments<br>[FIL1]         (moist)           4         2         2         Brown - Black c-1 SAND, some silt, trace c-1<br>gravel, occasional coal tragments         FID = 0 ppm           6         3         Brown c-1 gravely SAND, trace silt and clay<br>[FIL1]         (moist)-weil           7         S-4         SS         0.6         4           2         3         Brown c-1 gravely SAND, trace silt and clay<br>[FIL1]         (wei)           8         3         Brown c-1 gravely SAND, trace silt and clay<br>[FIL1]         FID = 0 ppm           10         3         Broing completed at 8 feet         End 10:45           9         3         10         11         11           11         12         13         14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |      |          |        | SPT      |                   |                 | TION                                                                                                            |          | R            | EMARH    | (S                                    |
| 1         S-1         SS         1.1         15         VEGETATION         Start 10:30           2         3         S-1         SS         1.1         15         CONCRETE fragments         [FILL] (dry-moist)           2         3         S-2         SS         0.7         3         gravel, occ. coal and brick fragments         Auger to 2 feet           3         S-2         SS         0.7         3         gravel, occasional coal tragments         FID = 0 ppm           4         2         Brown - Black c-f SAND, some silt, trace c-f         gravel, occasional coal tragments         FID = 0 ppm           4         2         Brown - Gravely SAND, trace silt and clay         [FILL]         (moist)           6         3         Brown c-f gravely SAND, trace silt and clay         [FIL]         (wet)           7         S-4         SS         0.6         4         [FIL]         (wet)           8         3         Brown c-f gravely SAND, trace silt and clay         [FID = 0 ppm         Auger to 8 feet due to hole closing           9         3         If IL]         (wet)         Start temporary well point at 8 feet           9         3         Brown c-f gravely at 8 feet         End 10:45         End 10:45           11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | (ft)            |      |          | (ft)   | ьие"     |                   |                 |                                                                                                                 |          |              |          |                                       |
| 1       S-1       SS       1.1       15       CONCRETE tragments       [FIL1] (dry-moist)         2       .20       Light brown - Light graver (SAND, trace sit)       Auger to 2 feet         3       S-2       SS       0.7       3       Brown - Black c-t SAND, some silt, trace c-f         3       S-2       SS       0.7       3       [FIL1] (moist)         4       .2       Brown - Black c-t SAND, some silt, trace c-f       gravel, occasional coal tragments         5       S-3       SS       0.9       2       gravel, occasional coal tragments         6       .3       [FILL]       (moist)       FID = 0 ppm         6       .3       [FILL]       (moist-wet)       FID = 0 ppm         7       S-4       SS       0.6       4       [FILL]       (wet)         8       .3       [FILL]       (wet)       Auger to 8 feet due to hole closing Install temporary well point at 8 feet         9       .10       .2       Boring completed at 8 feet       End 10:45         11       .4       .4       .4       .4       .4       .4         12       .4       .4       .4       .4       .4       .4         14       .4       .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |      |          |        | 15       | VEGETATIC         | DN              |                                                                                                                 |          | Start 10:30  |          | · · · · · · · · · · · · · · · · · · · |
| 2     20     Light brown - Light gray c-f SAND, trace slit<br>and c-f gravel, occ, coal and brick fragments<br>5     Auger to 2 feet       3     S-2     SS     0.7     3     gravel, occasional coal fragments<br>3     FID = 0 ppm       4     2     Brown - Black c-f SAND, some silt, trace c-f<br>gravel, occasional coal fragments<br>6     FID = 0 ppm       5     S-3     SS     0.9     2     Brown - Black c-f SAND, some silt, trace c-f<br>gravel, occasional coal fragments<br>[FILL]     (moist wet)       6     3     Brown - Cf gravely SAND, trace slit and clay<br>[FILL]     (wet)     FID = 0 ppm       7     S-4     SS     0.6     8     Brown c-f gravely SAND, trace slit and clay<br>[FILL]     FID = 0 ppm       9     3     Boring completed at 8 feet     End 10:45     FID = 0 npm       11     12     8     Boring completed at 8 feet     End 10:45       9     10     1     1     1       11     12     1     1     1       12     1     1     1     1       13     1     1     1     1       14     1     1     1     1       13     1     1     1     1       14     1     1     1     1       17     1     1     1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1               | S-1  | SS       | 1.1    |          | CONCRETE          | fragments       | [FILL] (dry                                                                                                     | -moist)  | FID = 0.1-20 | ) ppm    |                                       |
| 2         37         and c-f gravel, occ. coal and brick fragments<br>Brown - Black c-f SAND, some silt, trace c-f<br>gravel, occasional coal fragments<br>[FILL]         Auger to 2 feet           3         S-2         SS         0.7         3         gravel, occasional coal fragments<br>[FILL]         (moist)           4         2         Brown - Black c-f SAND, some silt, trace c-f<br>gravel, occasional coal fragments         FID = 0 ppm           5         S-3         SS         0.9         2         Brown - Figavelly SAND, trace silt and clay<br>[FILL]         (moist-wet)           6         3         [FILL]         (moist-wet)         FID = 0 ppm           7         S-4         SS         0.6         4         [FILL]         (wet)           7         S-4         SS         0.6         4         [FILL]         (wet)           8         3         Broing completed at 8 feet         FID = 0 ppm         Auger to 8 feet due to hole closing install temporary well point at 8 feet           9         10         11         12         13         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14         14                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 | · ·  |          |        | 1        |                   | -               |                                                                                                                 |          |              | -        |                                       |
| 3         S.2         SS         0.7         5<br>3<br>3<br>3         Brown - Black c-f SAND, some silt, trace c-f<br>gravel, occasional coal fragments<br>(FILL) (moist)         FID = 0 ppm           4         2         Brown - Black c-f SAND, some silt, trace c-f<br>gravel, occasional coal fragments<br>(FILL) (moist-wet)         FID = 0 ppm           5         S.3         SS         0.9         2         Brown c-f gravelly SAND, trace silt and clay<br>(rest)         FID = 0 ppm           7         S.4         SS         0.6         4         2         FID = 0 ppm           7         S.4         SS         0.6         4         2         FILL]         (wet)           8         3         Brown c-f gravelly SAND, trace silt and clay<br>(rest)         FID = 0 ppm         FID = 0 ppm           9         3         Boring completed at 8 feet         FID = 10 ppm         FID = 0 ppm           11         12         3         Boring completed at 8 feet         FID = 10 ppm           11         12         13         14         15         16           16         17         18         19         19         10         10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ·               |      |          |        |          | -                 |                 |                                                                                                                 |          | Auger to 2 f | eet      |                                       |
| 3       S-2       SS       0.7       3       gravel, occasional coal fragments<br>(FILL)       (moist)         4       -       2       Brown - Black c-I SAND, some silt, trace c-f<br>gravel, occasional coal fragments<br>(FILL)       FID = 0 ppm         5       S-3       SS       0.9       2       Brown - Gravelly SAND, trace silt and clay<br>(FILL)       FID = 0 ppm         6       -       -       2       Brown c-f gravelly SAND, trace silt and clay<br>(FILL)       FID = 0 ppm         7       S-4       SS       0.6       4       Brown c-f gravelly SAND, trace silt and clay<br>(FILL)       FID = 0 ppm         8       -       3       Brown c-f gravelly SAND, trace silt and clay<br>(FILL)       wet)       FID = 0 ppm         9       -       3       Broing completed at 8 feet       FID = 10 ppm         10       -       -       Broing completed at 8 feet       End 10:45         11       -       -       -       -       -         13       -       -       -       -       -         14       -       -       -       -       -         13       -       -       -       -       -         14       -       -       -       -       -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| 4       2       Brown - Black c-f SAND, some silt, trace c-f       FID = 0 ppm         5       S.3       SS       0.9       2       gravel, occasional coal tragments         6       3       3       IFILI]       (moist)         7       S-4       SS       0.6       4         7       S-4       SS       0.6       4         8       3       Brown c-f gravelly SAND, trace silt and clay       FID = 0 ppm         8       3       Boring completed at 8 feet       FID = 0 ppm         9       3       Boring completed at 8 feet       End 10:45         9       10       -       -         11       -       -       -         12       -       -       -         13       -       -       -         14       -       -       -         15       -       -       -         16       -       -       -         17       -       -       -         18       -       -       -         19       -       -       -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2               | 6.2  | 22       | 07     |          |                   |                 |                                                                                                                 | •        | FID = 0 ppm  | ו        |                                       |
| 4         2         Brown - Black c-f SAND, some silt, trace c-f         FID = 0 ppm           5         S-3         SS         0.9         2         gravel, occasional coal fragments<br>IFILL]         (moist-wet)           6         3         Brown c-f gravely SAND, trace silt and clay<br>[FILL]         (wet)         FID = 0 ppm           7         S-4         SS         0.6         4         [FILL]         (wet)           8         Brown c-f gravely SAND, trace silt and clay<br>[FILL]         (wet)         FID = 0 ppm           8         3         Broing completed at 8 feet         FID = 0 npm           9         3         Boring completed at 8 feet         End 10:45           9         10         -         -         End 10:45           11         -         -         -         -           11         -         -         -         -           11         -         -         -         -         -           11         -         -         -         -         -           13         -         -         -         -         -           14         -         -         -         -         -           17         -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | 2-2  | 55       | 0.7    | 1        |                   |                 |                                                                                                                 |          |              |          |                                       |
| 5         S.3         SS         0.9         2<br>gravel, occasional coal fragments<br>[FILL]         FID = 0 ppm           6         3         Brown c-f gravely SAND, trace silt and clay<br>[FILL]         FID = 0 ppm           7         S-4         SS         0.6         4<br>2         [FILL]         (wet)           8         0.6         4<br>2         [FILL]         (wet)         Auger to 8 feet due to hole closing<br>install temporary well point at 8 feet           9         10         0         0         0.45         0.45         0.45           11         12         0         0         0.45         0.45         0.45           11         12         0         0         0.45         0.45         0.45           11         0         0         0.45         0.45         0.45         0.45           11         0         0         0.45         0.45         0.45         0.45           13         0         0         0         0.45         0.45         0.45           14         0         0         0         0.45         0.45         0.45           19         0         0         0         0.45         0.45         0.45         0.45 <td></td> <td></td> <td></td> <td></td> <td></td> <td>[ [<sup>[]</sup></td> <td>-</td> <td>(</td> <td></td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |      |          |        |          | [ [ <sup>[]</sup> | -               | (                                                                                                               |          |              |          |                                       |
| 5         S-3         SS         0.9         2         gravel, occasional coal fragments<br>[FILL]         FID = 0 ppm           6         -         -         3         Brown c-f gravelly SAND, trace silt and clay<br>[FILL]         FID = 0 ppm           7         S-4         SS         0.6         4         FILL]         (wet)           8         -         3         Brown c-f gravelly SAND, trace silt and clay<br>[FILL]         FID = 0 ppm           8         -         3         Brown c-f gravelly SAND, trace silt and clay<br>[FILL]         FID = 0 ppm           9         -         3         Brown c-f gravelly SAND, trace silt and clay<br>[FILL]         FID = 0 ppm           10         -         3         Broing completed at 8 feet         End 10:45           11         -         -         -         -           111         -         -         -         -           111         -         -         -         -           127         -         -         -         -           137         -         -         -         -           14         -         -         -         -           17         -         -         -         -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |      |          |        |          | Brown Dias        | K OF SAND       | some eilt trac                                                                                                  | e c-f    |              |          |                                       |
| 6       3       3       [FILL]       (moist-wet)         7       S-4       SS       0.6       4       2         8       3       Brown c-f gravelly SAND, trace silt and clay [FILL]       (wet)       FID = 0 ppm         8       3       Broing completed at 8 feet       FID = 0 ppm         9       3       Boring completed at 8 feet       End 10:45         10       -       -       -         11       -       -       -         12       -       -       -         13       -       -       -         14       -       -       -         18       -       -       -         19       -       -       -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |      | <u> </u> | 0.0    |          |                   |                 |                                                                                                                 |          | FID = 0 ppg  | ı        |                                       |
| 6         3         Brown c-f gravelly SAND, trace silt and clay         FID = 0 ppm           7         S-4         SS         0.6         4         [FILL]         (wet)         FID = 0 ppm           8         3         3         Boring completed at 8 feet         End 10:45         End 10:45           9         10         1         1         1         1         1           10         1         1         1         1         1         1           11         1         1         1         1         1         1         1           12         13         14         14         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1         1 <t< td=""><td>5</td><td>5-3</td><td>55</td><td>0.9</td><td></td><td><b>1</b></td><td></td><td>-</td><td></td><td>1 10 - 0 ppn</td><td></td><td></td></t<>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5               | 5-3  | 55       | 0.9    |          | <b>1</b>          |                 | -                                                                                                               |          | 1 10 - 0 ppn |          |                                       |
| 7         S-4         SS         0.6         4         FID = 0 ppm           8         3         3         Install temporary well point at 8 feet         Install temporary well point at 8 feet           9         10         6         6         6         6         6           10         10         10         10         10         10         10         10           11         12         13         14         14         14         14         14         14         15         16         17         18         19         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10         10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |      |          |        |          |                   | 5               | (moist-wet)                                                                                                     |          |              |          |                                       |
| 7       S-4       SS       0.6       4       [FILL]       (wet)       FID = 0 ppm         8       3       3       Install temporary well point at 8 feet       Install temporary well point at 8 feet         9       10       .       .       Boring completed at 8 feet       End 10:45         10       .       .       .       .       .       .         11       .       .       .       .       .       .         11       .       .       .       .       .       .         11       .       .       .       .       .       .       .         11       .       .       .       .       .       .       .       .         12       .       .       .       .       .       .       .       .       .         13       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       . <td>6</td> <td></td> <td></td> <td></td> <td><u> </u></td> <td></td> <td></td> <td></td> <td>_1</td> <td></td> <td></td> <td></td>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6               |      |          |        | <u> </u> |                   |                 |                                                                                                                 | _1       |              |          |                                       |
| 8     Auger to 8 feet due to hole closing<br>Install temporary well point at 8 feet       9     0       10     11       11     12       13     14       15     16       16     17       18     -       19     -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          |        | 1        |                   | -               |                                                                                                                 | ciay     |              |          | ,                                     |
| 8         3         Install temporary well point at 8 feet           9         .         Boring completed at 8 feet         End 10:45           10         .         .         .           11         .         .         .           12         .         .         .           13         .         .         .           14         .         .         .           15         .         .         .           16         .         .         .           18         .         .         .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 7               | S-4  | SS       | 0.6    |          | [ [FILL]          | ļ               | (wet)                                                                                                           |          |              |          | to balance in the                     |
| 9     Boring completed at 8 feet     End 10:45       10     11     12       13     14       15     16       17     18       19     .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          | -                                     |
| $ \begin{array}{c}             9 \\             10 \\             11 \\           $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8               |      |          |        | 3        | ļ                 |                 |                                                                                                                 |          |              | orary w  | eii point at 8 feet                   |
| $ \begin{array}{c} 10 \\ -11 \\ 12 \\ 12 \\ 13 \\ -14 \\ -15 \\ 16 \\ -17 \\ -18 \\ -19 \\ -19 \\ -19 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10 \\ -10$ | _               |      |          |        |          | Boring comp       | leted at 8 feel | t                                                                                                               |          | End 10:45    |          |                                       |
| $ \begin{array}{c} 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 19 \\ \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 9               |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c} 11 \\ 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 19 \\ \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c} 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 19 \\ \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 10              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c} 12 \\ 13 \\ 14 \\ 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |      |          |        |          |                   |                 | -                                                                                                               |          |              |          |                                       |
| $ \begin{array}{c}  13 \\  14 \\  14 \\  15 \\  16 \\  17 \\  18 \\  19 \\  19 \\  19 \\  19 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 \\  10 $  | 11              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c} 13\\ 14\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 19\\ 1 \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 | l    |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c}     14 \\     15 \\     16 \\     17 \\     18 \\     19 \\   \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 12              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c}     14 \\     15 \\     16 \\     17 \\     18 \\     19 \\   \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $     \begin{array}{c}       15 \\       16 \\       17 \\       18 \\       19 \\     \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 13              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $ \begin{array}{c} 15 \\ 16 \\ 17 \\ 18 \\ 19 \\ 19 \\ \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |      |          | Í      |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $     \begin{array}{c}       15 \\       16 \\       17 \\       18 \\       19 \\     \end{array} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 14              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $     \frac{16}{17} $ $     \frac{17}{18} $ $     \frac{19}{19} $ $     \frac{19}{19} $ $     \frac{10}{19} $ $     \frac{10}{19} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| $     \frac{16}{17} $ $     \frac{17}{18} $ $     \frac{19}{19} $ $     \frac{19}{19} $ $     \frac{10}{19} $ $     \frac{10}{19} $                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          | ł                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | h <sub>at</sub> | 1    |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          |        | -        |                   |                 |                                                                                                                 |          |              |          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 4-7-f           |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          | ł      |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| <br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |      | ·        | ≁.     |          |                   |                 |                                                                                                                 |          |              |          | ļ                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 18              |      | Ì        | 1      |          |                   |                 |                                                                                                                 |          |              |          | ,                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          | İ      |          |                   |                 |                                                                                                                 |          |              |          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 19              |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      | .        |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 20 ]            |      | •        |        |          |                   |                 |                                                                                                                 |          |              |          | ł                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |      |          |        |          |                   |                 |                                                                                                                 |          |              |          |                                       |
| Standard Panatration Test N. Value I ANGAN Engineering and Environmental Services. Inc. I<br>TIERRA-B-0183                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Crandard        | Done | tration  | Tort N | U Volue  | <u> </u>          | I ANGAN F       | naineerina al                                                                                                   | nd Fnv   | ironmental : | Service  | es. Inc.                              |

| Project N     |      |        |          |            | G Former Front Street Gas Works Site         | Projec   | t No. 1406602<br>ion and Datum | 8.03                                  |
|---------------|------|--------|----------|------------|----------------------------------------------|----------|--------------------------------|---------------------------------------|
| Boring Lo     |      |        |          |            | k, New Jersey                                |          |                                | Date Finishe                          |
| Drilling C    |      |        |          |            | Environmental Services, Inc.                 | Date S   | Started                        | 4                                     |
| Drilling E    |      |        |          |            | Drill B-80                                   |          | 9/22/97                        | 9/22/97                               |
| Size and      | Туре | of B   | lit _    | 4-1/4"     | I.D. Hollow Stem Auger                       | •        | letion Depth                   | Rock Depth                            |
| Casing        |      |        |          |            | · · · · · · · · · · · · · · · · · · ·        | £        | 8 ft                           | Not Encounter                         |
| Casing H      | amm  | er     | Weight   | t          | Drop                                         | Water    |                                |                                       |
| Sampler       |      |        |          | 3" O.C     | . Split Spoon                                | Driller  | K. Mike I                      | Millican                              |
| Sampler I     | Ham  | mer V  | Veiaht   |            |                                              | Inspec   | tor Elana Se                   | elman                                 |
| Sampler       |      |        |          | 1          |                                              | <u> </u> |                                | (2)                                   |
| Depth         | s    | Туре   | Recov.   | SPT        | DESCRIPTION                                  |          | REMAR                          | KS                                    |
| (ft)          |      | :      | (ft)     | Ы/6"       |                                              |          |                                |                                       |
|               |      |        |          | 6          | VEGETATION                                   |          | Start 9:40                     |                                       |
| 1             | S-1  | SS     | 1.1      | 8          | Brown silty m-f SAND, trace f gravel         | [FILL]   | FID = 0 ppm                    |                                       |
| i-1           |      |        |          | 8          | Black - Reddish brown c-f SAND, trace-       |          |                                |                                       |
| 2             |      |        |          | 7          | silt and c-f gravel, occ. brick and coal fra |          |                                |                                       |
| ·             |      |        |          | 5          | Brown silty f SAND, trace clay and f gra     |          |                                |                                       |
|               |      | SS     | 0.8      | 8          | Lens of COAL TAR                             |          | FID = 0 ppm                    |                                       |
| 3             | S-2  | 55     | 0.0      |            |                                              |          | (12 ¢ pp                       |                                       |
| -             |      |        |          | 4          | Brown silty f SAND, trace f gravel           |          |                                |                                       |
| 4             |      |        |          | 6          | [FILL] (moist)                               |          |                                |                                       |
|               |      | 1      |          | 4          | Light brown silty f SAND, trace c-f grave    | 21       |                                |                                       |
| 5             | S-3  | SS     | 0.9      | 8          | [FILL] (moist)                               |          | FID = 0 ppm                    |                                       |
|               |      |        |          | 5          |                                              |          |                                |                                       |
| 6             | 1    |        |          | 11         |                                              |          |                                |                                       |
|               |      |        |          | 9          | Brown m-f SAND, trace clay and silt and      | jc-f     |                                |                                       |
| 7             | S-4  | SS     | 0.7      | 4          | gravel                                       |          | FID = 0 ppm                    |                                       |
|               |      |        |          | 4          | [FILL] (wet)                                 |          | Auger to 8 feet due            | e to hole closing                     |
| 1 8           |      |        |          | 5          |                                              |          | Install temporary w            | vell point at 8 fe                    |
|               |      |        |          | <u> </u>   | Boring completed at 8 feet                   |          | End 10:00                      | · · · · · · · · · · · · · · · · · · · |
| 9             |      |        |          |            | bonng completes at a reet                    |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| 10            |      |        |          |            | -                                            |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| 11            |      |        |          |            |                                              |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| 12            | ł    |        |          |            |                                              |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| 13            |      |        |          |            | ·                                            |          |                                |                                       |
|               |      | Ì      |          |            |                                              |          |                                |                                       |
| 14            | ļ    |        |          |            |                                              |          |                                |                                       |
| <u>├</u> ───┤ |      |        |          |            |                                              |          |                                |                                       |
| 15            |      | 1      |          |            |                                              |          |                                |                                       |
| ·····         |      | ·      |          |            |                                              |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| 16            |      |        |          | -          |                                              |          |                                |                                       |
|               | l    | ļ      | [        | - 1        | •                                            |          |                                |                                       |
| 17            |      |        |          |            |                                              |          |                                |                                       |
|               |      |        | ~ .      |            |                                              |          |                                |                                       |
| 18            |      |        |          |            |                                              |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| / 19          |      | Í      | 1        | -          |                                              |          |                                |                                       |
|               |      |        |          |            |                                              |          |                                |                                       |
| 20            |      | •      | ŀ        |            |                                              | 1        |                                |                                       |
| <u> </u>      |      |        |          |            |                                              | ŀ        |                                |                                       |
| *Standard i   |      |        | <u> </u> | <u> </u>   | LANGAN Engineering ar                        |          | ironmental Servic              | es Inc                                |
|               | -000 | IT DIA | n iocti  | v+ v 21116 | • • • • • • • • • • • • • • • • • • •        |          |                                |                                       |

| <sup>p</sup> roject N |       |        |                 |         |                                           | Project No. 1406602 |                     |                     |  |  |  |
|-----------------------|-------|--------|-----------------|---------|-------------------------------------------|---------------------|---------------------|---------------------|--|--|--|
| Boring L              | ocati | ion    | _               | Newa    | k, New Jersey                             | Elevat              | ion and Datum       | 8.21                |  |  |  |
| Orilling C            | omp   | bany   |                 | CT&E    | Environmental Services, Inc.              | Date S              | tarted              | Date Finished       |  |  |  |
| Drilling E            | quip  | ment   |                 | Mobile  | Drill B-80                                | 9/22/97 9/22/97     |                     |                     |  |  |  |
| Size and              | Туре  | e of E | Bit             | 4-1/4"  | I.D. Hollow Stem Auger                    | Compl               | etion Depth         | Rock Depth          |  |  |  |
| Casing                |       |        |                 |         |                                           |                     | 8 ft                | Not Encountere      |  |  |  |
| Casing H              | amn   | ner    | Weigh           | t       | Drop                                      | Water               | Level ~ 5 ft        |                     |  |  |  |
| Sampler               |       |        |                 | 3" O.C  | . Split Spoon                             | Driller             | K. Mike             | Millican            |  |  |  |
| Sampler               | Ham   | mer V  | Veight          | ·····   | 300 lb Drop 30"                           | Inspec              | tor Elana Se        | eelman              |  |  |  |
| Depth                 | s     | Туре   | Recov.          | SPT     | DESCRIPTION                               |                     | REMAR               | ĸs                  |  |  |  |
| (ft)                  |       |        | (ft)            | -Ъі/6** |                                           |                     |                     | _                   |  |  |  |
|                       |       |        |                 | 2       | VEGETATION                                |                     | Start 8:30          |                     |  |  |  |
|                       | S-1   | SS     | 0.2             | 3       | Black c-f SAND, trace-some c-f gravel,    |                     | FID = 0 ppm         |                     |  |  |  |
| · · · ·               | υ.    |        |                 | 2       | trace silt                                |                     | the opposition      |                     |  |  |  |
| 2                     |       |        |                 | 2       | [FILL] (dry)                              | ľ                   |                     |                     |  |  |  |
|                       |       |        |                 | 2       | Black c-f SAND, trace silt and c-f gravel |                     |                     |                     |  |  |  |
| 3                     | S-2   | SS     | 0.4             | 4       | -                                         |                     | FID = 0 ppm         |                     |  |  |  |
|                       | J-2   | 55     | U. <del>-</del> | 4       | [FILL] (dry)                              |                     | niqq v – un         |                     |  |  |  |
| 4                     |       |        |                 | 4       |                                           |                     |                     |                     |  |  |  |
| 4                     |       |        |                 |         |                                           |                     |                     | -                   |  |  |  |
|                       | 0.0   | SS     |                 |         | ROCK fragments                            |                     |                     |                     |  |  |  |
| 5                     | S-3   | 55     | 0.4             | 6       | (dry-ı                                    | wet)                | FID = 0 ppm         |                     |  |  |  |
|                       |       |        |                 |         | Brown c-f SAND, trace silt and f gravel,  |                     |                     |                     |  |  |  |
| 6                     |       |        |                 |         | occasional pockets of clay [FILL          | ]                   |                     |                     |  |  |  |
|                       | _     |        |                 |         | Brown c-f SAND, trace silt and f gravel,  |                     |                     |                     |  |  |  |
| 7                     | S-4   | SS     | 0.6             |         | occasional pockets of clay, timber and co |                     | FID = 0 ppm         |                     |  |  |  |
| _                     |       |        |                 |         | fragments                                 |                     | Auger to 8 feet due | -                   |  |  |  |
| 8]                    |       |        |                 | 3       | [FILL] (wet)                              |                     | nstall temporary w  | ell point at 8 feet |  |  |  |
|                       |       |        |                 |         | Boring completed at 8 feet                | ļ1                  | End 8:50            |                     |  |  |  |
| 9                     |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
| 10                    |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 |         | · _                                       |                     |                     |                     |  |  |  |
| 11                    |       |        |                 | 1       |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
| 12                    |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 |         |                                           | 1                   |                     |                     |  |  |  |
| 13                    |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
|                       |       |        | 1               | -       |                                           |                     |                     |                     |  |  |  |
| 14                    |       | 1      |                 | •       |                                           |                     |                     |                     |  |  |  |
|                       |       | 1      |                 |         |                                           |                     |                     |                     |  |  |  |
| 15                    |       |        | 1               |         |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 |         |                                           | 1                   |                     |                     |  |  |  |
| 16                    |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
|                       | 1     |        | .               | -       |                                           |                     |                     |                     |  |  |  |
| 17                    |       | [      |                 |         |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 | [       |                                           |                     |                     |                     |  |  |  |
|                       |       |        | -               | 1       |                                           |                     |                     |                     |  |  |  |
| 18                    |       |        | ·               | Į       |                                           |                     |                     |                     |  |  |  |
|                       |       |        |                 | Í       |                                           |                     |                     |                     |  |  |  |
| 19                    |       |        |                 |         |                                           |                     |                     |                     |  |  |  |
|                       | ļ     |        |                 | -       |                                           |                     |                     |                     |  |  |  |
| 20                    |       | ·      |                 | 1       |                                           |                     |                     |                     |  |  |  |
|                       | 1     |        | I               | 1       |                                           |                     |                     |                     |  |  |  |
| tandard F             |       |        |                 |         |                                           | 1                   |                     |                     |  |  |  |

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|                    |          |          |             |         |                                                                                                                 | OF BORING      | s Works Site                    | NP-5            | ect No.      | Sheet 1<br>1406602      |                                          |  |
|--------------------|----------|----------|-------------|---------|-----------------------------------------------------------------------------------------------------------------|----------------|---------------------------------|-----------------|--------------|-------------------------|------------------------------------------|--|
| Project N          | lame     |          |             |         | and the second data was a second data was a second data was a second data was a second data was a second data w |                | 3 110163 016                    | Flove           | ation and    |                         |                                          |  |
| Boring L           | ocati    | on       |             |         | k, New Jerse<br>Environment                                                                                     |                |                                 |                 | Started      |                         | Date Finished                            |  |
| Drilling C         | omp      | any      |             |         | Drill B-80                                                                                                      | a Jervices, I  |                                 |                 |              | 2/97                    | 9/22/97                                  |  |
| <b>Trilling</b> E  | quip     | ment     | 1:+         |         | I.D. Hollow S                                                                                                   | tem Auger      | Com                             | pletion De      |              | Rock Depth              |                                          |  |
| Jize and           | Type     |          | <u> </u>    | 4-1/4   | <u>1.D. 110104 0</u>                                                                                            | acin Auger     | -                               | 10 ft           | •            | Not Encounter           |                                          |  |
| Casing<br>Casing H | <u> </u> |          | Weight      |         |                                                                                                                 | Drop           |                                 | Wate            | r Level      | ~ 7 ft                  |                                          |  |
|                    | anni     |          | Teigin      |         | . Split Spoon                                                                                                   |                |                                 | Drille          | e <b>r</b>   | K. Mike                 | Millican                                 |  |
| Sampler            |          | V        | Voight      | 5 0.0   | 300 lb                                                                                                          | Drop           | 30"                             | Insp            | ector        | Elana Se                | eelman                                   |  |
| Sampler            | Ham      | mer v    | Veigni<br>I |         |                                                                                                                 | ;              |                                 |                 | 1            | REMAR                   |                                          |  |
| Depth              | s        | Туре     | Recov.      | SPT     |                                                                                                                 | DESCRI         | PTION                           |                 |              | HEMAN                   | 70                                       |  |
| (ft)               |          |          | (ft)        | ЬV6"    |                                                                                                                 |                |                                 |                 |              |                         | · · · · · · · · · · · · · · · ·          |  |
|                    |          |          |             | 6       | VEGETATIC                                                                                                       |                |                                 |                 | Start 11:    |                         |                                          |  |
| 1                  | S-1      | SS       | 1.2         | 7       |                                                                                                                 |                | occasional w                    |                 | FID = 1.     | о ррн                   |                                          |  |
|                    | Į        |          |             | 9       | brick and co                                                                                                    |                | -                               | lLL] (dr)<br>st | 7            |                         |                                          |  |
| 2                  | <b> </b> |          | ļ           | 12      |                                                                                                                 |                | trace f grave                   |                 |              |                         |                                          |  |
| ·                  |          | 00       |             | 10      |                                                                                                                 |                | k and cerami<br>prown silty f S |                 | FID = 0      | maa                     |                                          |  |
| 3                  | S-2      | SS       | 0.8         | 8<br>12 | trace of grav                                                                                                   | vol occasion   | al brick fragn                  | nents           |              | - 1                     |                                          |  |
|                    |          |          |             | 12      | FILL                                                                                                            |                | (moist)                         |                 |              |                         |                                          |  |
| 4                  |          |          |             | 10      | •                                                                                                               |                | trace f grave                   | el.             |              |                         |                                          |  |
| 5                  | S-3      | SS       | 1.2         | 8       |                                                                                                                 |                | y, brick and c                  |                 | FID = 0      | opm                     |                                          |  |
| <u>&gt;</u>        | 5.3      | 00       | 1.2         |         | fragments                                                                                                       |                |                                 |                 |              |                         |                                          |  |
| 6                  |          |          |             | 4       | [FILL]                                                                                                          | ]              | (moist)                         |                 | 1            | ۹ .                     |                                          |  |
|                    |          |          |             | 8       | Dark brown                                                                                                      | - Reddish bro  | wn - Black s                    | ilty f          |              |                         |                                          |  |
| 7                  | S-4      | ss       | 1.2         | 7       | SAND, trace                                                                                                     | clay and f gi  | avel and org                    | anic            | FID = 40     | ррт                     |                                          |  |
|                    | - '      |          |             | 9       | material, occ                                                                                                   | asional conc   | rete and coal                   | l               | 1            |                         |                                          |  |
| 8                  |          |          |             | 8       | fragments                                                                                                       | [FILL]         | (moist-we                       |                 |              |                         |                                          |  |
|                    |          |          |             | 11      |                                                                                                                 |                | ), some silt, t                 | race            |              | ~                       |                                          |  |
| 9                  | S-5      | SS       | 1.2         |         | clay and c-f g                                                                                                  |                | [FILL]                          | ,               | FID = 30     |                         | ue to belo elecia                        |  |
|                    | ļ        |          |             |         |                                                                                                                 |                | ne silt, trace i                |                 |              |                         | ue to hole closin<br>vell point at 10 fi |  |
| 10                 |          |          |             |         | gravel, occas                                                                                                   |                |                                 | (wet)           | End 12:2     |                         | ton point at 10 h                        |  |
|                    |          |          |             |         | Boring comp                                                                                                     | ieteo at 10 fé | et                              |                 |              |                         | -                                        |  |
|                    |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             |         |                                                                                                                 |                |                                 |                 | 1            |                         |                                          |  |
| 12                 |          |          |             |         |                                                                                                                 |                |                                 |                 | 1            |                         |                                          |  |
| 13                 |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             |         |                                                                                                                 |                |                                 |                 | · ·          |                         |                                          |  |
| 14                 |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    | 1        | ĺ        |             |         |                                                                                                                 |                |                                 |                 | Į            |                         |                                          |  |
| 15                 |          | Į        |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
| 16                 |          |          |             | Í       |                                                                                                                 |                |                                 |                 | [            |                         |                                          |  |
|                    |          |          |             | -       |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
| 17                 |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             | ł       |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
| 18                 |          | 1        | ~ .         |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
| 19                 |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
| 20 ]               |          | •        |             |         |                                                                                                                 |                |                                 |                 |              |                         |                                          |  |
|                    |          |          |             |         |                                                                                                                 |                | <u> </u>                        |                 |              | tal Carde               |                                          |  |
| Standard           | Pene     | etration | n Test M    | I-Value | !                                                                                                               | LANGAN E       | ingineering<br>r Drive Cente    | ana En          | vii Uliinen. | iai SeiviC<br>n NII - A | 97407                                    |  |
|                    |          |          |             |         |                                                                                                                 | Rive           | r Drive Cente                   | er I. El        | nwood ra     | in, INJ U               |                                          |  |