GROUND WATER
REMEDIAL INVESTIGATION REPORT ADDENDUM
AMERICAN MODERN METALS CORPORATION
65 PASSAIC AVENUE, KEARNY, NEW JERSEY

BBG000013

PREPARED FOR
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65 Passaic Avenue
Kearny, New Jersey

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1.0 EXECUTIVE SUMMARY

Bell Environmental Consultants, Inc. (BELL), on behalf of American Modern Metals Corporation (AMMCo), has prepared this Remedial Investigation Report (RIR) for submission to the New Jersey Department of Environmental Protection (NJDEP). This Remedial Investigation (RI) was performed at the AMMCo property located at 25 Belgrove Drive, Kearny, Hudson County, New Jersey (Figures 1 and 2).

The project is being performed as part of an ongoing ISRA investigation that was initiated in 1988. The most recent phase of soil and ground water investigation was based on a November 1999 Remedial Investigation Workplan (RIW) and two RIW addendums dated February 1, 2002 and May 9, 2001. The results on activities involving soil and light non-aqueous liquids (LNAPL) were submitted to the NJDEP in a Remedial Investigation Report (RIR) dated July 2001. At that time, the ground water portion of the investigation had not been finalized and, therefore, a second RIR has been prepared to present the ground water portion of the investigation.

Following submittal of the July 2001 Interim RIR, there were a total of eight outstanding LNAPL and ground water AOCs as described below.

DESCRIPTION	REQUIRED TASKS
LNAPL in MW-1 MW-8 and MW-9	An additional well was required to delineate the LNAPL in this AOC.
Arsenic	Monitoring Well MW-4 to be sampled for arsenic.
Aluminum	Monitoring wells MW-4, MW-9, and BEC-11S to be sampled for aluminum.
Volatile Organics In Ground Water	Installation of two monitoring wells west of Passaic Avenue to horizontally delineate the chlorinated VOCs and the installation of a deep monitoring well in the vicinity of BEC-12S for the purpose of vertical delineation. Also required was the sampling of ground water from Monitoring Wells MW-1, MW-8, MW-9, BEC-12S, BEC-14S, BEC-15S, BEC-16S, BEC-17S, and BEC-18S with samples analyzed for volatile organic compounds with a forward library search for tentatively identified compounds (VO+10).
Static Water levels	Three rounds of ground water elevation measurements required from all wells.
Chlorinated VOCs in Ground Water (Source Soils)	Install five soil borings along the eastern portion of former AOC-11 in an attempt to locate the source area.

Those tasks completed with respect to AMMCo's LNAPL and ground water quality investigation were as follows:

1. **LNAPL in MW-1, MW-8 and MW-9** – AMMCo completed the installation of well BEC-13S on July 16, 2001.
2. **Arsenic** – Ground water samples for arsenic analysis were obtained from MW-4 on June 7, 2001 and July 30-31, 2001.
3. **Aluminum** – Ground water samples for aluminum analysis were obtained from MW-4, MW-9 and BEC-11S on June 7, 2001 and July 30-31, 2001.
4. **Volatile Organics in Ground Water** –AMMCo installed six additional wells (BEC-1D, BEC-14S, BEC-15S, BEC-16S, BEC-17S, and BEC-18S) between January 3, 2001 and April 23, 2001. Additionally, ground water samples were obtained from MW-1, MW-8, MW-9, BEC-12S, BEC-14S, BEC-15S, BEC-16S, BEC-17S, and BEC-18S on June 7, 2001 and July 30-31, 2001 for VO+10 analysis.

5. **Static Water Levels** – Static water level measurements were obtained from all wells on June 7, 2001, July 30, 2001 and August 13, 2001.
6. **Chlorinated VOCs in Ground Water (Source Soils)** – AMMCo completed the two additional soil borings on July 16, 2001. The data from three soil boring locations completed on April 24, 2001 had been included in the July 2001 RIR. Both sets of data have been submitted as part of this RIR.

In addition to the scope of work agreed to by AMMCo and the NJDEP, AMMCo authorized one additional task associated with LNAPL that was detected in one of the newly installed wells. After the LNAPL was detected, a sample was obtained and submitted for analysis of product type and age.

2.0 PHYSICAL SETTING

2.1 SITE LOCATION

The AMMCo site is located in the Kearny Elite Industrial Park, which is located to the east and west of Passaic Avenue in an industrial area of Kearny, Hudson County, New Jersey (Figure 1). The site has an approximate area of 7.0 acres, with 5.7 acres located east of Passaic Avenue and the remaining 1.3 acres located west of Passaic Avenue. The portion of the site located east of Passaic Avenue (bounded by Marshall Street, Clark Avenue, and Belgrove Drive) is designated by the Town of Kearny as Block 14, Lots 3 and 4 and is utilized by AMMCo for its manufacturing operations. The portion of the site located west of Passaic Avenue is designated as Block 1, Lots 9, 10, and 11 and currently included both leased facilities (Marshall Clark Manufacturing, Ferber Plastics, and RMS Sportswear) and AMMCo's office facilities.

2.2 TOPOGRAPHY AND DRAINAGE

The AMMCo site is located in the northeast region of New Jersey – a region of New Jersey that has been impacted by various glacial episodes and is characterized by low rolling, bedrock topography. Based upon a review of the United States Geological Survey (USGS) Orange and Elizabeth topographic quadrangles of the area, the topography in the area surrounding the AMMCo site ranges in elevation from 5 feet above mean sea level (MSL) to the west of the site to 120 feet above MSL to the east of the site. Regional drainage surrounding the AMMCo site occurs through natural drainage channels and manmade drainage structures (e.g., storm sewers) which discharge into the Passaic Valley Sewerage Commission sanitary sewer system. The western portion of the site borders the Passaic River as shown on Figure 2. A review of USGS topographic maps indicates that the AMMCo site is generally located between approximately 6 feet MSL (near the western property boundary) and 22.50 feet MSL (near the northeastern property boundary). The site slopes to the west towards the Passaic River. Surface water runoff from the area of the site located east of Passaic Avenue flows to storm drains while runoff from the area of the site located west of Passaic Avenue flows overland and ultimately infiltrates into the unconsolidated aquifer beneath the site.

2.3 WETLANDS

The AMMCo site, and the properties adjacent to the site, is identified by the National Wetlands Inventory (NWI) as Upland. The portion of the Passaic River that is located to the west of the site is identified as Estuarine Subtidal Open Water. A Wetlands Area Map for the area surrounding the AMMCo site is presented as Figure 3.

2.4 SOILS AND GEOLOGY

2.4.1 Soils

Based on a review of the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) *Soil Survey for Hudson County, New Jersey*, the majority of the soils located in

the region surrounding the AMMCo site are described as Udothents soils. This land type has been filled and smoothed, or otherwise extensively disturbed by excavation and filling activities, to a depth of 3 feet or more. The USDA reports that, in general, the original soil can no longer be identified and most areas are presumed to have originally had deep, very poorly drained organic or mineral soils, which had fill added to raise the ground surface elevation to prevent flooding of properties adjacent to the river. Historic fill material (brick and glass fragments, cinders, stones, etc.) was uniformly found across the site to depths ranging from 2.0 feet (MW-1 and MW-3) to 5.5 feet MW-5. Predominantly red brown sands and clayey sands (west of Passaic Avenue) or gravelly sands with minor amounts of silt and clay (east of Passaic Avenue) underlay the historic fill materials.

2.4.2 Geology

The AMMCo site is situated in the Piedmont physiographic province, which encompasses the eastern half of northern New Jersey. Unconsolidated deposits at the site consist of glacio-fluvial Pleistocene deposits overlying Pleistocene glacial till deposits. The fluvial deposits consist of a stratified, unconsolidated, heterogeneous mixture of well-graded sands and gravels, with a lesser percentage of silt and clay, and range from fifteen to twenty-five feet in thickness. The majority of these deposits were formed as a result of stream channel outwash. Included in these deposits are lenses of silts and clays recently deposited by the Passaic River. Underlying these deposits is a Pleistocene glacial till deposit that consists of an unconsolidated, unstratified mixture of sand, clay and gravel. The thickness of the Pleistocene deposits varies greatly from less than ten feet thick in the western part of Newark to 200 feet thick east of Harrison. Underlying the glacial deposits is the red shale and sandstone bedrock of the Passaic Formation (formerly the Brunswick Formation) of the Newark Group. This Triassic bedrock originated as sand, silt, and mud, which eroded from older rocks northwest and southeast of the area. The strata have been tilted northwestward with a northeast trend of the beds.

A geologic cross section for the AMMCo site has been prepared utilizing the most recent set of boring logs. A review of the data indicates that the site is underlain by fill material (brick and concrete) and varies in thickness from as much as 18 feet in BEC-18S to as little as 0.5 feet in SB-47. However, fill material is generally present within the first five feet of the subsurface. The fill material in underlain by four to sixteen feet of poorly graded sands with little silt. The poorly graded sands are underlain by an undetermined thickness of well-graded sand and gravelly sand. The geologic cross sections and the boring logs used in their creation are included in Appendix A.

2.5 HYDROGEOLOGY

The following subsections provide a description of the hydrogeologic characteristics of the region surrounding the AMMCo site and provide a description of the hydrogeologic characteristics at the site as noted during installation of monitoring wells, temporary wells, etc. A site plan showing relevant features has been included as Figure 2.

2.5.1 Regional Hydrogeology

The AMMCo site is situated in the Lower Passaic River Discharge Basin. Ground water, which typically occurs under unconfined conditions within the Pleistocene overburden deposits, is discharged regionally to this drainage basin. The bedrock aquifer in the region is the Triassic Age Passaic Formation. The storage capacity of the Passaic Formation is relatively low, and can only be adequately recharged from the porous, permeable, overlying deposits. As the primary porosity of the bedrock is not sufficient enough to allow water movement through the bedrock, a secondary porosity system, created by cracks and fractures, is essentially the only means for this aquifer to yield or transmit water. This system of cracks and fractures intersect to allow water to move directionally according to the orientation of the prevalent fracture system (generally trending northeast to southwest). As greater depths are reached, the weight of the overlying material increases and tends to close the cracks, thereby reducing the capacity of the formation to store and transmit water.

2.5.2 Site Hydrogeology

Information pertaining to site hydrogeology was obtained from multiple ground water monitoring wells within the overburden and the monitoring of static ground water levels both historically as well as during this RI. Ground water elevations were not finalized as of the completion of this report. Elevation data on the new wells and repaired wells, along with ground water flow maps for this phase of investigation, will be provided as an addendum as soon as it is received.

Based on historic flow data, ground water flow in the overburden is generally within predominantly red brown sands and clayey sands (western side of Passaic Avenue) or gravelly sands with minor amounts of silt and clay (eastern side of Passaic Avenue). Prior evaluations of ground water flow data show a general ground water flow toward the northwest with a relatively uniform gradient. This flow direction has been supported by the ground water quality data that shows that the major contaminant migration is to the north/northwest.

2.6 SURROUNDING PROPERTY USES

The AMMCo site is located within an industrial section of Kearny that is generally viewed as an extension of the Ironbound section of Newark, which is located across the Passaic River from the site. The properties surrounding the AMMCo site are described as follows:

1. East of the site (across Clark Street) is a residential housing complex identified as the General Kearny Apartments;
2. To the north (across Marshall Street) is a commercial strip mall which includes a Shop Rite grocery store, a laundromat, and retail stores;
3. To the west of the site is the Passaic River;
4. To the south/southwest of the site are two active gasoline service stations; and
5. To the northwest and southwest of the site (beyond Passaic Avenue) are the Franklin Chemical Company (formerly known as Franklin Plastics) and the American Strip Steel Company, respectively.

3.0 OVERVIEW OF REMEDIAL INVESTIGATION ACTIVITIES

The following sections summarize the most recent ground water remedial investigation activities conducted at the AMMCo site. The analytical methods and quality assurance/quality control (QA/QC) procedures utilized during the RI are summarized in Table 1. Boring and monitoring well logs have been included in Appendix B. The monitoring well Form A's and Form B's will be submitted upon receipt of the survey data. The groundwater remedial investigation program was conducted in accordance with the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E, et. seq.) and the NJDEP *Field Sampling Procedures Manual* (May, 1992). Samples were submitted to Technion Incorporated Testing and Research Laboratories (Technion) located in Nutley, New Jersey (NJDEP Certification #07004).

3.1 LNAPL in MW-1, MW-8, and MW-9

On July 16, 2001, monitoring well BEC-13S was installed to further assess the horizontal extent of LNAPL previously detected in monitoring wells MW-1, MW-8 and MW-9. Monitoring well installation was performed by Environmental Probing Investigations (EPI) of Cream Ridge, New Jersey. The location of BEC-13S is depicted on Figure 2. It should be noted that the location of BEC-13S was offset slightly to the east due to the location of a six-inch underground sprinkler line. Installation procedures were conducted as described in Section 3.3. Monitoring well BEC-13S was constructed with ten feet of 0.01 slot, 4-inch, PVC well screen with 4-inch PVC riser sufficient to extend to the ground surface. The total depth of monitoring well BEC-13S was 16.3 feet BGS with the observed water table at the time of installation at 10.25 feet BGS.

On July 31, 2001, a product sample was collected from BEC-13S and sent to Friedman and Bruya of Seattle, Washington for product type and date analysis. The product sample was extracted and analyzed using a gas chromatograph (GC) with a flame ionization detector (FID) and an electron capture detector (ECD) in order to identify the type of material present and assess weathering.

3.2 Ground Water Sampling for Arsenic, Aluminum, and Volatile Organics

In order to assess the ground water quality in the area of study, BELL collected ground water samples from monitoring wells MW-1, MW-4, MW-8, MW-9, BEC-11S, BEC-12S, BEC-14S, BEC-15S, BEC-16S, BEC-17S, BEC-18S, and BEC-1D on June 7, 2001 and then again on July 30 and 31, 2001. Monitoring well BEC-13S was not sampled during the June 7, 2001 sampling episode because it had not been installed at that point in time. Additionally, BEC-13S could not be sampled during the July 30 and 31, 2001 sampling round due a 0.19 ft of product on top of the water table. Prior to sampling, each monitoring well was inspected by BELL personnel to observe and document the security of the well. Each monitoring well was subsequently opened and screened with a PID to measure accumulated organic vapors, if any, within each well column. The static fluid level within the well was inspected for evidence of free-phase hydrocarbon using an interface probe. The static ground water level in each well was measured using a ground water level indicator with an accuracy of 1/100 of a foot. An initial sample of ground water was collected from each well and analyzed for pH, temperature,

conductivity, and dissolved oxygen using field instrumentation. Subsequently, three to five volumes of the saturated well column and annular space were purged from each well using a whale pump. Following purging procedures, ground water samples were then collected using disposable Teflon bailers. The bailer was slowly lowered into the monitoring well below the water table, avoiding excess agitation/aeration of the ground water, and then retracted.

Monitoring wells sampled for metals (arsenic and aluminum) on both dates were purged with a peristaltic pump using the low flow technique as summarized in EPA's *Low-Flow (Minimum Drawdown) Ground Water Sampling Procedures* document dated December 1995. Low flow purging was considered complete upon stabilization of dissolved oxygen (±10% variation), conductivity (±3% variation) and ph (±0.10 variation) parameters.

Table 1 summarizes the analytical parameters for each well that was sampled. Table 2 presents a summary of the monitoring well physical data and field measurements. Ground water samples were containerized in laboratory-supplied glassware, which were then sealed and labeled. Once sealed and labeled, the sample vials were placed into a sample cooler maintained at a temperature of four degrees Celsius and transported to the analytical laboratory, Technion. Ground water sampling procedures were performed in accordance with the NJDEP *Field Sampling Procedures Manual* (May 1992) and in EPA's *Low-Flow (Minimum Drawdown) Ground Water Sampling Procedures* (December 1995).

3.3 Monitoring Well Installation – Volatile Organics in Ground Water

Between January 3, 2001 and July 16, 2001, AMMCo completed the installation of seven monitoring wells to further assess the extent of VOCs and LNAPL in the ground water. The monitoring wells were completed by EPI. The following table summarizes the installation of the monitoring wells:

Location	Date	Driller	Depth to Water (ft BGS)	Total Well Depth (Ft BGS)	Compound/Delineation
BEC-1D	1/10/01	Horizon	11	40	VOCs/Vertical
BEC-14S	4/23/01	EPI	8	15.5	VOCs/Downgradient
BEC-15S	1/4/01	Horizon	11.3	15.3	VOCs/Sidegradient
BEC-16S	1/3/01	Horizon	8	18	VOCs/Upgradient
BEC-17S	1/10/01	Horizon	11.5	18.5	VOCs/Upgradient
BEC-18S	4/23/01	EPI	11	18	VOCs/Downgradient

The ground water monitoring wells were installed using hollow stem auger drilling techniques. Soils were classified using the Burmeister Soil Classification System, with stratigraphic units described using the Unified Soil Classification System. Additionally, observations regarding the color, composition, moisture content, and presence of visible contamination or PID readings were noted in the monitoring well logs (Appendix B).

At the selected location, a six-inch diameter borehole was advanced through the subsurface utilizing the procedures described below. The borehole was advanced to approximately seven feet below the water table. Please note that the boring for BEC-1D was extended beyond seven feet below the water table for the purpose of vertical delineation. Upon attaining the selected depth, the PVC well materials were lowered into the borehole through the hollow stem

auger flights. The PVC well materials included ten feet of four-inch, inside diameter (ID), factory milled, 10-slot (0.010 inch) PVC screen, flush threaded with a PVC well plug, and four-inch ID PVC riser sufficient to extend to the ground surface. The targeted screened interval was extended seven feet below and three feet above the static water level observed at the time of installation. The screened interval for monitoring well BEC-1D is 30 to 40 feet BGS because it is being used as a vertical delineation point.

A #1 sand (utilized as gravel packing material) was introduced within the annular space starting at the bottom of the borehole and extending to a minimum of two feet above the well screen. A two-foot seal was then added within the annular space. The hollow stem auger flights were intermittently retracted from the borehole during the installation of the gravel pack to prevent collapse of the natural formation into the well. A bentonite-cement slurry was pressure grouted into the remainder of the annular space and extended to ground surface. A steel flush mount casing with cap and locking mechanism was set into the cement slurry. The wells were completed with a watertight flange cap and a well tag designation. The newly installed wells were developed with a progressive cavity pump until a turbid-free discharge was obtained.

3.4 Water Level Readings

On June 7, 2001, July 30, 2001, and August 13, 2001, monitoring wells were gauged with a Heron electronic water level indicator and a Heron electronic interface probe, both with an accuracy of 0.01 foot. All of the monitoring wells were gauged with the exception of MW-2, which is damaged, and MW-5, which was underneath construction debris and inaccessible.

3.5 Chlorinated VOC's in Ground Water (Source Soils)

Historical information indicated the potential for soils in the vicinity of Buildings # 1 and 2 to be the source of the chlorinated compounds detected in the ground water. The NJDEP June 15, 2000 letter accepted AMMCo's proposal to install five soil borings along the eastern side of Buildings #1 and 2 for the purpose of investigating the soil. Three soil borings (SB-45, SB-46, and SB-47, Figure 4) were completed on April 24, 2001 along the eastern side of Buildings # 1 and 2. On July 16, 2001, two additional NJDEP required borings (SB-48 and SB-49) were completed by EPI. Direct push technology was used to advance the borings. In addition, four-foot acetate macrocore samples were collected on a continuous basis until the water table was encountered. Bell personnel field screened the soil, and collected samples biased towards elevated PID readings and/or visual contamination. In cases where no contamination was detected through field screening, one soil sample was collected from the interval six inches above the observed depth of ground water. Ground water was encountered at depths ranging from 10 ft to 12 ft BGS. The following table summarizes the samples collected:

Sample Location	Sample Depth (feet)	Field Screening	Analysis
SB-45	11-11.5	OVM: 0.0; No staining; DTW: 11.5' BGS	VO+10
SB-46	1-1.5	OVM: 3.6	VO+10
	11.5-12	OVM: 14.1	VO+10
SB-47	10-10.5	OVM: 0.0; No Staining; DTW: 10.5' BGS	VO+10
	10-10.5 (duplicate)		VO+10

SB-48	11-11.5 11-11.5 (duplicate)	PID: 0.0; No Staining; DTW: 11.5 'BGS	VO+10 VO+10
SB-49	11-11.5	PID: 0.0; No Staining; DTW 11.5'BGS	VO+10

Samples were collected using the methanol preservation technique. Upon collection, the samples were stored in the analytical field cooler pending delivery to Technion for analysis of VO+10.

3.6 QUALITY ASSURANCE/QUALITY CONTROL

As the technical reliability of this project is directly dependent upon the quality of the work performed, stringent Quality Assurance/Quality Control (QA/QC) measures were continuously adhered to during all operations.

3.6.1 Personnel

BELL technical personnel are trained and versed in environmental investigations and operations, including coordination of field activities, negotiation of site restrictions, sample acquisition, client and contractor interaction, quality assurance, and health and safety procedures. All field personnel have completed the 40-hour OSHA Health and Safety Training course and are supplemented by an annual eight-hour refresher course. Additionally, all applicable personnel are incorporated in a Medical Monitoring Program. Experienced project managers and group leaders closely supervise field personnel, with final work reviewed and approved at a corporate level of vice president.

3.6.2 Equipment

Field equipment is properly maintained and stored at BELL's Budd Lake Location. The equipment is routinely checked for proper operation and calibrated before each field event by the equipment manager. The equipment manager also maintains records of equipment maintenance and calibration. Project specific calibration records are maintained within the project file along with the field documentation. Non-dedicated field equipment is decontaminated in accordance with standard regulatory protocol.

3.6.3 Procedures

BELL field procedures are conducted in accordance with current federal and state guideline documents with field personnel monitored by experienced personnel. Documentation of all project related activities and specifically, all field operations, is maintained within the project file.

3.6.4 QA Samples

As part of the BELL QA Program and standard field procedures, quality assurance samples are procured and prepared to document extraneous compound contribution from the laboratory and/or field environments. QA sample procurement is designed and executed in accordance with federal and state environmental sampling guidelines.

3.6.5 Documentation

Project related activities are detailed in the field and office documents, which are maintained within a systematic project filing system. These include: contract agreements and addenda, correspondence with clients, regulatory agencies, legal and technical representation, telephone conversation records, meeting compendiums, inter/intra-office memorandums, field documentation (i.e., field notes, photographs), equipment calibration records, contractor (laboratory) reports and chains of custody, and health and safety manuals and procedures. Reporting requirements and deliverables are subject to a series of in-house QA reviews, including technical staff, QA/QC coordinator, Senior Project Manager, and Corporate Principal, before submission.

4.0 INVESTIGATION RESULTS

The following sections present the results of the groundwater RI activities conducted at the AMMCo site as outlined under Section 3.0. Analytical parameters for groundwater samples were selected based on previous analytical results, requirements directed by the referenced NJDEP letters and the NJDEP requirements as identified in the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E et. seq.). The analytical results for the groundwater samples are summarized in Tables 3 and 4. Groundwater sample results were compared to the Class II A NJDEP Ground Water Quality Standards (NJDEP GWQS). Analytical data packages have been presented in Appendix C. The Hazsite electronic data deliverables for the groundwater data is included Appendix D.

4.1 LNAPL Investigation Results

4.1.1 LNAPL in MW-1, MW-8, and MW-9

On June 7, 2001, monitoring wells MW-1, MW-8, and MW-9 were checked for the presence of LNAPL, which was not detected. LNAPL was not detected during this sampling event. On July 16, 2001, monitoring well BEC-13S was installed to further assess the horizontal extent of the LNAPL previously detected in monitoring wells MW-1, MW-8, and MW-9. During the July 30 and 31, 2001 sampling event, LNAPL was detected at MW-9 as a detectable sheen (< 0.01 foot). LNAPL was also detected at monitoring well BEC-13S during the July 30 and 31, 2001 sampling event (0.19 feet). Based on the GC/FID analysis, the majority of material present in the sample is consistent with a mixture of mineral spirits or Stoddard solvent and an oil similar to hydraulic oil, lubrication oil or transformer oil. Due to the chemical composition of the product identified, the weathering of the materials could not be estimated with GC/FID analysis. The complete report from Friedman and Bruya is included as Appendix E.

4.2 VOLATILE ORGANICS IN GROUND WATER RESULTS

4.2.1 Chlorinated VOCs in Ground Water (Source Soils)

On April 24, 2001, soil samples were collected from three soil borings (SB-45, SB-46, and SB-47) and on July 16, 2001, soil samples were collected from two soil borings (SB-48 and SB-49) to assess the possibility of a source area for the chlorinated VOCs detected in the ground water. No compounds of concern were detected in any of the analytical samples collected for this task. A summary of analytical results is presented in Tables 5 and 6. The analytical data package for the July 16, 2001 soil is presented in Appendix G. The complete Hazsite Submittal is presented in Appendix D.

4.2.2 Volatile Organic Compounds in Ground Water

On June 7, 2001 and on July 30 and 31, 2001, BELL obtained ground water samples from the monitoring wells referenced earlier in section 3.3 of this report. These samples were analyzed for VO+10. An evaluation of the analytical data indicates that volatile organic compounds were detected in excess of the NJDEP Class II-A GWQS in monitoring wells BEC-1D, MW-1,

MW-8, MW-8 (dup), MW-9, BEC-12S, BEC-14S, BEC-16S, BEC-18S. The following table summarizes the analytical results:

Monitoring Well	June 7, 2001 Analytical Results (ug/L)	July 30 and 31, 2001 Analytical Results (ug/L)	NJDEP Class II-A GWQS (ug/L)
BEC-1D	Trichloroethene – 25	Bromodichloromethane – 4 Chloroform – 22 1,2-Dichloropropane - 1 Trichloroethene - 193	Bromodichloromethane – 1 Chloroform – 6 1,2-Dichloropropane - 1 Trichloroethene - 1
MW-1	Trichloroethene – 3		Trichloroethene - 1
MW-8		Bromodichloromethane – 13	Bromodichloromethane – 1
MW-8 (dup)	Chloroform – 20		Chloroform – 6
MW-9	Benzene – 64 Chloroform – 20	Benzene – 1	Benzene – 1 Chloroform - 6
BEC-12S	Chloroform – 6 cis-1,2-Dichloroethene – 689 Tetrachloroethene – 2	cis-1,2-Dichloroethene – 828 Tetrachloroethene – 3 Trichloroethene – 191 Vinyl Chloride - 16	Chloroform – 6 cis-1,2-Dichloroethene – 70 Tetrachloroethene – 2 Trichloroethene – 1 Vinyl Chloride - 5
BEC-14S		cis-1,2-Dichloroethene – 232 Trichloroethene - 142	cis-1,2-Dichloroethene – 70 Trichloroethene - 1
BEC-16S	Tetrachloroethene - ND Trichloroethene – 85	Tetrachloroethene – 1 Trichloroethene – 107	Tetrachloroethene - 1 Trichloroethene -1
BEC-17S	Chloroform – 23		Chloroform - 6
BEC-18S	cis-1,2-Dichlorothene – 105 Tetrachloroethene – 1 Trichloroethene – 201	cis-1,2-Dichlorothene – 157 Trichloroethene – 281	cis-1,2-Dichloroethene – 70 Tetrachloroethene – 1 Trichloroethene - 1

Tables 3 and 4 present a summary of the compound concentrations exceeding the NJDEP Class II-A GWQS. Figures 5 and 6 depict the locations where the NJDEP Class II-A GWQS was exceeded. The complete analytical package for these samples is presented in Appendix C.

4.3 Metals in Ground Water

Monitoring wells MW-4, MW-9, and BEC-11S were sampled for aluminum, and monitoring well MW-4 was also sampled for arsenic during both ground water sampling conducted on June 7, 2001, and July 30 and 31, 2001.

The analytical results from both sampling events from these wells show that neither aluminum nor arsenic was present. The complete analytical package for these samples is presented in Appendix C. Tables 3 and 4 present a summary of the sample results.

4.4 Ground Water Elevations

A total of three ground water elevation contour maps created from the water levels collected on June 7, 2001, July 30, 2001, and August 13, 2001 will be prepared and submitted upon receipt of data from the surveyor.

5.0 CONCLUSIONS

5.1 Soil – Chlorinated VOC's in Ground Water (Source Soils)

A review of the soil data collected in the vicinity of AOC-11 (located on the eastern side of Building 1) during this phase of investigation demonstrates that the soil is clean in the vicinity of the Endre Doczy building. No further action is proposed with respect to this specific area of concern.

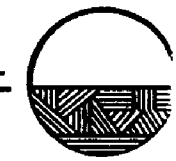
5.2 Aluminum and Arsenic in Ground Water

Based on an evaluation of the data collected via low flow sampling, the presence of elevated levels of aluminum in prior ground water sampling rounds are attributed to suspended solids in the ground water as stated in BELL's November 1999 RIR. No further action is proposed for this issue.

5.3 Volatile Organics in Ground Water

An evaluation of the ground water analytical data indicates that volatile organic compounds were detected in excess of the NJDEP Class II-A GWQS in ground water samples collected from the wells mentioned previously in section 4.2.2 of this report. Specifically the analytical results indicated that:

1. The downgradient and upgradient extent of the contaminant plume has not been established. Chlorinated VOC's in ground water that exceeded the NJDEP GWQS were detected in monitoring wells MW-1, BEC-12S, BEC-14S, BEC-16S, BEC-18S, and BEC-1D.
2. Given that only two rounds of data have been collected from many of the wells, insufficient data exists to develop conclusions about historic trends in the data.
3. The analytical data from monitoring well BEC-16S, located sidegradient of BEC-12S, exhibited chlorinated VOC's in excess of the NJDEP GWQS.
4. The chlorinated compounds detected are primarily trichloroethene, tetracloroethene, and the daughter compounds associated with these two primary compounds. Based on the levels of cis-1,2-dichloroethene detected at several locations, it would appear that the chlorinated compounds are not associated with a new release, as a fair amount of degradation has occurred.
5. The highest levels of chlorinated compounds were detected in the northwest portion of the AMMCo property located west of Passaic Avenue. However, chlorinated compounds were detected in wells encompassing an area approximately 300 ft long by 100 ft wide. Based on the distribution of compounds, a definitive source or sources is not readily identifiable.
6. Chloroform and bromodichloromethane were also detected at several locations. Although these compounds may be laboratory artifacts, they were not detected in the QA/QC blanks. Additional rounds of ground water data will be evaluated to determine whether these compounds are attributable to laboratory contamination.



5.4 LNAPL

LNAPL has been detected at a new location (Well BEC-13S). Two types of product were identified via the product typing, mineral spirits or Stoddard Solvent and a low boiling point petroleum product such as lubricating oil. A review of historic product sample results indicate that mineral spirits/Stoddard solvent was detected at a temporary well location (TW-4), located approximately 50 ft to the south southwest. Based on the finding of product at the temporary well location, AMMCo excavated soils and pumped ground water/product from the excavation. Subsequent sampling indicated that no LNAPL was detectable.

6.0 PROPOSED REMEDIAL INVESTIGATION AND ACTION TASKS

Based on the results of this phase of investigation, the following tasks are proposed:

1. **Soils** - Identify the probable source soil area(s) for the chlorinated compounds being detected in the ground water;
2. **Ground Water** - Delineate the vertical and horizontal extent of chlorinated VOC's in ground water;
3. **LNAPL** - Identify the probable source of the LNAPL detected in BEC-13S and implement an LNAPL recovery program for BEC-13S.

6.1 Passive Soil Gas Survey

In order to assess if there are residually impacted soils that are acting as a continuing source of ground water contamination, BELL proposes to perform a passive soil gas survey in the area located upgradient of the impacted wells and downgradient of the existing building. The survey will be conducted by collecting samples on a 25-ft. grid system. The purpose of this screening technology is to provide a quick, cost-effective evaluation of the presence, extent and relative concentration of volatile organic compound (VOC) vapors in the subsurface. The resultant data will be geographically plotted on a map of the site and directly used as a guidance tool to assess whether additional soil sampling is warranted. AMMCo believes that the implementation of this technique will allow it to complete the required evaluation of the potential of additional source areas within the subject site.

6.2 Ground Water Investigation

To delineate the vertical and horizontal extent of chlorinated VOCs in ground water, AMMCo proposes to install two additional horizontal delineation wells (BEC-19S and BEC-20S) and one vertical delineation well (BEC-1BD). The locations of these wells will be included in the Supplemental Report to this ground water RIR. The horizontal delineation wells will be completed in the unconsolidated zone while BEC-1BD will be completed in the first fracture zone in the underlying bedrock. Upon completion and purging, ground water samples will be collected from these additional wells, along with MW-1, MW-2, BEC-12S, BEC-14S, BEC-16S, BEC-18S, and BEC-1D for analysis of VOCs using dedicated, disposable Teflon bailers. Well MW-2 is proposed to delineate the horizontal extent of the plume south of well BEC-16S. The remaining wells had detectable levels of chlorinated compounds and warrant additional rounds of sampling. The ground water remedial investigation program will be conducted in general accordance with the *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E, et. seq.) and the NJDEP *Field Sampling Procedures Manual* (May, 1992).

AMMCo believes that the additional proposed locations will be sufficient to allow it to complete the delineation of the chlorinated compounds in ground water.

6.3 LNAPL

Based on the presence of LNAPL in BEC-13S, AMMCo proposes to implement the following scope of work:

1. Undertake an inspection and tightness test of the mineral spirits above ground storage tank located within Building #22; and
2. Install a passive product recovery skimmer in BEC-13S that will be emptied by AMMCo on a bi-weekly basis.

6.4 Schedule

AMMCo will submit to the NJDEP a schedule upon approval by the NJDEP of AMMCo's proposed scope of work.

7.0 SUMMARY AND LIMITATIONS

This report provides for documentation and investigation of current environmental concerns pertinent to the subject site. This RIR has been carefully and methodically developed, in accordance with generally accepted environmental practices, for specific application to the American Modern Metals Corporation facility located in Kearny, New Jersey. The RIR was prepared with specific reference to prior site activities and is based upon current available data as set forth within the introduction. The RIR presents BELL's professional opinion and judgment relative to the resolution of current environmental concerns at the site as currently known. No other warranty, expressed or implied, is made.

FIGURES

SITE LOCATION MAP

American Modern Metals Corporation
65 Passaic Avenue

Kearny | **Hudson County** | **New Jersey**

QUAD LOCATION

USGS 7.5 MINUTE ORANGE QUADRANGLE

SCALE 1:24,000

1 — 1/2 — 0 — 1 Mile

1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000 Feet

1 — 0.5 — 0 — 1 Kilometer

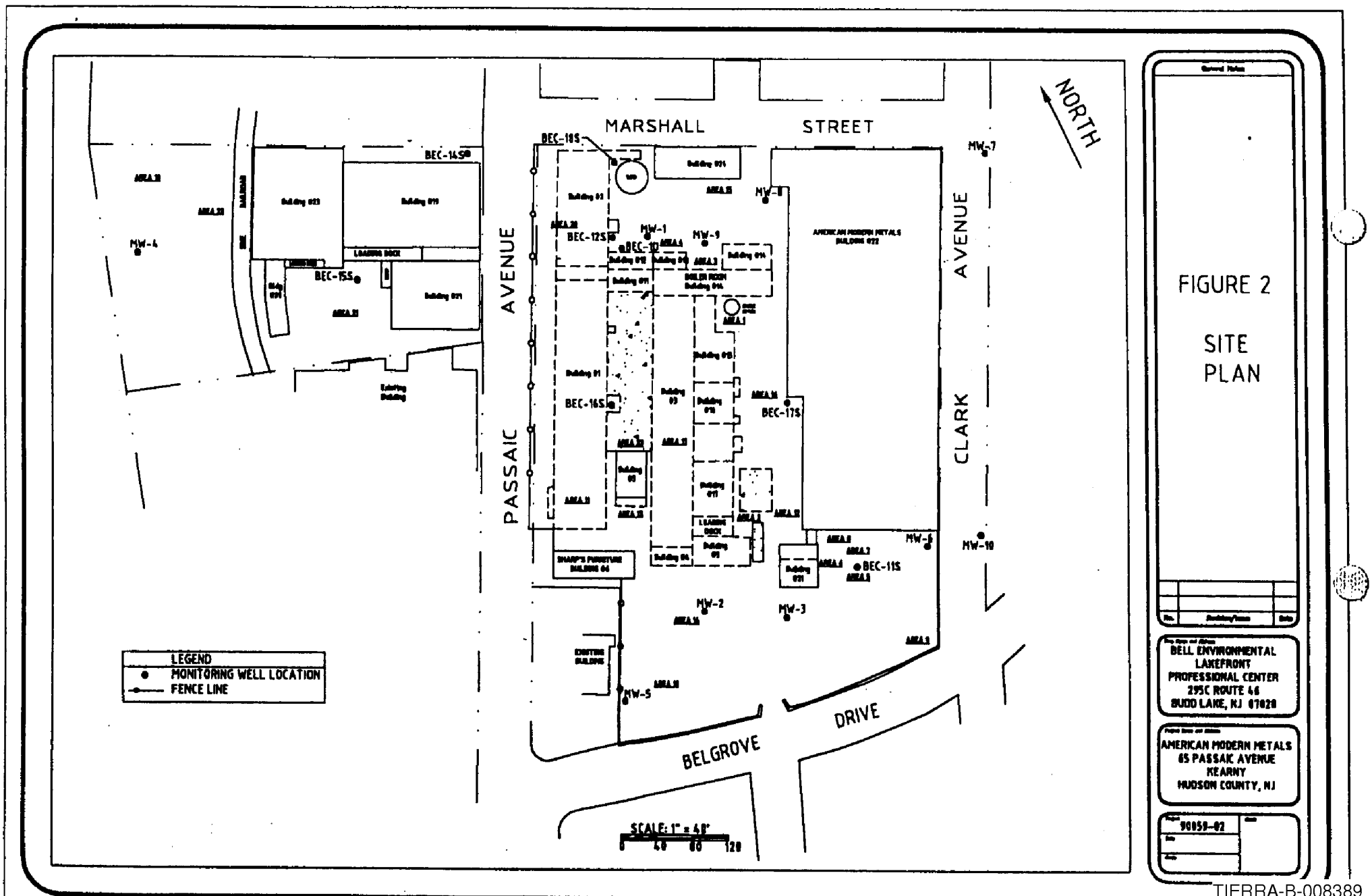
CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

N

FIGURE # 1

BELL PROJECT # EOG01-90059-02

TIERRA-B-008388



WETLANDS AREA MAP

American Modern Metals Corporation
65 Passaic Avenue

Kearny | **Hudson County** | **New Jersey**

QUAD LOCATION

USGS 7.5 MINUTE ORANGE QUADRANGLE

SCALE 1:24,000

1 1/2 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 0.5 0 1 Kilometer

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

N

FIGURE # 3

BELL PROJECT # EOG01-90059-02

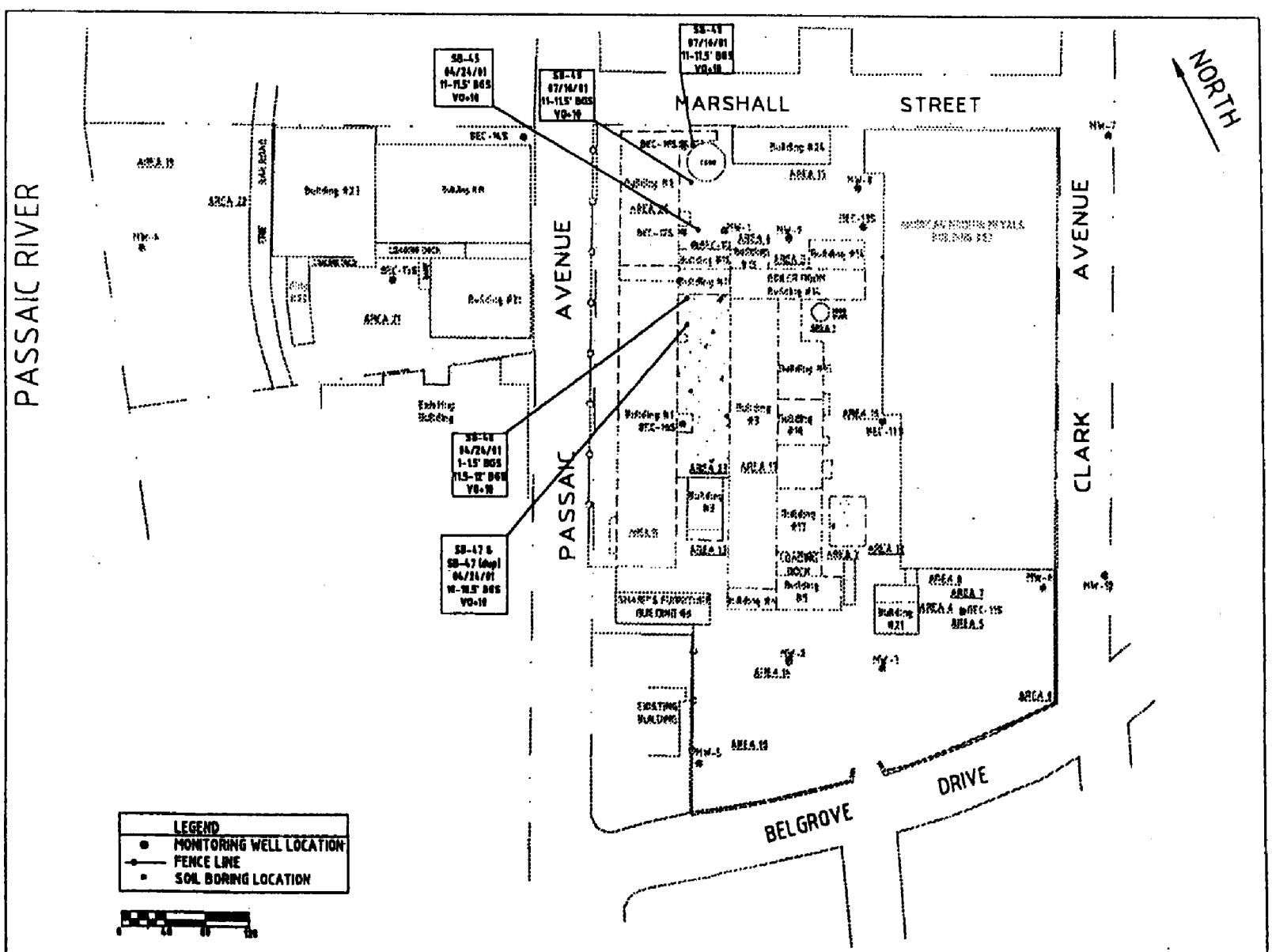


FIGURE 4

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

BELL ENVIRONMENTAL
LAKEFRONT
PROFESSIONAL CENTER
295C ROUTE 46
BUDD LAKE, NJ 07828

AMICO
25 BELGROVE DRIVE
KEARNY
HUDSON COUNTY, NJ

90459

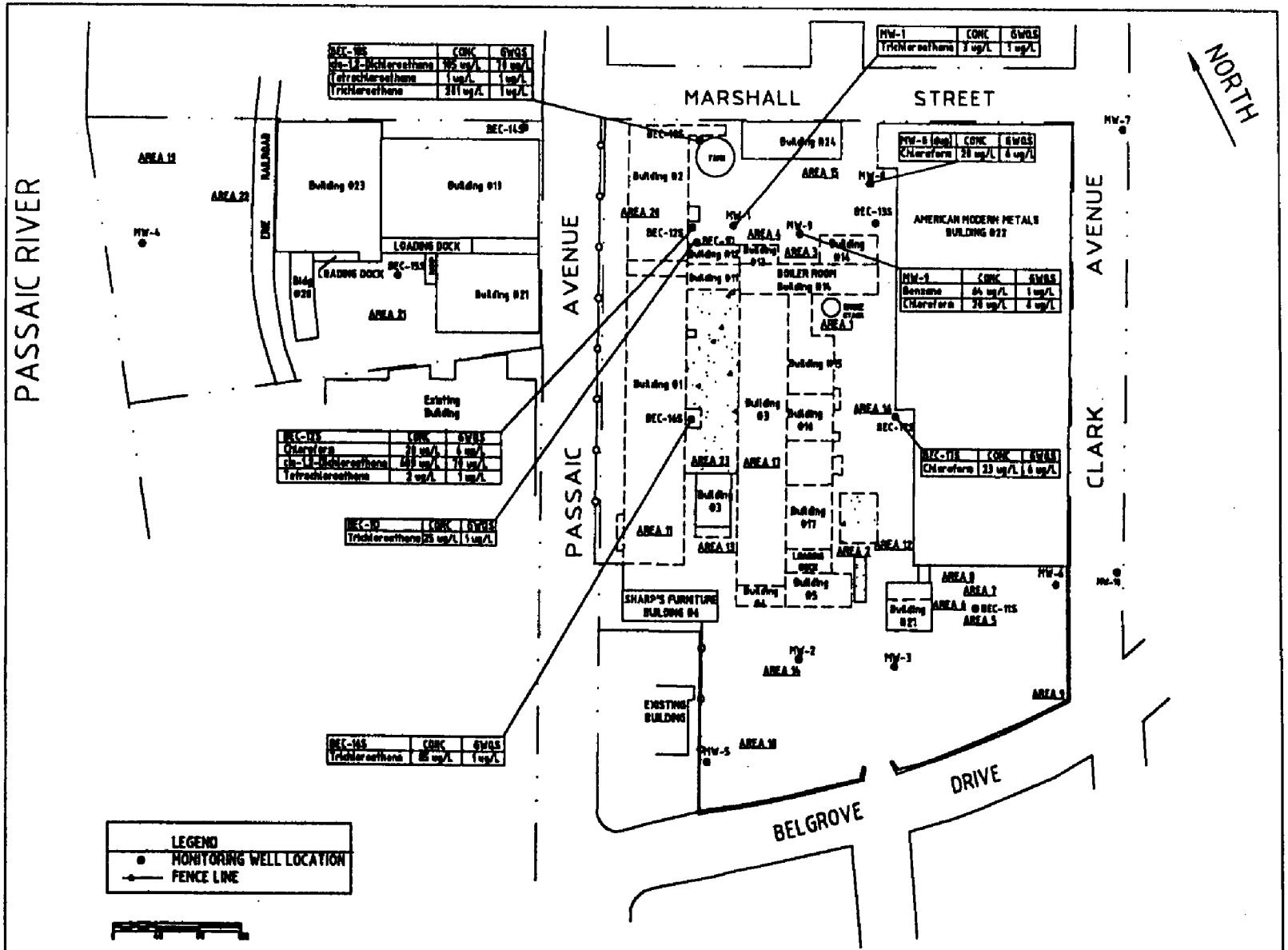


FIGURE 5
GROUNDWATER SAMPLES THAT EXCEEDED THE NJDEP GWQS
JUNE 7, 2001

BELL ENVIRONMENTAL
LAKEFRONT PROFESSIONAL CENTER
295C ROUTE 46
BUDD LAKE, NJ 07828

AMMCo
25 BELGROVE DRIVE
KEARNY
HUDSON COUNTY, NJ

90059
AUGUST 2001
1" = 14'

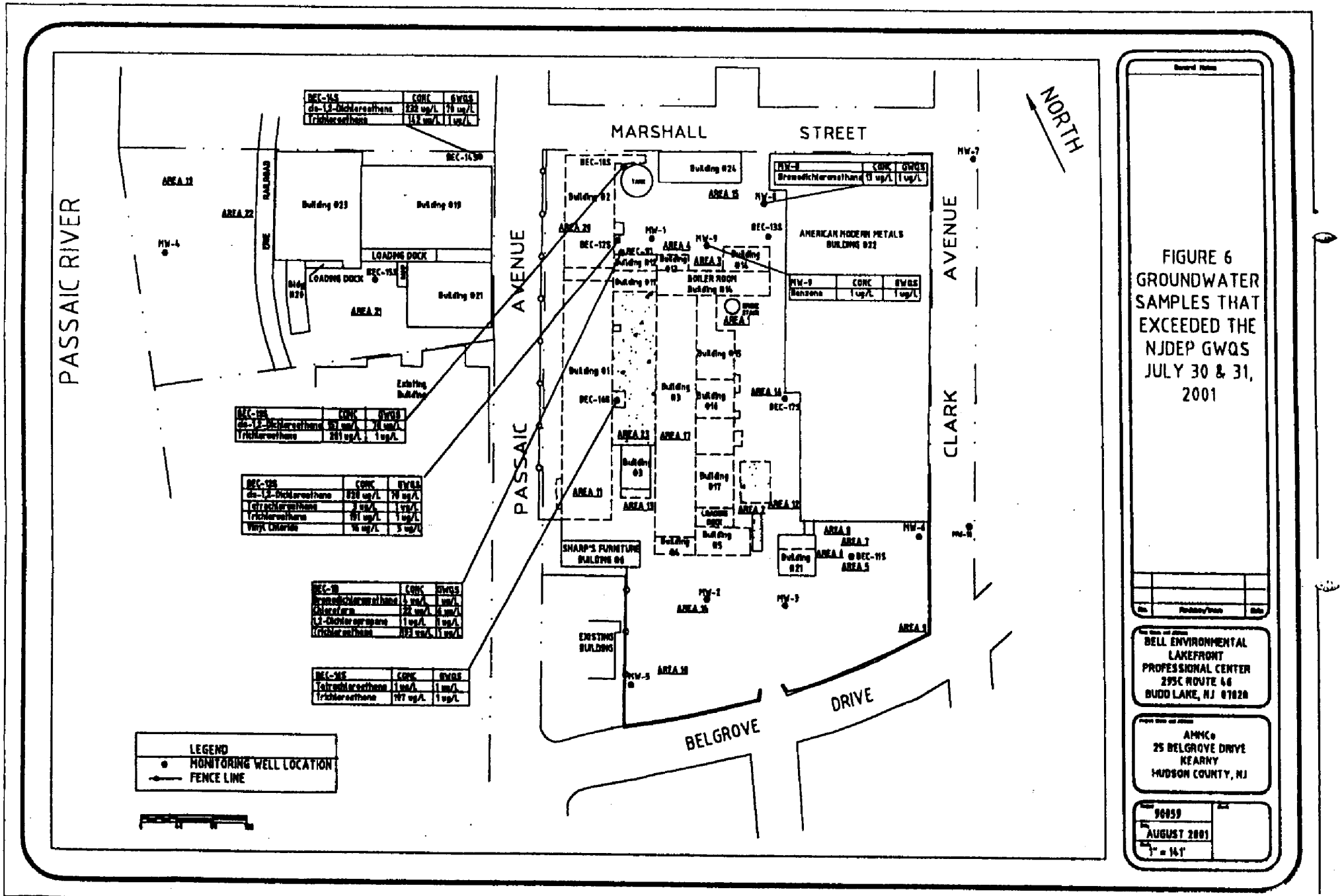

PASSAIC RIVER
MARSHALL STREET
NORTH
PASSAIC AVENUE
CLARK AVENUE
BELGROVE DRIVE
AMERICAN MODERN METALS BUILDING 022
SHARP'S FURNITURE BUILDING 06
BOILER ROOM Building 014
LOADING DOCK
Building 023
Building 019
Building 021
Building 024
Building 02
Building 01
Building 03
Building 015
Building 016
Building 017
Building 05
Building 04
Existing Building
EXISTING BUILDING
AREA 1
AREA 2
AREA 3
AREA 4
AREA 5
AREA 6
AREA 7
AREA 8
AREA 9
AREA 10
AREA 11
AREA 12
AREA 13
AREA 14
AREA 15
AREA 16
AREA 17
AREA 18
AREA 19
AREA 20
AREA 21
AREA 22
AREA 23
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
BEC-14S
BEC-14SD
BEC-15S
BEC-16S
BEC-17S
BEC-11S
BEC-13S
BEC-18S
BEC-12S
BEC-19S
BEC-20S
RAILROAD
ONE
LEGEND
MONITORING WELL LOCATION
FENCE LINE
FIGURE 6
GROUNDWATER SAMPLES THAT EXCEEDED THE NJDEP GWQS JULY 30 & 31, 2001
BELL ENVIRONMENTAL
LAKEFRONT PROFESSIONAL CENTER
295C ROUTE 46
BUDD LAKE, NJ 07828
AMMCo
25 BELGROVE DRIVE
KEARNY
HUDSON COUNTY, NJ
96059
AUGUST 2001
1" = 141'

TABLE 1

SUMMARY OF ANALYTICAL METHODS QUALITY ASSURANCE/QUALITY CONTROL SAMPLING
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EDG01-90059-02

Bell Environmental Consultants, Inc.

Type of Sample	Matrix Type	Number of Samples	Number of Field Blanks	Number of Trip Blanks	Number of Duplicate Samples	Analytical Parameters	Sample Preservation Method	Analytical Method	Sample Container Volume
Ground Water	Aqueous	6	2	0	1	Aluminum	4°C	202.1	120 ml
		19	2	2	2	VO+10	MEOH, 4°C	624	
		2	2	0	1	Arsenic	4°C	206.2	
Soil	Soil	2	0	1	1	VO+10	MEOH, 4°C	8260	1000 ml
Product Identification	Aqueous	1	0	0	0	Product ID & Age	4°C	GC, FID, ECD	60 ml

Notes:
VO+10 - Volatile Organic Compounds with a Forward Library Search for Ten Tentatively Identified Compounds.
BN+16 - Base Neutral Compounds with a Forward Library Search for 15 Tentatively Identified Compounds.
MEOH - Methanol
HCL - Hydrochloric Acid
GC - Gas Chromatography
FID - Flame Ionization Detection
ECD - Electron Capture Detection

TABLE 2A

SUMMARY OF MONITORING WELL FIELD DATA AND PHYSICAL MEASUREMENTS
THURSDAY, JUNE 7, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Permit Number	Elevation of Top of Casing (feet)	Total Depth of Well (feet,TOC)	Depth to Product (feet, TOC)	Depth to Groundwater (feet, TOC)	Total Volume of Water in Well (G)	Depth to Top of Screen (feet,TOC)	Length of Screen (feet)
MW-1	2919723-5	?	12.78	ND	10.86	1.25	8.00	10.0
MW-3	2619725-1	15.85	20.41	ND	13.48	4.52	10.18	10.0
MW-4	2619726-0	9.41	17.49	ND	7.39	6.59	6.89	10.0
MW-5	2619727-8	14.58	*	*	*	*	11.00	10.0
MW-6	2619728-6	17.61	22.83	ND	14.19	5.64	12.47	10.0
MW-7	260511-4	22.92	**	10.88	**	**	25.30	10.0
MW-8	26-24964	12.86	17.56	ND	10.51	4.60	7.71	10.0
MW-9	****	11.80	15.04	ND	9.72	3.47	6.20	10.0
MW-10	****	20.71	25.03	ND	15.38	6.30	4.51	10.0
BEC-11S	26-32146	10.77	14.49	ND	8.38	3.99	5.00	10.0
BEC-12S	26-36701	***	19.12	ND	10.34	5.73	4.20	15.0
BEC-14S	26-60971	***	15.37	ND	7.83	4.92	5.00	10.0
BEC-15S	26-59941	***	13.88	ND	7.68	4.05	5.00	10.0
BEC-16S	26-59942	***	17.60	ND	10.57	4.59	8.00	10.0
BEC-17S	26-59943	***	17.88	ND	11.23	4.34	8.50	10.0
BEC-18S	26-60970	***	16.52	ND	10.39	4.00	7.00	10.0
BEC-1D	26-59939	***	39.05	ND	9.60	19.22	30.00	10.0

Notes: TOC - Top of Casing; MSL - Mean Sea Level
G - Gallons

* - Could not access; well covered with debris
** - Product in well too thick, accurate DTP or DTW not feasible
*** - Survey data for newly installed monitoring wells not yet obtained
**** - Well certification forms A & B never provided; wells installed by Killam Associates

TABLE 2A

SUMMARY OF MONITORING WELL PHYSICAL DATA AND RESULTS OF FIELD MEASUREMENTS
THURSDAY, JUNE 7, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Pre-Purge pH (Standard Units)	Pre-Purge Temperature (^{0}C)	Pre-Purge Conductivity (mS/cm)	Pre-Purge Dissolved Oxygen (mg/l)	Post-Purge pH (Standard Units)	Post-Purge Temperature (^{0}C)	Post-Purge Conductivity (mS/cm)	Post-Purge Dissolved Oxygen (mg/l)
MW-1	6.70	15.20	0.95	1.90	6.49	14.70	0.95	0.98
MW-4	6.12	13.30	1.03	4.55	5.60	12.20	1.71	2.01
MW-8	5.58	16.00	1.00	2.39	6.20	16.00	0.76	5.83
MW-9	6.12	15.00	0.92	1.54	6.18	14.40	1.04	0.03
BEC-11S	7.21	18.20	1.48	1.33	6.18	16.40	1.46	0.36
BEC-12S	6.76	14.60	0.99	0.26	6.64	14.40	0.98	3.37
BEC-14S	6.88	15.70	0.58	3.51	6.63	15.60	0.81	3.17
BEC-15S	6.84	15.60	1.05	0.03	*	*	*	*
BEC-16S	7.24	16.30	0.78	1.65	6.90	15.00	0.94	3.46
BEC-17S	8.64	18.10	1.21	0.53	7.12	17.70	1.18	0.85
BEC-18S	6.92	14.50	0.84	0.26	6.95	13.60	0.74	1.11
BEC-1D	7.24	19.60	1.60	0.00	7.18	17.40	2.06	0.55

Notes: mg/l - milligrams per liter; ^{0}C - degrees celsius; mS/cm - millisemens per centimeter
* - Well Purged Dry

TABLE 2A

SUMMARY OF MONITORING WELL PHYSICAL DATA AND RESULTS OF FIELD MEASUREMENTS
THURSDAY, JUNE 7, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Post-Sampling pH (Standard Units)	Post-Sampling Temperature (^{0}C)	Post-Sampling Conductivity (mS/cm)	Post-Sampling Dissolved Oxygen (mg/l)	Depth to Groundwater, (feet, TOC)
MW-1	6.38	14.40	0.99	2.16	10.81
MW-4	5.78	12.60	1.88	2.01	10.14
MW-8	6.88	16.50	0.78	1.04	10.59
MW-9	6.52	15.70	0.98	2.03	9.89
BEC-11S	6.21	16.30	1.46	11.35	9.68
BEC-12S	6.51	13.90	0.98	0.44	10.33
BEC-14S	6.49	15.30	0.88	3.39	7.84
BEC-15S	6.65	15.80	0.98	-0.01	12.89
BEC-16S	7.17	14.90	0.94	3.79	16.13
BEC-17S	6.80	17.70	1.17	2.07	13.54
BEC-18S	6.88	13.90	0.77	3.23	10.30
BEC-1D	6.93	17.50	2.10	0.73	8.77

Notes: mg/l - milligrams per liter; ^{0}C - degrees celsius
mS/cm - millisemens per centimeter
TOC - Top of Casing

TABLE 2A

SUMMARY OF MONITORING WELL PHYSICAL DATA AND RESULTS OF FIELD MEASUREMENTS
THURSDAY, JUNE 7, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Purge Start Time	Purge Finish Time	Purge Method	Purge Rate (gpm)	Total Volume Purged (Gallons)	Sample Date	Sample Start Time	Sample Method
MW-1	14:35	14:39	Whale Pump	1.13	4.5	06/07/2001	14:47	Teflon Bailer
MW-4	17:30	18:30	Peristaltic Pump	0.08	5	06/07/2001	18:35	Peristaltic Pump
MW-8	9:42	9:54	Whale Pump	1.17	14	06/07/2001	10:03	Teflon Bailer
MW-9	10:32	11:40	Peristaltic/Whale Pump	0.23	11.25	06/07/2001	11:10/11:40***	Peristaltic Pump*
BEC-11S	13:04	14:16	Peristaltic Pump	0.17	12	06/07/2001	14:20	Peristaltic Pump
BEC-12S	15:15	15:28	Whale Pump	1.46	17.5	06/07/2001	15:35	Teflon Bailer
BEC-14S	16:14	16:23	Whale Pump	1.67	15	06/07/2001	16:28	Teflon Bailer
BEC-15S	17:26	17:30	Whale Pump	1.25	5	06/07/2001	17:35	Teflon Bailer
BEC-16S	15:06	15:25	Whale Pump	0.79	15	06/07/2001	15:25	Teflon Bailer
BEC-17S	16:20	16:33	Whale Pump	**	**	06/07/2001	16:35	Teflon Bailer
BEC-18S	10:39	10:48	Whale Pump	1.33	12	06/07/2001	10:57	Teflon Bailer
BEC-1D	12:50	13:50	Whale Pump	0.96	57.5	06/07/2001	14:04	Teflon Bailer

Notes: gpm - gallons per minute
* - Teflon Bailer used to collect VO Sample
**- Inadvertantly omitted during sampling
***- Metals sample collected at 11:10; volatile organic sample collected at 11:40 due to groundwater which needed to be purged

TABLE 2B

SUMMARY OF MONITORING WELL FIELD DATA AND PHYSICAL MEASUREMENTS
MONDAY & TUESDAY, JULY 30 & 31, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Permit Number	Elevation of Top of Casing (feet)	Total Depth of Well (feet,TOC)	Depth to Product (feet, TOC)	Depth to Groundwater (feet, TOC)	Total Volume of Water in Well (G)	Depth to Top of Screen (feet,TOC)	Length of Screen (feet)
MW-1	2919723-5	?	17.89	ND	11.09	4.44	8.00	10.0
MW-3	2619725-1	15.85	20.30	ND	13.79	4.25	10.18	10.0
MW-4	2619726-0	9.41	17.36	ND	7.87	6.20	6.89	10.0
MW-5	2619727-8	14.58	*	*	*	*	11.00	10.0
MW-6	2619728-6	17.61	22.77	ND	14.27	5.55	12.47	10.0
MW-7	260511-4	22.92	**	**	**	**	25.30	10.0
MW-8	26-24964	12.86	17.51	ND	10.71	4.44	7.71	10.0
MW-9	****	11.80	15.19	ND	9.90	3.45	6.20	10.0
MW-10	****	20.71	25.03	ND	15.74	6.06	4.51	10.0
BEC-11S	26-32146	10.77	14.58	ND	8.70	3.84	5.00	10.0
BEC-12S	26-36701	***	19.50	ND	10.58	5.62	4.20	15.0
BEC-13S	26-61922	***	16.32	10.20	10.39	3.87	6.00	10.0
BEC-14S	26-60971	***	15.25	ND	8.05	4.70	5.00	10.0
BEC-15S	26-59941	***	14.56	ND	7.91	4.34	5.00	10.0
BEC-16S	26-59942	***	17.51	ND	10.79	4.39	8.00	10.0
BEC-17S	26-59943	***	18.01	ND	11.54	4.22	8.50	10.0
BEC-18S	26-60970	***	16.49	ND	10.61	3.84	7.00	10.0
BEC-1D	26-59939	***	40.70	ND	9.83	20.15	30.00	10.0

Notes: TOC - Top of Casing; MSL - Mean Sea Level
G - Gallons

* - Could not access; well covered with debris
** - Product in well too thick, accurate DTP or DTW not feasible
*** - Survey data for newly installed monitoring wells not yet obtained
**** - Well certification forms A & B never provided; wells installed by Killam Associates

TABLE 2B

SUMMARY OF MONITORING WELL PHYSICAL DATA AND RESULTS OF FIELD MEASUREMENTS
MONDAY & TUESDAY, JULY 30 & 31, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Pre-Purge pH (Standard Units)	Pre-Purge Temperature (^{0}C)	Pre-Purge Conductivity (mS/cm)	Pre-Purge Dissolved Oxygen (mg/l)	Post-Purge pH (Standard Units)	Post-Purge Temperature (^{0}C)	Post-Purge Conductivity (mS/cm)	Post-Purge Dissolved Oxygen (mg/l)
MW-1	6.47	16.50	0.79	-50.00	**	**	**	**
MW-4	6.46	15.70	4.26	11.76	6.52	15.80	3.01	12.10
MW-8	6.83	16.50	0.61	1.42	6.28	16.80	0.60	1.36
MW-9	6.47	16.20	0.98	10.00	6.63	16.30	1.01	9.60
BEC-11S	6.72	19.40	1.55	8.64	6.63	16.80	1.36	6.71
BEC-12S	6.56	15.70	0.93	2.93	6.58	15.70	0.96	3.44
BEC-14S	6.77	17.90	1.06	-0.02	6.59	17.30	0.96	-1.02
BEC-15S	6.83	16.20	0.99	-0.80	*	*	*	*
BEC-16S	6.24	17.20	1.11	0.06	*	*	*	*
BEC-17S	6.88	19.70	1.16	1.25	6.65	19.30	1.18	1.15
BEC-18S	7.55	15.10	0.62	2.70	6.86	15.00	0.72	4.14
BEC-1D	7.14	16.10	2.16	2.89	7.15	16.20	2.07	2.92

Notes: mg/l - milligrams per liter; ^{0}C - degrees celsius; mS/cm - millisemens per centimeter
* - Well Purged Dry
** - Sheen on ground water - no readings collected to prevent damage to equipment

TABLE 2B

SUMMARY OF MONITORING WELL PHYSICAL DATA AND RESULTS OF FIELD MEASUREMENTS
MONDAY & TUESDAY, JULY 30 & 31, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Post-Sampling pH (Standard Units)	Post-Sampling Temperature (^{0}C)	Post-Sampling Conductivity (mS/cm)	Post-Sampling Dissolved Oxygen (mg/l)	Depth to Groundwater, (feet, TOC)
MW-1	**	**	**	**	11.65
MW-4	6.23	15.90	3.17	19.99	7.96
MW-8	6.27	18.70	0.62	1.83	11.12
MW-9	6.31	18.90	0.91	11.37	9.92
BEC-11S	6.54	19.20	1.36	19.99	8.66
BEC-12S	6.53	15.60	0.97	2.94	*
BEC-14S	6.57	17.30	0.97	-0.97	15.18
BEC-15S	6.69	18.10	0.94	-0.04	*
BEC-16S	6.37	17.00	1.05	0.81	16.26
BEC-17S	6.60	19.10	0.90	-0.89	11.75
BEC-18S	6.75	15.00	0.83	3.18	*
BEC-1D	6.95	15.50	2.12	2.96	*

Notes: mg/l - milligrams per liter; ^{0}C - degrees celsius
mS/cm - millisemens per centimeter
* - Inadvertently omitted
** - Sheen on ground water - no readings collected to prevent damage to Non-Bell equipment

TABLE 2B

SUMMARY OF MONITORING WELL PHYSICAL DATA AND RESULTS OF FIELD MEASUREMENTS
MONDAY & TUESDAY, JULY 30 & 31, 2001 SAMPLING EPISODE
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Purge Start Time	Purge Finish Time	Purge Method	Purge Rate (gpm)	Total Volume Purged (Gallons)	Sample Date	Sample Start Time	Sample Method
MW-1	13:47	13:57	Whale Pump	1.70	17	07/30/2001	14:00	Teflon Bailer
MW-4	13:30	14:42	Peristaltic Pump	0.14	10	07/31/2001	14:45	Peristaltic Pump
MW-8	14:50	15:00	Whale Pump	1.50	15	07/30/2001	15:15	Teflon Bailer
MW-9	9:00	10:40	Peristaltic Pump	0.13	13	07/31/2001	10:45	Peristaltic Pump*
BEC-11S	11:34	12:37	Peristaltic Pump	0.11	7	07/31/2001	12:40	Peristaltic Pump
BEC-12S	13:42	13:57	Whale Pump	1.50	22.5	07/30/2001	14:00	Teflon Bailer
BEC-14S	14:17	14:25	Whale Pump	2.00	16.5	07/31/2001	14:25	Teflon Bailer
BEC-15S	13:19	13:35	Whale Pump	1.00	16	07/31/2001	13:45	Teflon Bailer
BEC-16S	13:00	13:07	Whale Pump	1.10	8	07/30/2001	13:10	Teflon Bailer
BEC-17S	16:03	16:12	Whale Pump	1.67	15	07/30/2001	16:15	Teflon Bailer
BEC-18S	12:31	12:46	Whale Pump	1.00	15	07/30/2001	12:55	Teflon Bailer
BEC-1D	14:40	15:45	Whale Pump	1.00	65	07/30/2001	15:55	Teflon Bailer

Notes: gpm - gallons per minute
* - Teflon Bailer used to collect VO Sample

TABLE 2C

SUMMARY OF MONITORING WELL FIELD DATA AND PHYSICAL MEASUREMENTS
MONDAY, AUGUST 13, 2001 WATER LEVEL READINGS
AMERICAN MODERN METALS CORPORATION
KEARNY, HUDSON COUNTY, NEW JERSEY

Location	Permit Number	Elevation of Top of Casing (feet)	Depth to Product (feet, TOC)	Total Depth of Well (feet,TOC)	Depth to Groundwater (feet, TOC)	Total Volume of Water in Well (G)	Depth to Top of Screen (feet,TOC)	Length of Screen (feet)
MW-1	2919723-5	?	ND	17.89	9.90	5.22	8.0	10.0
MW-3	2619725-1	15.85	ND	20.30	13.71	4.30	10.2	10.0
MW-4	2619726-0	9.41	ND	17.36	8.57	5.74	6.9	10.0
MW-5	2619727-8	14.58	*	*	*	*	11.0	10.0
MW-6	2619728-6	17.61	14.32	22.77	14.32	5.52	12.5	10.0
MW-7	26-0511-4	22.92	11.35	**	11.37	**	25.3	10.0
MW-8	26-24964	12.86	10.54	17.51	10.54	4.55	7.7	10.0
MW-9	****	11.80	9.90	15.19	9.90	3.45	6.2	10.0
MW-10	****	20.71	ND	25.03	15.87	5.98	4.5	10.0
BEC-11S	26-32146	10.77	*****	*****	*****	*****	5.0	10.0
BEC-12S	26-36701	***	ND	19.50	10.55	5.84	4.20	15.0
BEC-13S	26-61922	***	10.15	16.32	10.21	3.99	6.0	10.0
BEC-14S	26-60971	***	ND	15.25	8.03	4.71	5.0	10.0
BEC-15S	26-59941	***	ND	14.56	7.88	4.36	5.0	10.0
BEC-16S	26-59942	***	ND	17.51	10.74	4.42	8.0	10.0
BEC-17S	26-59943	***	ND	18.01	11.52	4.24	8.5	10.0
BEC-18S	26-60970	***	ND	16.49	10.56	3.87	7.0	10.0
BEC-1D	26-59939	***	ND	40.7	11.04	19.36	30.0	10.0

Notes: TOC - Top of Casing; MSL - Mean Sea Level
G - Gallons

* - Could not access; well covered with debris
** - Product in well too thick, accurate Total Depth of Well not feasible
*** - Survey data for newly installed monitoring wells not yet obtained
**** - Well certification forms A & B never provided; wells installed by Killam Associates
***** - Well underwater

TABLE 3
GROUND WATER SAMPLING RESULTS SUMMARY - JUNE 7, 2001
AMERICAN MODERN METALS
KEARNY, ESSEX COUNTY, NEW JERSEY

Sample Designation:	MW-1			MW-4			MW-4 (dup)			MW-8			MW-8 (dup)			MW-9			Class II a Ground Water Quality Standards
BELL Sample Number:	2101			2004			2104			2008			2108			2009			
Lab ID:	2586-1			2586-2			2586-3			2586-4			2586-6			2586-5			
Sample Date:	06/07/2001			06/07/2001			06/07/2001			06/07/2001			06/07/2001			06/07/2001			
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	(ug/l)
VOLATILE ORGANIC COMPOUNDS (ug/l)																			
Dilution Factor:		1									1			1			1		
Targeted VOCs Detected:																			
Benzene	1	ND			NA			NA		1	ND		1	ND		1	84		1
2-Butanone	1	ND			NA			NA		1	ND		1	ND		1	ND		*****
Chloroform	1	ND			NA			NA		1	ND		1	28		1	20		6
Dibromochloromethane	1	ND			NA			NA		1	ND		1	ND		1	ND		10
1,1-Dichloroethane	1	ND			NA			NA		1	ND		1	ND		1	ND		50
cis-1,2-Dichloroethene	1	2			NA			NA		1	ND		1	ND		1	0.7	J	70
trans-1,2-Dichloroethene	1	ND			NA			NA		1	ND		1	ND		1	ND		100
Ethylbenzene	1	ND			NA			NA		1	ND		1	ND		1	2		700
Methylene Chloride	1	ND			NA			NA		1	ND		1	1.2		1	ND		3
Naphthalene	1	ND			NA			NA		1	ND		1	ND		1	8		300
1,1,2,2-Tetrachloroethane	1	ND			NA			NA		1	ND		1	ND		1	0.1	J	1
Tetrachloroethene (PCE)	1	ND			NA			NA		1	ND		1	ND		1	ND		1
Toluene	1	ND			NA			NA		1	ND		1	ND		1	7		1,000
Trichloroethene	1	3			NA			NA		1	ND		1	ND		1	ND		1
Trichlorofluoromethane	5	ND			NA			NA		5	ND		5	ND		5	ND		*****
Vinyl Chloride	3	ND			NA			NA		3	ND		3	ND		3	ND		5
Total Xylenes	1	ND			NA			NA		1	ND		1	ND		1	6		1,000
Methyl tert-butyl-Alcohol	1	ND			NA			NA		1	ND		1	ND		1	ND		70
Tert-butyl Alcohol (TBA)	1	ND			NA			NA		1	ND		1	ND		1	ND		1,000
Tert-butyl Benzene	1	0.6	J		NA			NA		1	ND		1	ND		1	ND		*****
Total Targeted VOCs		5			NA			NA			ND			21.2			109.8		--
Total Non-Targeted VOCs		ND			NA			NA			ND			ND			338		--
METALS (ug/l)																			
Targeted Metals Detected:																			
Aluminum		NA		10.0	<10	J	10.0	<10	J		NA			NA		10.0	<10	J	200
Arsenic		NA		8.0	<8	J	8.0	<8	J		NA			NA			NA		8

Notes:

ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier, B = Analyte found in the blank as well as the sample.
NA = Not Analyzed, J = Estimated value - compound detected below the specified detection limit, ***** = No GWQS established for this compound.
Refer to Appendix 7 for the full analytical report (bound separately).

TABLE 3
GROUND WATER SAMPLING RESULTS SUMMARY - JUNE 7, 2001
AMERICAN MODERN METALS
KEARNY, ESSEX COUNTY, NEW JERSEY

Sample Designation:	BEC-11S			BEC-12S			BEC-14S			BEC-15S			BEC-16S			BEC-17S			Class II a Ground Water Quality Standards
BELL Sample Number:	2011			2012			2014			2015			2016			2017			
Lab ID:	2586-7			2586-8			2586-9			2586-10			2586-11			2586-12			
Sample Date:	06/07/2001			06/07/2001			06/07/2001			06/07/2001			06/07/2001			06/07/2001			
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	(ug/l)
VOLATILE ORGANIC COMPOUNDS (ug/l)																			
Dilution Factor:					1			1			1			1			1		--
Targeted VOCs Detected:																			
Benzene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1
2-Butanone		NA		1	0.8	J	1	14		1	ND		1	ND		1	ND		*****
Chloroform		NA		1	6		1	ND		1	ND		1	ND		1	23		6
Dibromochloromethane		NA		1	4		1	ND		1	ND		1	2		1	0.07	J	10
1,1-Dichloroethane		NA		1	0.1	J	1	ND		1	0.3	J	1	0.3	J	1	ND		50
1,2-Dichloroethane		NA		1	ND		1	ND		1	ND		1	ND		1	ND		2
1,1-Dichloroethene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		2
cis-1,2-Dichloroethene		NA		1	669		1	ND		1	ND		1	36		1	ND		70
trans-1,2-Dichloroethene		NA		1	15		1	ND		1	ND		1	ND		1	ND		100
Ethylbenzene		NA		1	ND		1	0.4		1	ND		1	ND		1	ND		700
Methylene Chloride		NA		1	ND		1	1	J	1	ND		1	ND		1	ND		3
Naphthalene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		300
1,1,2,2-Tetrachloroethane		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1
Tetrachloroethene (PCE)		NA		1	2		1	ND		1	ND		1	0.3	J	1	ND		1
Toluene		NA		1	ND		1	5		1	ND		1	ND		1	ND		1,000
Trichloroethene		NA		1	ND		1	ND		1	ND		1	35		1	ND		1
Trichlorofluoromethane		NA		5	ND		5	ND		5	ND		5	ND		5	0.2	J	*****
Vinyl Chloride		NA		3	ND		3	ND		3	ND		3	ND		3	ND		5
Total Xylenes		NA		1	ND		1	2.7		1	ND		1	ND		1	ND		1,000
Methyl tert-butyl-Alcohol		NA		1	ND		1	ND		1	ND		1	2		1	ND		70
Tert-butyl Alcohol (TBA)		NA		1	ND		1	3		1	ND		1	ND		1	ND		1,000
Tert-butyl benzene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		*****
Total Targeted VOCs		NA			716.9			23.1			0.3			123.8			23.27		--
Total Non-Targeted VOCs		NA			134.41			ND			ND			ND			0.2		--
METALS (ug/l)																			
Targeted Metals Detected:																			
Aluminum	10.0	<10	J		NA			NA			NA			NA			NA		200
Arsenic		NA			NA			NA			NA			NA			NA		8

Notes:

ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier, B = Analyte found in the blank as well as the sample.
NA = Not Analyzed, J = Estimated value - compound detected below the specified detection limit, ***** = No GWQS established for this compound.
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TABLE 3
GROUND WATER SAMPLING RESULTS SUMMARY - JUNE 7, 2001
AMERICAN MODERN METALS
KEARNY, ESSEX COUNTY, NEW JERSEY

Sample Designation:	BEC-18S			BEC-1D			Field Blank			Trip Blank			Class II a Ground Water Quality Standards
BELL Sample Number:	2018			2001			1001			1002			
Lab ID:	2586-13			2586-14			2586-15			2586-16			
Sample Date:	06/07/2001			06/07/2001			06/07/2001			06/07/2001			
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	(ug/l)
VOLATILE ORGANIC COMPOUNDS (ug/l)													
Dilution Factor:		1			1			1			1		–
Targeted VOCs Detected:													
Benzene	1	ND		1	ND		1	ND		1	ND		1
2-Butanone	1	2.3		1	3		1	ND		1	ND		*****
Chloroform	1	1		1	ND		1	ND		1	ND		6
Dibromochloromethane	1	1		1	ND		1	ND		1	ND		10
1,1-Dichloroethane	1	1		1	0.2	J	1	ND		1	ND		50
cis-1,2-Dichloroethene	1	105		1	6.8		1	ND		1	ND		70
trans-1,2-Dichloroethene	1	1.2		1	ND		1	ND		1	ND		100
Ethylbenzene	1	ND		1	ND		1	ND		1	ND		700
Methylene Chloride	1	ND		1	ND		1	ND		1	ND		3
Naphthalene	1	ND		1	ND		1	ND		1	ND		300
1,1,2,2-Tetrachloroethane	1	ND		1	ND		1	ND		1	ND		1
Tetrachloroethene (PCE)	1	1		1	ND		1	ND		1	ND		1
Toluene	1	ND		1	ND		1	ND		1	ND		1,000
Trichloroethene	1	201		1	25		1	ND		1	ND		1
Trichlorofluoromethane	5	ND		5	ND		5	ND		5	ND		*****
Vinyl Chloride	3	2	J	3	ND		3	ND		3	ND		5
Total Xylenes	1	ND		1	ND		1	ND		1	ND		1,000
Methyl tert-butyl-Alcohol	1	ND		1	ND		1	ND		1	ND		70
Tert-butyl Alcohol (TBA)	1	ND		1	ND		1	ND		1	ND		1,000
Tert-butyl benzene	1	ND		1	ND		1	ND		1	ND		*****
Total Targeted VOCs		315.5			35			ND			ND		--
Total Non-Targeted VOCs		ND			1.21			ND			ND		--
METALS (ug/l)													
Targeted Metals Detected:													
Aluminum		NA			NA		10	<10	J		NA		200
Arsenic		NA			NA		8	<8	J		NA		8

Notes:

ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier, B = Analyte found in the blank as well as the sample.
NA = Not Analyzed, J = Estimated value - compound detected below the specified detection limit, ***** = No GWQS established for this compound.
Refer to Appendix ? for the full analytical report (bound separately).

TABLE 4
GROUND WATER SAMPLING RESULTS SUMMARY - JULY 30 & 31, 2001
AMERICAN MODERN METALS
KEARNY, ESSEX COUNTY, NEW JERSEY

Sample Designation:	MW-1			MW-4			MW-8			MW-8 (dup)			MW-9			Class II a Ground Water Quality Standards (GWQS)
BELL Sample Number:	2001			2004			2008			2108			2009			
Lab ID:	2762-3			2762-13			2762-5			2762-8			2762-11			
Sample Date:	07/30/2001			07/31/2001			07/30/2001			07/30/2001			07/31/2001			
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	
VOLATILE ORGANIC COMPOUNDS (ug/l)																
Dilution Factor:		1						1			1			1		--
Targeted VOCs Detected:																
Benzene	*1*	ND			NA		*1*	ND		*1*	ND		*1*	1		1
Bromodichloromethane	*1*	ND			NA		*1*	13		*1*	ND		*1*	ND		1
2-Butanone	*1*	1			NA		*1*	ND		*1*	2		*1*	ND		300
Chloroform	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		6
Dibromochloromethane	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		10
1,1-Dichloroethane	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		50
cis-1,2-Dichloroethene	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		70
trans-1,2-Dichloroethene	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		100
1,2-Dichloropropane	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		1
Ethylbenzene	*1*	ND			NA		*1*	ND		*1*	ND		*1*	0.2	J	700
Methylene Chloride	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		3
Tetrachloroethene (PCE)	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		1
Toluene	*1*	ND			NA		*1*	0.7	J	*1*	ND		*1*	ND		1,000
Trichloroethene	*1*	ND			NA		*1*	ND		*1*	ND		*1*	ND		1
Trichloroflouromethane	*5*	ND			NA		*5*	ND		*5*	ND		*5*	ND		*****
Vinyl Chloride	*3*	ND			NA		*3*	ND		*3*	ND		*3*	ND		5
Total Xylenes	*1*	ND			NA		*1*	ND		*1*	ND		*1*	3.7		1,000
Total Targeted VOCs		1			NA			13.7			2			4.9		--
Total Non-Targeted VOCs		14.31			NA			2.59			ND			305.54		--
METALS (ug/l)																
Targeted Metals Detected:																
Aluminum		NA		*10.0*	<10	J		NA			NA		*10.0*	<10	J	200
Arsenic		NA		*8.0*	<8	J		NA			NA			NA		8

Notes:

ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier, B = Analyte found in the blank as well as the sample.
NA = Not Analyzed, J = Estimated value - compound detected below the specified detection limit, ***** = No GWQS established for this compound.
Refer to Appendix ? for the full analytical report (bound separately).

TABLE 4
GROUND WATER SAMPLING RESULTS SUMMARY - JULY 30 & 31, 2001
AMERICAN MODERN METALS
KEARNY, ESSEX COUNTY, NEW JERSEY

Sample Designation:	BEC-11S			BEC-12S			BEC-14S			BEC-15S			BEC-16S			BEC-17S			Class II a Ground Wat Quality Standards (GWQS)
BELL Sample Number:	2011			2012			2014			2015			2016			2017			
Lab ID:	2762-12			2762-2			2762-15			2762-14			2762-6			2762-7			
Sample Date:	07/31/2001			07/30/2001			07/31/2001			07/31/2001			07/30/2001			07/30/2001			
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	
VOLATILE ORGANIC COMPOUNDS (ug/l)																			
Dilution Factor:					1			1			1			1			1		--
Targeted VOCs Detected:																			
Benzene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1
Bromodichloromethane		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1
2-Butanone		NA		1	ND		1	ND		1	ND		1	1		1	2		300
Chloroform		NA		1	ND		1	ND		1	ND		1	ND		1	ND		6
Dibromochloromethane		NA		1	6		1	0.3	J	1	ND		1	2		1	ND		10
1,1-Dichloroethane		NA		1	ND		1	13		1	ND		1	ND		1	ND		50
cis-1,2-Dichloroethene		NA		1	826		1	232		1	ND		1	19		1	ND		70
trans-1,2-Dichloroethene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		100
1,2-Dichloropropane		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1
Ethylbenzene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		700
Methylene Chloride		NA		1	ND		1	ND		1	ND		1	ND		1	ND		3
Tetrachloroethene (PCE)		NA		1	3		1	ND		1	ND		1	1		1	ND		1
Toluene		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1,000
Trichloroethene		NA		1	191		1	142		1	ND		1	197		1	ND		1
Trichloroflouromethane		NA		5	0.3	J	5	ND		5	ND		5	ND		5	ND		--
Vinyl Chloride		NA		3	16		3	ND		3	ND		3	ND		3	ND		5
Total Xylenes		NA		1	ND		1	ND		1	ND		1	ND		1	ND		1,000
Total Targeted VOCs		NA			1044.3			387.3			ND			130			2		--
Total Non-Targeted VOCs		NA			ND			94.32			2.51			ND			ND		--
METALS (ug/l)																			
Targeted Metals Detected:																			
Aluminum	10.0	<10	J		NA			NA			NA			NA			NA		200
Arsenic		NA			NA			NA			NA			NA			NA		8

Notes:

ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier, B = Analyte found in the blank as well as the sample.
NA = Not Analyzed, J = Estimated value - compound detected below the specified detection limit, ***** = No GWQS established for this compound.
Refer to Appendix 7 for the full analytical report (bound separately).

TABLE 4
GROUND WATER SAMPLING RESULTS SUMMARY - JULY 30 & 31, 2001
AMERICAN MODERN METALS
KEARNY, ESSEX COUNTY, NEW JERSEY

Sample Designation:	BEC-18S			BEC-1D			Field Blank			Trip Blank			Class II a Ground Water Quality Standards (GWQS)
BELL Sample Number:	2018			2101			1001			1002			
Lab ID:	2762-1			2762-4			2762-9			2762-15			
Sample Date:	07/30/2001			07/30/2001			07/30/2001			07/30/2001			
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	
VOLATILE ORGANIC COMPOUNDS (ug/l)													
Dilution Factor:		1			1			1			1		--
Targeted VOCs Detected:													
Benzene	1	ND		1	ND		1	ND		1	ND		1
Bromodichloromethane	1	ND		1	4		1	ND		1	ND		1
2-Butanone	1	ND		1	6		1	ND		1	ND		300
Chloroform	1	ND		1	22		1	ND		1	ND		6
Dibromochloromethane	1	2		1	3		1	ND		1	ND		10
1,1-Dichloroethane	1	ND		1	0.8	J	1	ND		1	ND		50
cis-1,2-Dichloroethene	1	157		1	21		1	ND		1	ND		70
trans-1,2-Dichloroethene	1	0.4	J	1	0.2	J	1	ND		1	ND		100
1,2-Dichloropropane	1	ND		1	1	J	1	ND		1	ND		1
Ethylbenzene	1	ND		1	ND		1	ND		1	ND		700
Methylene Chloride	1	ND		1	2		1	ND		1	ND		3
Tetrachloroethene (PCE)	1	0.9	J	1	0.7	J	1	ND		1	ND		1
Toluene	1	ND		1	ND		1	ND		1	ND		1,000
Trichloroethene	1	281		1	183		1	ND		1	ND		1
Trichloroflouromethane	5	ND		5	ND		5	ND		5	ND		--
Vinyl Chloride	3	ND		3	ND		3	ND		3	ND		5
Total Xylenes	1	ND		1	ND		1	ND		1	ND		1,000
Total Targeted VOCs		441.3			253.7			ND			ND		--
Total Non-Targeted VOCs		ND			ND			ND			ND		--
METALS (ug/l)													
Targeted Metals Detected:													
Aluminum		NA			NA		10.0	<10	J		NA		200
Arsenic		NA			NA		8.0	<8			NA		8

Notes:
ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier, B = Analyte found in the blank as well as the sample.
NA = Not Analyzed, J = Estimated value - compound detected below the specified detection limit, ***** = No GWQS established for this compound.
Refer to Appendix ? for the full analytical report (bound separately).

TABLE 5
CHLORINATED VOCs IN GROUND WATER (SOURCE SOILS) AOC - SOIL SAMPLE RESULTS SUMMARY
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY

Sample Designation:	SB-45			SB-46			SB-46			SB-47			SB-47			Trip Blank			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact To Ground Water Soil Cleanup Criteria
BELL Sample Number:	6003			6004			6005			6006			6106			1003					
Lab ID:	2426-5			2426-9			2426-10			2426-11			2426-12			2426-13					
Sample Depth:	11-11.5'			1-1.5'			11.5-12'			10-10.5'			10-10.5'			--					
Sample Date:	04/24/2001			04/24/2001			04/24/2001			04/24/2001			04/24/2001			04/24/2001					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS (mg/kg)																					
Dilution Factor:		112			111			89			174			115			115				
Targeted VOCs Detected:																					
Total Targeted VOCs		ND			ND			ND			ND			ND			ND		1,000	1,000	1,000
Total Non-Targeted VOCs		ND			ND			ND			ND			ND			ND		(with above)	(with above)	(with above)

Notes:

ND = Not Detected, PQL = Practical Quantitation Limit, NA = Not Analyzed, Q = Qualifier.
Refer to Appendix ? for the full analytical report (bound separately).

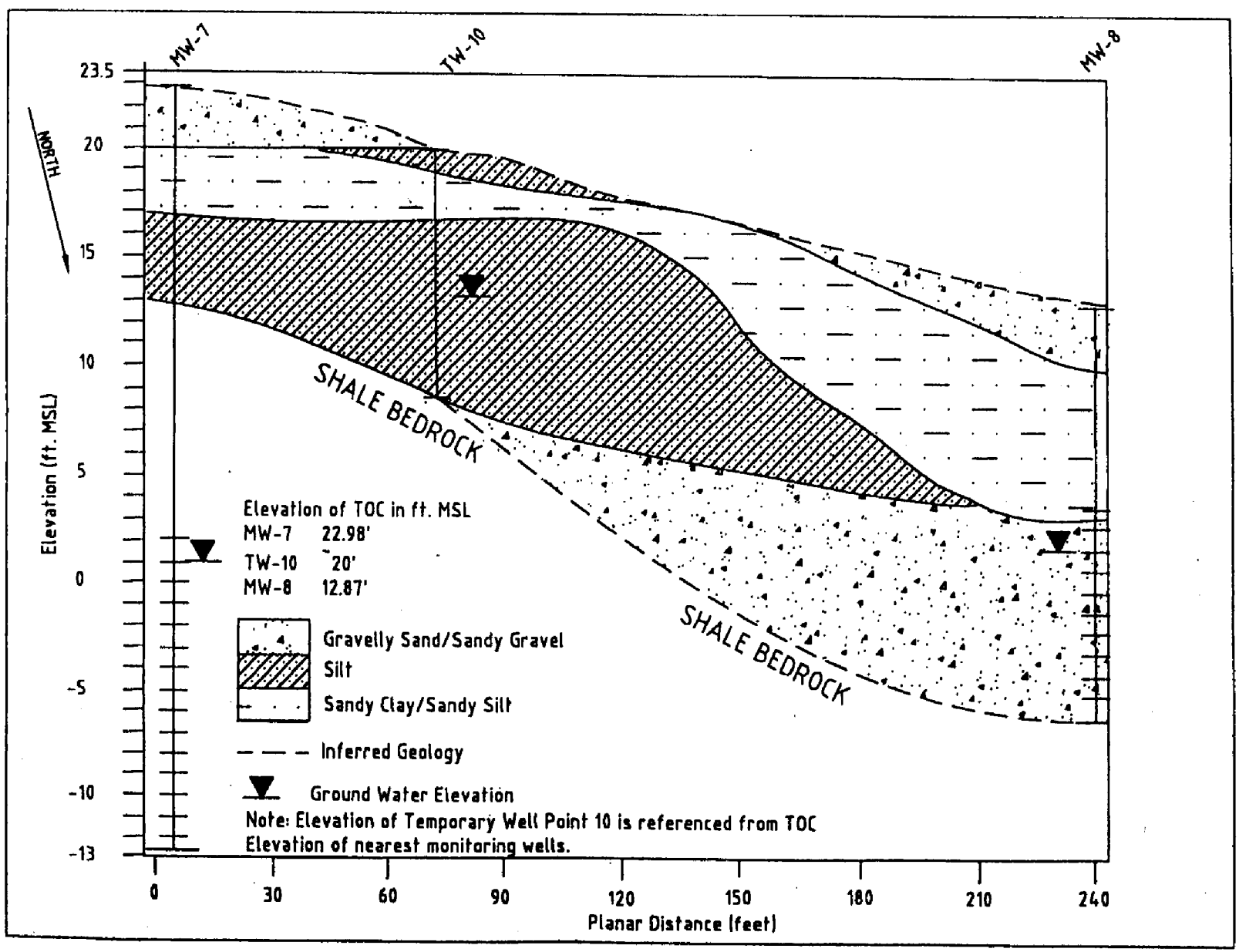
TABLE 6
SOIL SAMPLING RESULTS SUMMARY - JULY 16, 2001
AMERICAN MODERN METALS
KEARNY, HUDSON COUNTY, NEW JERSEY

Sample Designation:	SB-48			SB-48			SB-49			TRIP BLANK			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact To Ground Water Soil Cleanup Criteria
BELL Sample Number:	6001			6101			6002			1001					
Lab ID:	2706-1			2706-2			2706-3			2706-4					
Sample Depth (ft):	11-11.5			11-11.5			11-11.5			NA					
Sample Date:	07/16/2001			07/16/2001			07/16/2001			07/16/2001					
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	(mg/kg)	(mg/kg)	(mg/kg)
VOLATILE ORGANIC COMPOUNDS (mg/kg)															
Dilution Factor:		160			119			116							
Targeted VOCs Detected:		ND			ND			ND							
Total Targeted VOCs		ND			ND			ND			ND		1,000 (with above)	1,000 (with above)	1,000 (with above)
Total Non-Targeted VOCs		ND			ND			ND			ND				

Notes:
ND = Not Detected, MDL = Method Detection Limit, Q = Qualifier.
Refer to Appendix ? for the full analytical report (bound separately).

APPENDICES

APPENDIX A
CROSS SECTIONS



STRATIGRAPHIC CROSS SECTION

BELL ENVIRONMENTAL
LAKEFRONT
PROFESSIONAL CENTER
295C ROUTE 46
BUDD LAKE, NJ 07828

AMHC
29 BELGROVE DRIVE
KEARNY, HUDSON COUNTY,
NJ

90859-28

APPENDIX B
BORING LOGS

Job # 90059-02		Boring #: SB-48
Project: AMMCo	Location: Kearny	
Geologist: Karen Rubin	Driller: Brian Kokot	License # J0017863
Drilling Contractor: Environmental Probing Invest.		
Drilling Equipment: Hurricane		
Date Start: 07/16/01	Date Complete: 07/16/01	Completion Depth:12'
Sampler: macrocore	Hammer Weight: NA	Fall: NA
Well Casing: NA		Water: 11.0'
Screen: NA	Length: NA	Slot Size: NA
Filter Pack: NA	Interval: NA	Seal: NA
Remarks:		

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
0.4	48	NA	0.0-0.5	Brown sand with brick and concrete	
0.4			0.5-1.0		
0.4			1.0-1.5		
0.4			1.5-2.0		
0.4			2.0-2.5		
0.4			2.5-3.0		
0.4			3.0-3.5		
0.4			3.5-4.0		
0	48"	NA	4.0-4.5	Reddish brown silty sand	
0			4.5-5.0		
0			5.0-5.5		
0			5.5-6.0		
0			6.0-6.5		
0			6.5-7.0		
0			7.0-7.5		
0			7.5-8.0		
0	48"	NA	8.0-8.5	Reddish brown f.-m. sand, some brick	
0			8.5-9.0		
0			9.0-9.5		
0			9.5-10.0		
0			10.0-10.5		
0			10.5-11.0		
0			11.0-11.5		wet
0			11.5-12.0		
				End of boring at 12 feet BGS Ground water encountered at 11.0 feet BGS	

Job # 90059-02			Boring #: SB-49
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Brian Kokot		License # J0017863
Drilling Contractor: Environmental Probing Invest.			
Drilling Equipment: Hurricane			
Date Start: 07/16/01	Date Complete: 07/16/01		Completion Depth:12'
Sampler: macrocore	Hammer Weight: NA		Fall: NA
Well Casing: NA			Water: 11.5'
Screen: NA	Length: NA		Slot Size: NA
Filter Pack: NA	Interval: NA		Seal: NA
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
0	48	NA	0.0-0.5	Reddish brown f.-m. sand, some brick	
0			0.5-1.0		
0			1.0-1.5		
0			1.5-2.0		
0			2.0-2.5		
0			2.5-3.0		
0			3.0-3.5		
0			3.5-4.0		
0	48"	NA	4.0-4.5	Reddish brown f.-m. sand	
0			4.5-5.0		
0			5.0-5.5		
0			5.5-6.0		
0			6.0-6.5		
0			6.5-7.0		
0			7.0-7.5		
0			7.5-8.0		
0	48"	NA	8.0-8.5	Reddish brown f.-c. sand	
0			8.5-9.0		
0			9.0-9.5		
0			9.5-10.0		
0			10.0-10.5		
0			10.5-11.0		
0			11.0-11.5		wet
0			11.5-12.0		
				End of boring at 12 feet BGS Ground water encountered at 11.5 feet BGS	

Job #: 90059-02			Boring #: TW-10	
Project: AMMCo	Location: Kearny, NJ			
Geologist: Karen Rubin	Driller: Tom Widmeier		License #:	
Drilling Contractor: Environmental Probing Investigations				
Drilling Equipment: Dingo mobile geoprobe				
Date Start: 7-16-01	Date Complete: 7-16-01		Completion Depth: 11.2	
Sampler: 3 ft acetate core	Hammer Weight: N/A		Fall:N/A	
Well Casing: 1" PVC	Length: 2"		Water: 7.39	
Screen: 1" slotted PVC	Length: 10'		Slot Size:0.010	
Filter Pack: N/A	Interval:		Seal:	
Remarks:				

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
4.3	36"	N/A	0-0.5	Concrete	
			0.5-2	Brown Silt	
			2-3	Brown silt, trace f-m sand	
2.8	36"	N/A	3-6	Reddish Brown silt	moist
2.8	36"	N/A	6-9	Reddish Brown silt	moist to dry
0	2"	N/A	9-11	No recovery	wet
			11-11.2	Reddish Brown shale	

TW-10 completed to 11.2 feet below the floor surface
Boring backfilled with cuttings and grout to grade
Ground water encountered at 7.39 feet below the floor surface

Job # 90059-02			Boring #: BEC-13S
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Douglas E. Ulbricht		License # 0016132
Drilling Contractor: Environmental Probing Invest.			
Drilling Equipment: Hollow Stem Auger			
Date Start: 07/16/01	Date Complete: 07/16/01		Completion Depth:12'
Sampler: 2" split spoon	Hammer Weight: NA		Fall: NA
Well Casing: 4" PVC			Water: 9.0'
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #1 gravel	Interval: 5-17'		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
0	42	NA	0.0-0.5	No recovery	
185			0.5-1.0	Black silty sand	
			1.0-1.5		
153			1.5-2.0	Brown sandy silt	
			2.0-2.5		
			2.5-3.0		
			3.0-3.5		
			3.5-4.0		
143.9	48"	NA	4.0-4.5	Brown silty sand	
11.3			4.5-5.0	Reddish brown f.-m. silty sand	
4.7			5.0-5.5		
3.5			5.5-6.0	Brown f.-m. silty sand	
2.8			6.0-6.5		
2.6			6.5-7.0		
2.4			7.0-7.5		
2.8			7.5-8.0	Red sandy silt with siltstone	
308	48	NA	8.0-8.5	Brown m.sand with gravel and wood	
1.8			8.5-9.0	Reddish brown silt, some siltstone	
			9.0-9.5		
			9.5-10.0		
			10.0-10.5		
			10.5-11.0		
			11.0-11.5		
			11.5-12.0		
			12.0-16.0	No sample collected, augered	
				End of boring at 16 feet BGS Well will be set at 16' BGS Ground water encountered at 10.25' BGS Well screen set between 6-16' BGS NJDEP well permit # 26-60970	

Job # 90059-02			Boring #: BEC-14S
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Douglas Ulbricht		License # 0016132
Drilling Contractor: Environmental Probing Investigations			
Drilling Equipment: Hollow Stem Auger			
Date Start: 4/23/01	Date Complete: 4/23/01		Completion Depth: 15'
Sampler: NA	Hammer Weight: NA		Fall: NA
Well Casing: 4" PVC			Water: 8.0'
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #1 gravel	Interval: 3'-15'		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
	NA	NA	0.0-0.5	Dark brown to dark gray silt with gravel	
			0.5-1.0		
			1.0-1.5	Dark gray silt and gravel with brick	
			1.5-2.0	fragments	
			2.0-2.5		
			2.5-3.0		
			3.0-3.5		
0			3.5-4.0		
	NA	NA	4.0-4.5	Dark brown silt and gravel	
			4.5-5.0		
			5.0-5.5		
			5.5-6.0		
			6.0-6.5	Brick	
			6.5-7.0	Red-brown sandy silt	moist
			7.0-7.5	Red-brown medium sand	wet
			7.5-8.0		
	NA	NA	8.0-8.5		
			8.5-9.0		
			9.0-9.5		
			9.5-10.0		
			10.0-10.5		
			10.5-11.0		
			11.0-11.5		
			11.5-12.0		
	NA	NA	12.0-12.5		
			12.5-13.0		
			13.0-13.5		
			13.5-14.0		
			14.0-14.5		
			14.5-15.0		
				End of boring at 15 feet BGS Well will be set at 15' BGS Ground water encountered at 8' BGS Well screen set between 5-15' BGS NJDEP well permit # 26-60971	

Job # 90059-02			Boring #: BEC-15S
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Brian Quinn		License # J1495
Drilling Contractor: Horizon Environmental Drilling and Excavating			
Drilling Equipment: Hollow Stem Auger			
Date Start: 1/4/01	Date Complete: 1/4/01		Completion Depth: 15'
Sampler: 2" split spoon	Hammer Weight: 140 lb.		Fall: 30"
Well Casing: 4" PVC			Water: 7"
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #0 gravel	Interval: 3-15		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	REMARKS
OVM	Rec.	Blows	(feet)	Modified Burmister	
			0.0-0.5	Topsoil and gravel	
			0.5-1.0	No samples collected, Augered	
			1.0-1.5		
			1.5-2.0		
			2.0-2.5		
			2.5-3.0		
			3.0-3.5		
			3.5-4.0		
			4.0-4.5		
			4.5-5.0		
0	24"	2	5.0-5.5	Dark brown sandy silt, some brick fragments	
		2	5.5-6.0		
		2	6.0-6.5		
		2	6.5-7.0		
			7.0-7.5	No samples collected, Augered	
			7.5-8.0		
			8.0-8.5		
			8.5-9.0		
			9.0-9.5		
			9.5-10.0		
0	24"	2	10.0-10.5	Brown sand	moist
		2	10.5-11.0	Brown silty clay	moist
		3	11.0-11.5		
		4	11.5-12.0		
			12.0-12.5	No samples collected, Augered	
			12.5-13.0		
0	22"	29	13.0-13.5	Reddish brown sand, w/ gravel	moist to wet
		37	13.5-14.0		moist to wet
		36	14.0-14.5		
		34	14.5-15.0		
				End of boring at 15.3 feet BGS.	
				Ground water encountered at 7.0' BGS	
				Monitoring well BEC-15S set at 15' BGS	
				Well screen set between 5.3-15.3' BGS	
				NJDEP well permit # 2659941	

Job # 90059-02			Boring # BEC-16S
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Brian Quinn		License # J1495
Drilling Contractor: Horizon Environmental Drilling and Excavating			
Drilling Equipment: Hollow Stem Auger			
Date Start: January 3, 2001	Date Complete: 01/03/01		Completion Depth: 18'
Sampler: 2" split spoon	Hammer Weight: 140		Fall: 30"
Well Casing: 4" PVC			Water: 11"
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #0 gravel	Interval: 5-18'		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
			0.0-0.5	Topsoil and gravel	
			0.5-1.0	No samples collected, Augered	
			1.0-1.5		
			1.5-2.0		
			2.0-2.5		
			2.5-3.0		
			3.0-3.5		
			3.5-4.0		
			4.0-4.5		
			4.5-5.0		
0	24"	10	5.0-5.5	R. brown fine sand, little silt	
		11	5.5-6.0		
		10	6.0-6.5		
		8	6.5-7.0		
			7.0-7.5		
			7.5-8.0		
			8.0-8.5	No samples collected, Augered	
			8.5-9.0		
			9.0-9.5		
			9.5-10.0		
0	24"	17	10.0-10.5	R. brown f. sand, l. silt, tr. siltstone	
		31	10.5-11.0		
		32	11.0-11.5		
		35	11.5-12.0		
			12.0-12.5	No samples collected, Augered	
			12.5-13.0		
			13.0-13.5		
			13.5-14.0		
			14.0-14.5		
			14.5-15.0		
0	24"	12	15.0-15.5	R. brown f. sand, s. siltstone, l. silt	Moist to wet
		24	15.5-16.0		
		45	16.0-16.5		
		50	16.5-17.0		
			17.0-17.5	No samples collected, Augered	
			17.5-18.0		
			18.0-18.5		
			18.5-19.0		
0	6"	100/6	19.0-19.5	RB f silty sand (19-19.166) RB weathered siltstone (19.166-19.5)	
				End of boring at 19.5 feet BGS. Ground water encountered at 11.5' BGS Monitoring well BEC-16S set at 18' BGS Well screen set between 8-18' BGS NJDEP well permit # 2659942	

Job # 90059-02			Boring #: BEC-17S
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Brian Quinn		License # J1495
Drilling Contractor: Horizon Environmental Drilling and Excavating			
Drilling Equipment: Hollow Stem Auger			
Date Start:01/10/2001	Date Complete: 01/10/2001		Completion Depth:18.5'
Sampler: 2" split spoon	Hammer Weight: 140 lb.		Fall: 30"
Well Casing: 4" PVC			Water: 11.5'
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #0 gravel	Interval: 5-18.5'		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	REMARKS
OVM	Rec.	Blows	(feet)	Modified Burmister	
			0.0-0.5	Topsoil and gravel	
			0.5-1.0	No samples collected, Augered	
			1.0-1.5		
			1.5-2.0		
			2.0-2.5		
			2.5-3.0		
			3.0-3.5		
			3.5-4.0		
0	24"	6	4.0-4.5	Dark brown silty sand	
		6	4.5-5.0		
		6	5.0-5.5		
		6	5.5-6.0		
			6.0-6.5	No samples collected, Augered	
			6.5-7.0		
			7.0-7.5		
			7.5-8.0		
			8.0-8.5		
			8.5-9.0		
			9.0-9.5		
0	4.5"	20	9.5-10.0	Reddish brown silt	
		80/4"	10.0-10.5	Reddish brown shale	
			10.5-11.0	No samples collected, Augered	
			11.0-11.5		
			11.5-12.0		
			12.0-12.5		
			12.5-13.0		
			13.0-13.5		
			13.5-14.0		
			14.0-14.5		
			14.5-15.0		
0	24"	12	15.0-15.5	Reddish brown silt, some R.B. siltstone	
		20	15.5-16.0		
		20	16.0-16.5		
		25	16.5-17.0		
			17.0-17.5	No samples collected, Augered	
			17.5-18.0		
			18.0-18.5		
				End of boring at 18.5 feet BGS.	
				Ground water encountered at 11.5' BGS	
				Monitoring well BEC-17S set at 18.5' BGS	
				Well screen set between 8.5-18.5' BGS	
				NJDEP well permit # 2659943	

Job # 90059-02			Boring #: BEC-18S
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Douglas E. Ulbricht		License # 0016132
Drilling Contractor: Environmental Probing Invest.			
Drilling Equipment: Hollow Stem Auger			
Date Start: 04/23/01	Date Complete: 04/23/01		Completion Depth:17'
Sampler: 2" split spoon	Hammer Weight: NA		Fall: NA
Well Casing: 4" PVC			Water: 9.0'
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #1 gravel	Interval: 5-17'		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
0	48"	NA	0.0-0.5	Dark brown silt with wood	
			0.5-1.0		
			1.0-1.5		
			1.5-2.0		
			2.0-2.5	Red brick fragments	
			2.5-3.0		
			3.0-3.5	White concrete fragments	
			3.5-4.0	Brown sand	
0	48"	NA	4.0-4.5	Dark brown cinders, wood and brick	
			4.5-5.0	fragments	
			5.0-5.5	Reddish brown silt, l. fine sand	
			5.5-6.0	Reddish brown silt, l. f. sand, w/ gravel	
			6.0-6.5	Reddish brown f. sand, l. silt	
			6.5-7.0		
			7.0-7.5		
			7.5-8.0	Reddish brown f.-m. sand, l. silt	
NA	NA	NA	8.0-8.5	No sample collected, macrocore	
			8.5-9.0	crushed in sampling tube	
			9.0-9.5		
			9.5-10.0		
			10.0-10.5		
			10.5-11.0		
			11.0-11.5		
			11.5-12.0		
			12.0-12.5	Reddish brown silt w/ brick and gravel	
			12.5-13.0		
			13.0-13.5	Brown m. sand	saturated
			13.5-14.0		
			14.0-14.5		
			14.5-15.0		
			15.0-15.5	Reddish brown silty sand, w/brick and	
			15.5-16.0	concrete	
			16.0-16.5	No sample collected, augered	
			16.5-17.0		
				End of boring at 17 feet BGS	
				Ground water encountered at 9' BGS	
				Monitoring well BEC-17S set at 17' BGS	
				Well screen set between 7-10' BGS	
				NJDEP well permit # 26-60970	

Job # 90059-02			Boring #: BEC-1D
Project: AMMCo	Location: Kearny		
Geologist: Karen Rubin	Driller: Brian Quinn		License # J1495
Drilling Contractor:	Horizon Environmental Drilling and Excavating		
Drilling Equipment:	Hollow Stem Auger		
Date Start: 1/10/01	Date Complete: 1/11/01		Completion Depth: 40'
Sampler: NA	Hammer Weight: NA		Fall: NA
Well Casing: 4" PVC			Water: 12.0'
Screen: 4" 10-slot PVC	Length: 10'		Slot Size: 10-slot
Filter Pack: #1 gravel	Interval: 27-40'		Seal: Bentonite
Remarks:			

LOG OF BORING

SPLIT SPOON SAMPLES			DEPTH	SOIL DESCRIPTION	
OVM	Rec.	Blows	(feet)	Modified Burmister	REMARKS
	NA	NA	0.0-2.0	Fill materials	
			2.0-4.0		
			4.0-6.0		
			6.0-8.0	Red-brown silty sand	
			8.0-10.0		
			10.0-12.0		
			12.0-14.0		
			14.0-16.0	Red-brown silty sand, some f. gravel	wet
	NA	NA	16.0-18.0		
			18.0-20.0		
			20.0-22.0	Red-brown f.-c. sand	wet
			22.0-24.0		
			24.0-26.0	Red-brown m.-c. sand	wet
			26.0-28.0		
			28.0-30.0	Red-brown sand	wet
			30.0-32.0		
	NA	NA	32.0-34.0		
			34.0-36.0	Red-brown silty sand, f. gravel	wet
			36.0-38.0		
			38.0-40.0	Red-brown f.-c. sand	wet
				End of boring at 40 feet BGS Well will be set at 40' BGS Ground water encountered at 12' BGS Well screen set between 30-40' BGS NJDEP well permit # 26-59939	

APPENDIX C
GROUND WATER ANALYTICAL DATA

TECHNION, INC. TESTING & RESEARCH LABORATORIES
187 Washington Avenue
Nutley, New Jersey 07110

ANALYTICAL DATA REPORT

PREPARED FOR: Ammco
65 Passaic Avenue
Kearny, NJ 07032
Attn: Ivan Rosalsky

LAB ID: 2586

PROJECT: American Modern Metals

PROJECT NO.: 90059-02

DATE RECEIVED: June 8, 2001

DATE REPORTED: June 20, 2001

RELEASE OF THE DATA CONTAINED IN THIS HARD COPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR AS VERIFIED BY THE FOLLOWING SIGNATURE.

Susan Baturay, D.Sc. Ph.D.
Laboratory Director

NJDEPE #07004/NYDOH #11378/WBE #222141738/AIHA #18458

TECHNION, INC. TESTING & RESEARCH LABORATORIES

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TECHNION, INC. TESTING & RESEARCH LABORATORIES
187 Washington Avenue
Nutley, New Jersey 07110
Tel No.: (973)661-0800
Fax No.: (973)661-1817

NJDEPE No.: - 07004
WBE No.: - 222141738
AIHA No.: - 18458

ANALYTICAL REPORT

CLIENT: Ammco
CLIENT REF: Project No. 90059-02
MATERIAL: Sixteen (16) Aqueous Samples

DATE: 06/20/01
TECHNION REF: 2586
DATE RECEIVED: 06/08/01
LAB ID: 01:2586

PROJECT: American Modern Metals

ANALYSIS REQ: Volatile Organics+10, and Metals (Aluminum and Arsenic)

ANALYST: Y. Bella, Y. Yildez

The above sample(s) were received on 06/08/01 and analyzed as requested.

CERTIFICATE OF ANALYSIS

ALL TEST RESULTS ARE AS ATTACHED.

RELEASE OF THE DATA CONTAINED IN THIS HARD COPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR AS VERFIED BY THE FOLLOWING SIGNATURE.

Susan E. Baturay, DSc, PhD
Laboratory Director

SB/hew

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco

LAB ID(s): 2586

DATE: 06/20/01

PROJECT: 90059-20

CROSS REFERENCE TABLE

Sample ID	Sample Location	Lab ID
2101	MW-1	2586-1
2004	MW-4	2586-2
2104	MW-4	2586-3
2008	MW-8	2586-4
2009	MW-9	2586-5
2108	MW-8	2586-6
2011	BEC-11S	2586-7
2012	BEC-12S	2586-8
2014	BEC-14S	2586-9
2015	BEC-15S	2586-10
2016	BEC-16S	2586-11
2017	BEC-17S	2586-12
2018	BEC-18S	2586-13
2001	BEC-1D	2586-14
1001	Field Blank	2586-15
1002	Trip Blank	2586-16

9586

CHAIN OF CUSTODY RECORD
PAGE 1 OF 2

SITE NAME: AmmCo
STREET ADDRESS: 85 Passaic Ave #
PROJECT MANAGER: Karen Rubin
PROJECT NUMBER: 90059-02
CITY/STATE: Kearny NJ
LABORATORY: ~~STL~~ Technion

	SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE LOCATION	SAMPLE DEPTH	SAMPLE MATRIX	ANALYSES ①	②	③	LAB NO.	COMMENTS/ADDITIONAL ANYLSES
1	2101 2001	12/6/16	12:47	MW-1		AQ	X				①VOA+10
2	2004		6:35	MW4				X	X		②ALUMINUM
3	2104		6:35	MW4				X	X		③ARSENIC
4	2008		10:03	MW-8			X				
5	2009		11:10	MW9			X	X			BILL TO AMMCO
6	2108		10:03	MW8			X				
7	2011		2:20	BRC-115		FS	~~X~~	X			
8	2012		3:35	BRC-120			X				
9	2014		4:28	BRC-145			X				
10	2015		5:35	BRC-155			X				
11	2016		3:25	BRC-165			X				
12	2017	↓	4:35	BRC-175		↓	X				

SAMPLED BY: Karen Rubin / Frank Stoppi SIGNATURE: _____ SHIPPED BY: _____

PRESERVATIVE ADDED: TO EMPTY CONTAINERS: _____ ON SITE: _____ IN LAB: _____ PRESERVED BY: _____

TEMP (°C) AT TIME OF LAB RECEIPT: _____

SAMPLE NO.	TYPE
1000-1999	BLANKS
2000-2999	TEST WELL WATER
3000-3999	SURFACE WATER
4000-4999	POTABLE WATER
5000-5999	LEACHATE
6000-6999	SOIL & SEDIMENT
7000-7999	WASTE
8000-8999	AIR/GAS
9000-9999	OTHER

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
1) Karen	2) J. Dermody	3)	4)
TIME/DATE:	TIME/DATE:	TIME/DATE:	TIME/DATE:
RECIEVED BY:	**RECIEVED BY:**	**RECIEVED BY:**	**RECIVED BY:**
1)	2)	3)	4)
TIME/DATE:	TIME/DATE:	TIME/DATE:	TIME/DATE:

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FORM8-B1

2586

CHAIN OF CUSTODY RECORD
PAGE 2 OF 2

SITE NAME: Ammco
STREET ADDRESS: 165 Passaic Ave
PROJECT MANAGER: Karen Rubin

PROJECT NUMBER: 90059-02
CITY/STATE: Kearny, NJ
LABORATORY: Technion

	SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE LOCATION	SAMPLE DEPTH	SAMPLE MATRIX	ANALYSES ①	②	③	LAB NO.	COMMENTS/ADDITIONAL ANYLSES
13	2018	6/7/01	10:57	BEC-18S		AQ	X				①VOC+10
14	2001 2101-FR		2:04	BEC-1D			X				②ALUMINUM
15	1001		—	Fieldblank			X	X	X		③ARSENIC
16	1002		—	Triplank			X				

SAMPLED BY: Karen Rubin / Frank Stopper SIGNATURE:

SHIPPED BY:

PRESERVATIVE ADDED: TO EMPTY CONTAINERS: ON SITE: IN LAB: PRESERVED BY:

TEMP (°C) AT TIME OF LAB RECEIPT:

SAMPLE NO.	TYPE
1000-1999	BLANKS
2000-2999	TEST WELL WATER
3000-3999	SURFACE WATER
4000-4999	POTABLE WATER
5000-5999	LEACHATE
6000-6999	SOIL & SEDIMENT
7000-7999	WASTE
8000-8999	AIR/GAS
9000-9999	OTHER

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
1) TIME/DATE:	2) TIME/DATE:	3) TIME/DATE:	4) TIME/DATE:
RECIEVED BY:	**RECIEVED BY:**	**RECIEVED BY:**	**RECIVED BY:**
1) TIME/DATE:	2) TIME/DATE:	3) TIME/DATE:	4) TIME/DATE:

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco

LAB ID(s): 2586

DATE: 06/20/01

PROJECT: 90059-20

METHODOLOGY REVIEW

Parameter	EPA Method
Volatile Organics+10	624
Metals	200 Series

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: See Below

DATE RECEIVED: 06/08/01
PROJECT: 90059-02

LABORATORY CHRONICLE

LAB ID	HOLDING TIME VOA+10	HOLDING TIME Metals	DATE EXTRACTED/ DIGESTED VOA+10	DATE EXTRACTED/ DIGESTED Metals	DATE ANALYZED VOA+10	DATE ANALYZED Metals
2586-1	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-2	N/A	6 Months	N/A	06/18/01	N/A	06/21/01
2586-3	N/A	6 Months	N/A	06/18/01	N/A	06/21/01
2586-4	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-5	7/40 Days	6 Months	N/A	06/18/01	06/18/01	06/21/01
2586-6	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-7	N/A	6 Months	N/A	06/18/01	N/A	06/21/01
2586-8	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-9	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-10	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-11	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-12	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-13	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-14	7/40 Days	N/A	N/A	N/A	06/18/01	N/A
2586-15	7/40 Days	6 Months	N/A	06/18/01	06/19/01	06/21/01
2586-16	7/40 Days	N/A	N/A	N/A	06/19/01	N/A

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco LAB ID: 2586

DATE: 06/20/01 PROJECT: 90059-20

STATEMENT OF NONCONFORMANCE

All parameters are in total compliance with Volatile Organics+10 (624), Metals (200 Series), and Quality Control/ Quality Assurance Requirements.

Omar Baturay
Laboratory Manager

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TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
DATE: 06/20/01

LAB ID: 2586
PROJECT: 90059-20

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	GC/MS Tune Specifications		
	a. BFB passed	___	_X_
	b. DFTPP passed	___	_X_
2.	GC/MS Tuning Frequency - Performed every 12 hours	___	_X_
3.	GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours before sample analysis	___	_X_
4.	GC/MS Calibration Requirements		
	a. Calibration Check Compounds	___	_X_
	b. System Performance Check Compounds	___	_X_
5.	Blank Contamination - List compounds for each fraction	_X_	___
	a. VOA Fraction:		
	b. B/N Fraction:		
	c. Acid Fraction:		
6.	Surrogate Recoveries Meet Criteria (if not met; list those compounds and their recoveries which fall outside the acceptable range)	___	_X_
	a. VOA Fraction		
	b. B/N Fraction		
	c. Acid Fraction		
7.	Extraction Holding Time Met	___	_X_
	Comments:		
8.	Analysis Holding Time Met	___	_X_
	Comments:		

Additional Comments:

Laboratory Manager [signature] Date: 6/20/01

noncon

VOLATILE ORGANICS+10 ANALYSIS DATA SHEETS

WITH TICS

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-1
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-13:21
DESCRIPTION: MW-1

SAMPLE ID: 2101
LAB FILE ID: >A2269
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	2	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	3	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1
tert-butyl benzene	0.6 J	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2101
LAB ID:	2586-1	LAB FILE ID:	>A2269
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-13:21	MATRIX:	Water
DESCRIPTION:	MW-1		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-4
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-14:07
DESCRIPTION: MW-8

SAMPLE ID: 2008
LAB FILE ID: >A2270
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2008
LAB ID:	2586-4	LAB FILE ID:	>A2270
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-14:07	MATRIX:	Water
DESCRIPTION:	MW-8		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-5
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-14:58
DESCRIPTION: MW-9

SAMPLE ID: 2009
LAB FILE ID: >A2271
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	64	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	20	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	0.7 J	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	2	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	8	1 U	1
1,1,2,2-Tetrachloroethane	0.1 J	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	7	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	5	1 U	1
m,p-Xylenes	3	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2009
LAB ID:	2586-5	LAB FILE ID:	>A2271
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-14:58	MATRIX:	Water
DESCRIPTION:	MW-9		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 5

COMPOUND	RT	RESULTS
4-Isopropyl toluene	22.70	11
Isopropyl benzene	18.57	18
n-propyl benzene	19.89	29
1,3,5-trimethyl benzene	20.53	21
1,2,4-trimethyl benzene	21.71	259

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-6
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-15:44
DESCRIPTION: MW-8

SAMPLE ID: 2108
LAB FILE ID: >A2272
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	20	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1.2	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2108
LAB ID:	2586-6	LAB FILE ID:	>A2272
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-15:44	MATRIX:	Water
DESCRIPTION:	MW-8		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	**SAMPLE ID:**	2012
LAB ID:	2586-8	**LAB FILE ID:**	>A2273
PROJECT:	90059-02	**DILUTION FACTOR:**	1
DATE RECEIVED:	06/08/01	**SAMPLE VOLUME:**	5 ml
DATE EXTRACTED:	N/A	**GC COLUMN:**	DB 624
DATE ANALYZED:	06/18/01-16:31	**MATRIX:**	Water
DESCRIPTION:	BEC-12S		

(EPA Method 624) **UNITS: µg/l(ppb)**

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	0.8 J	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	6	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	4	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	0.1 J	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	15	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	689	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	2	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2012
LAB ID:	2586-8	LAB FILE ID:	>A2273
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-16:31	MATRIX:	Water
DESCRIPTION:	BEC-12S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 2

COMPOUND	RT	RESULTS
Vinyl chloride	2.85	134.31
Tert-butyl benzene	21.51	0.1

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2014
LAB ID:	2586-9	LAB FILE ID:	>A2274
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-17:38	MATRIX:	Water
DESCRIPTION:	BEC-14S		

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	14	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	0.4	1 U	1
Methylene Chloride	1	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	5	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	0.7 J	1 U	1
m,p-Xylenes	2	1 U	1
tert-butyl Alcohol	3	1 U	1

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NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2014
LAB ID:	2586-9	LAB FILE ID:	>A2274
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-17:38	MATRIX:	Water
DESCRIPTION:	BEC-14S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-10
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-18:31
DESCRIPTION: BEC-15S

SAMPLE ID: 2015
LAB FILE ID: >A2275
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	0.3 J	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

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J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2015
LAB ID:	2586-10	LAB FILE ID:	>A2275
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-18:31	MATRIX:	Water
DESCRIPTION:	BEC-15S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-11
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-18:31
DESCRIPTION: BEC-16S

SAMPLE ID: 2016
LAB FILE ID: >A2276
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	2	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	0.3 J	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	36	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	0.3 J	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	85	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1
Methyl tert-butyl-Alcohol	2	1 U	1

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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2016
LAB ID:	2586-11	LAB FILE ID:	>A2276
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-18:31	MATRIX:	Water
DESCRIPTION:	BEC-16S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-12
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-21:38
DESCRIPTION: BEC-17S

SAMPLE ID: 2017
LAB FILE ID: >A2277
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	23	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	0.07	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	0.2 J	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

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J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2017
LAB ID:	2586-12	LAB FILE ID:	>A2277
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-21:38	MATRIX:	Water
DESCRIPTION:	BEC-17S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 1

COMPOUND	RT	RESULTS
Sec-butyl benzene	22.27	0.2

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2018
LAB ID:	2586-13	LAB FILE ID:	>A2278
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-22:30	MATRIX:	Water
DESCRIPTION:	BEC-18S		

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	2.3	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1.2	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	105	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	201	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	2 J	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

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J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2018
LAB ID:	2586-13	LAB FILE ID:	>A2278
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-22:30	MATRIX:	Water
DESCRIPTION:	BEC-18S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-14
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/18/01-23:32
DESCRIPTION: BEC-1D

SAMPLE ID: 2001
LAB FILE ID: >A2279
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	3	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	0.2 J	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	6.8	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	25	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2001
LAB ID:	2586-14	LAB FILE ID:	>A2279
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/18/01-23:32	MATRIX:	Water
DESCRIPTION:	BEC-1D		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 1

COMPOUND	RT	RESULTS
Carbon disulfide	4.18	1.21

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-15
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/19/01-00:25
DESCRIPTION: Field Blank

SAMPLE ID: 1001
LAB FILE ID: >A2280
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	1001
LAB ID:	2586-15	LAB FILE ID:	>A2280
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/19/01-00:25	MATRIX:	Water
DESCRIPTION:	Field Blank		

(EPA Method 624)

CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2586-16
PROJECT: 90059-02
DATE RECEIVED: 06/08/01
DATE EXTRACTED: N/A
DATE ANALYZED: 06/19/01-01:15
DESCRIPTION: Trip Blank

SAMPLE ID: 1002
LAB FILE ID: >A2281
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	1002
LAB ID:	2586-16	LAB FILE ID:	>A2281
PROJECT:	90059-02	DILUTION FACTOR:	1
DATE RECEIVED:	06/08/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	06/19/01-01:15	MATRIX:	Water
DESCRIPTION:	Trip Blank		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

METALS ANALYSIS DATA SHEETS

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2004
LAB SAMPLE ID: 2586-2
DESCRIPTION: MW-4

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 06/08/01
DATE DIGESTED: 06/18/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Arsenic	<0.008	<0.008	0.008	206.2	09/12/01
Aluminum	<0.01	<0.01	0.01	202.1	06/21/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2104
LAB SAMPLE ID: 2586-3
DESCRIPTION: MW-4

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 06/08/01
DATE DIGESTED: 06/18/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Arsenic	<0.008	<0.008	0.008	206.2	09/12/01
Aluminum	<0.01	<0.01	0.01	202.1	06/21/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2009
LAB SAMPLE ID: 2586-5
DESCRIPTION: MW-9

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 06/08/01
DATE DIGESTED: 06/18/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyze
Aluminum	<0.01	<0.01	0.01	202.1	06/21/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2011
LAB SAMPLE ID: 2586-7
DESCRIPTION: BEC-11S

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 06/08/01
DATE DIGESTED: 06/18/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Aluminum	<0.01	<0.01	0.01	202.1	06/21/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 1001
LAB SAMPLE ID: 2586-15
DESCRIPTION: Field Blank

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 06/08/01
DATE DIGESTED: 06/18/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Arsenic	<0.008	<0.008	0.008	206.2	09/12/01
Aluminum	<0.01	<0.01	0.01	202.1	06/21/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

VOLATILE ORGANICS + 10

CHROMATOGRAM PRINTOUTS

QUANT REPORT Page 1

Operator ID: [illegible]	Quant Rev: 7 Quant Time: [illegible]
Output File: ^A22e9::QT	Injected at: **0618 13:21
Data File: [illegible]	Dilution Factor: 1.00000
Name: 2096-1	Instrument ID: GC/MS#1
Misc: [illegible]	

ID File: IDNEW::SC
Title: [illegible]
Last Calibration: [illegible] 10:27 Last Qcal Time: **0618 11:21

	Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	*[illegible]	7.15	485	75078	30.00	ug/l	100
[illegible]	cis-1,2-Dichloroethene	6.27	396	3788	2.15	ug/l	96
[illegible]	[illegible] SURR	7.03	473	57641	31.97	ug/l	96
[illegible]	*1,4-Difluorobenzene	8.44	615	93655	30.00	ug/l	100
[illegible]	Trichloroethene	8.92	664	3704	3.00	ug/l	82
[illegible]	Toluene-d8 SURR	11.61	936	90330	32.24	ug/l	100
[illegible]	*[illegible]	[illegible]	[illegible]	72646	30.00	ug/l	100
[illegible]	4-Bromofluorobenzene SURR	18.98	1680	62404	33.19	ug/l	89
[illegible]	*1,4-Dichlorobenzene-d4	20.70	[illegible]	63739	30.00	ug/l	96
[illegible]	tert-Butylbenzene	21.53	1937	1758	.570	ug/l	92

* Compound is ISTD

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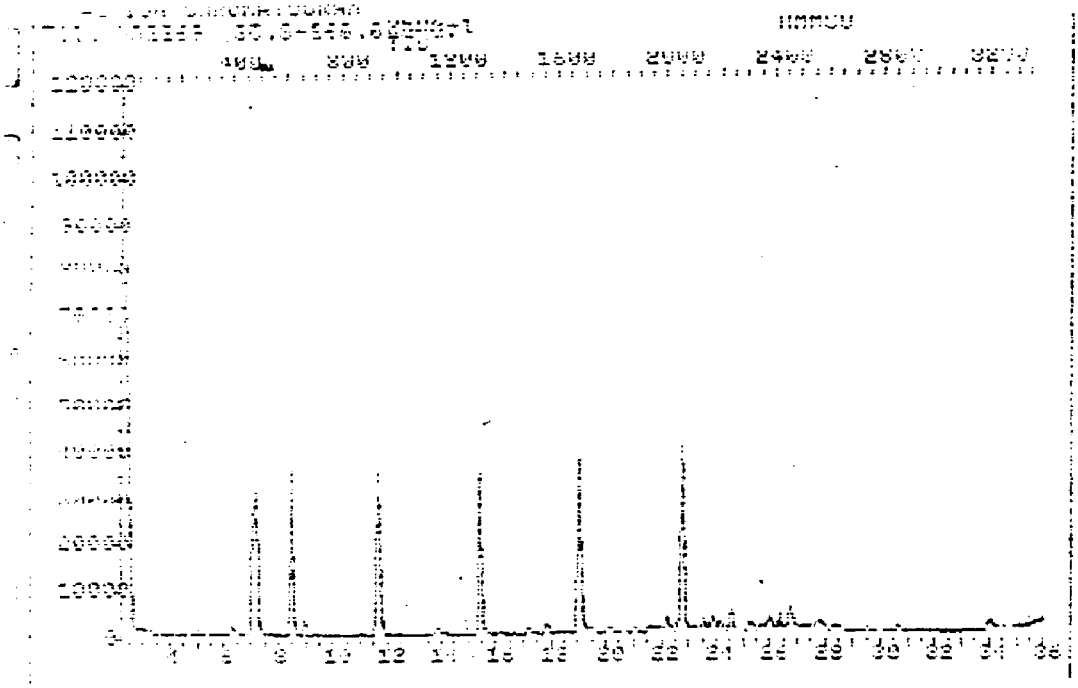
TIERRA-B-008471



Data File: ^A2269::U3 Quant Output File: ^A2269::QT

Instrument ID: 3C/ME-1

Method: AMMCO

Title: TECHNION IMC.

Last Calibration: 010502 10:07 Last Qcal Time: **0618 11:01

Quant Time : 010618 10:08

QUANT REPORT

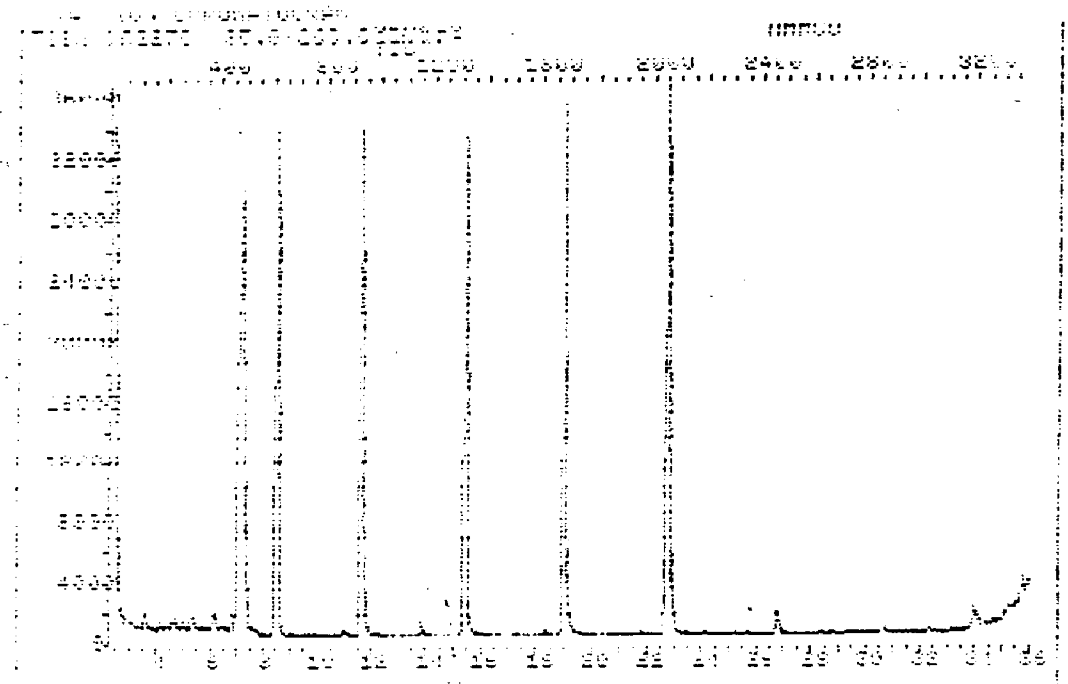
Quant Rev: 7 Quant Time: 010618 18:12
Injected at: **0618 14:07
Dilution Factor: 1.00000
Instrument ID: GC/MS#1

[illegible] File: [illegible]
[illegible]: 2366-4

[illegible] File: [illegible]
Last Calibration: 010602 10:27
Last Qcal Time: **0618 11:21

Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	[illegible]	70178	30.00	ug/l	100
Dibromofluoromethane SURR	7.07	[illegible]	57003	31.42	ug/l	99
[illegible]	8.42	[illegible]	38179	30.00	ug/l	100
Toluene-d8 SURR	11.60	923	89934	32.59	ug/l	100
[illegible]	15.76	1308	66840	30.00	ug/l	100
4-Bromofluorobenzene SURR	18.98	1674	58129	32.67	ug/l	85
[illegible]	22.73	[illegible]	59070	30.00	ug/l	92

Compound is ISTD



Data File: >A2270::V3
Name: 1756-1
Misc: AMMCO

Quant Output File: ^A2270::QT
Instrument ID: GC/MS-1

Id File: IDMEM::SI
Title: TECHNION INC.
Last Calibration: 010502 10:27

Last Qual Time: ++0618 11:21

Operator ID: Bamm
Quant Time: 010618 18:12
Injected at: ++0618 14:07

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QUANT REPORT

[illegible]
Output File: ^A2271::QT
[illegible]
Name: 2786-F [illegible]
[illegible]

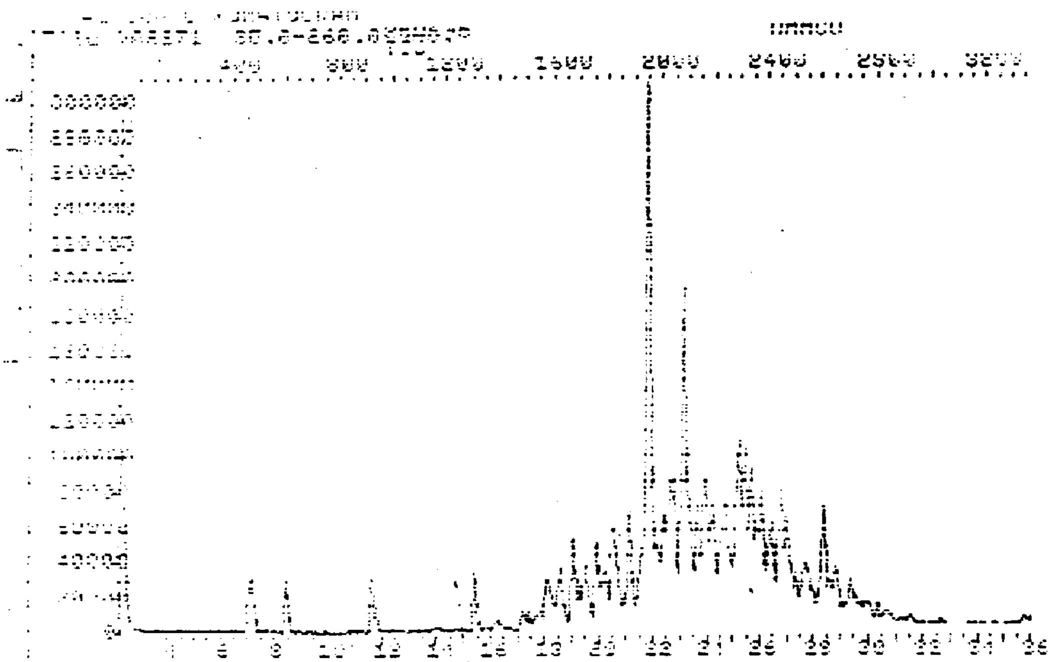
[illegible]
[illegible]
Last Calibration: 910702 10:07

Quant Rev: 7 Quant Time: [illegible]
Injected at: **0615 14:58
Dilution Factor: 1.00000
Instrument ID: GC/MS#1

Last Qcal Time: **0618 11:21

Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Vinyl Chloride	[illegible]	42	629	.818	ug/l	98
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dibomoflouromethane SURR	7.02	465	50903	30.53	ug/l	96
[illegible]	[illegible]	[illegible]	[illegible]	1.58	ug/l	35
*1,4-Difluorobenzene	8.41	605	83811	30.00	ug/l	100
[illegible] SURR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100
Toluene	11.73	941	10819	6.84	ug/l	97
*[illegible]	[illegible]	[illegible]	[illegible]	30.00	[illegible]	100
4-Isopropyltoluene ✓	22.70	2045	35360	10.95	ug/l	84
[illegible]	[illegible]	[illegible]	[illegible]	1.61	ug/l	95
m,p-xylene	16.22	1394	3043	2.53	ug/l	100
[illegible]	17.37	[illegible]	5929	5.30	ug/l	100
1,1,2,2-Tetrachlorethane	19.83	1777	147	.115	ug/l	77
[illegible]	19.88	[illegible]	150	.185	ug/l	98
4-Bromofluorobenzene SURR	18.97	1671	53419	32.44	ug/l	88
[illegible] ✓	[illegible]	[illegible]	[illegible]	18.03	ug/l	90
*1,4-Dichlorobenzene-d4	22.71	2046	54994	30.00	ug/l	98
[illegible] ✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	95
1,3,5-Trimethylbenzene ✓	20.53	[illegible]	[illegible]	21.27	ug/l	91
[illegible] ✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Naphthalene	30.31	2808	8175	7.78	ug/l	91

[illegible]



Data File: >A2271::V7

Quant Output File: ^A2271::QT

Instrument ID: GC/MS#1

Title: TECHNION INC.

Last Calibration: 010F02 10:07

Last Qcal Time: **0e18 11:21

Quant Time : 010e18 18:15

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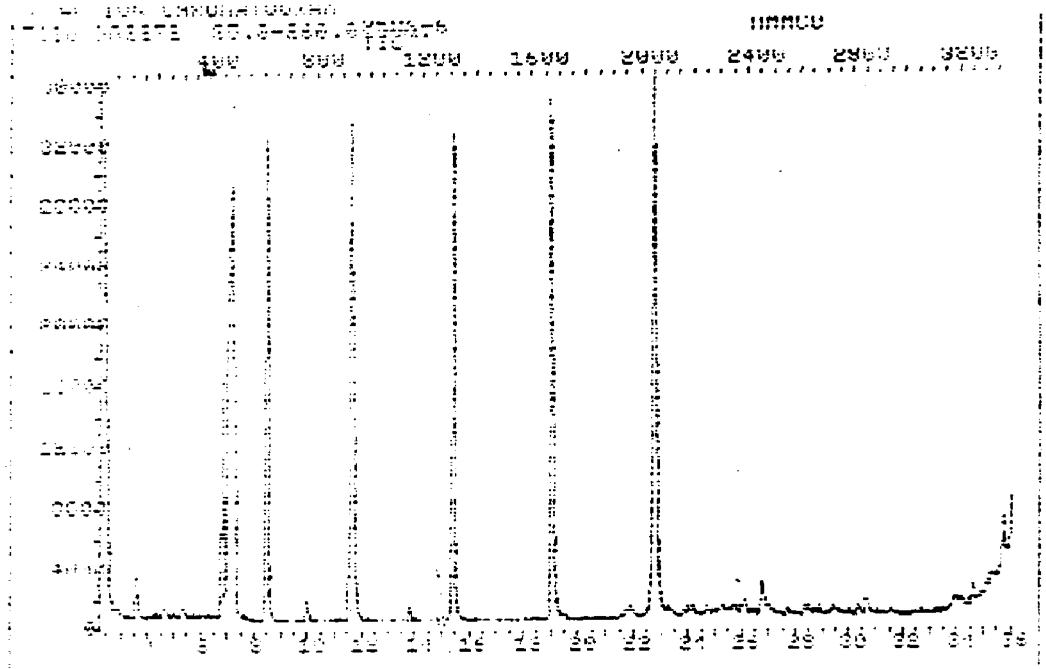
QUANT REPORT Page 1

Quant rev: 7 Quant Time: 0[illegible]8 18:18
Injected at: **0618 15:44
Dilution Factor: 1.0000
Instrument ID: GC/MS#1

Last Qcal Time: **0618 11:21

		R.T.	Resp	Area	Conc	Units	Q
[illegible]		7.15	478	66977	30.00	ug/l	100
Methylene Chloride		4.60	221	2254	1.23	ug/l	88
[illegible]	SURR	7.11	467	70873	31.54	ug/l	96
Chloroform		6.77	448	43340	19.48	ug/l	97
[illegible]		8.43	607	87723	30.00	ug/l	100
Toluene-d8	SURR	11.60	909	92669	32.58	ug/l	100
[illegible]		15.77	1704	87870	30.00	ug/l	100
4-Bromofluorobenzene	SURR	18.98	1673	84490	32.07	ug/l	86
[illegible]		22.70	2049	97267	30.00	ug/l	96

* Compound is ISTD



Data File: >A2272::VJ
Name: 2756-6
Misc: AMMCO

Quant Output File: ^A2272::QT
Instrument ID: 5970MS #1

Title: TECHNION INC.
Last Calibration: 010502 10:23
Last Qcal Time: **0618 11:21

Quant Time : 010618 18:18

QUANT REPORT   Page 1

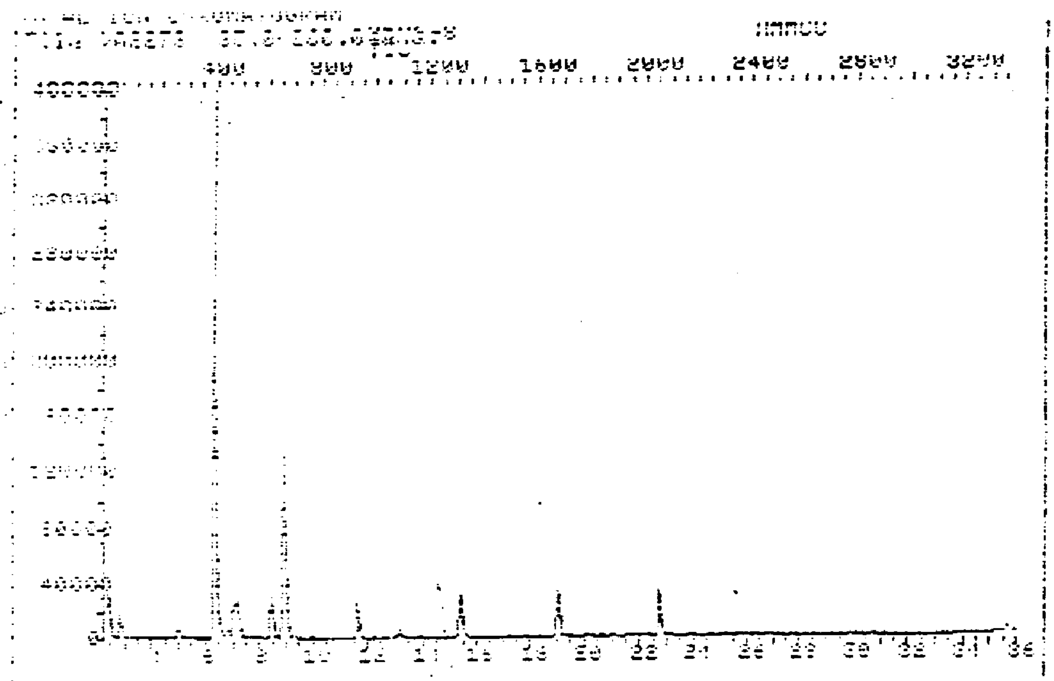
[illegible] Quant Rev: 7   Quant Time: 010[illegible] 10:21
Output File: ^A2273::QT   Injected at: **0618 16:31
[illegible]   Dilution Factor: 1.00000
Name: 2786-8   Instrument ID: GC/MS#1
[illegible]

ID File: IDMEA::SC
[illegible]
Last Calibration: 010502 10:27   Last Qcal Time: **0618 11:21

[illegible]	Compound	R.T.	Scan#	Area	Conc	Units	q
	[illegible]	[illegible]	[illegible]	[illegible]	30.00	ug/l	100
	Vinyl Chloride	2.89	44	90945	134.31	ug/l	94
	[illegible]	4.73	254	20757	15.16	ug/l	92
	1,1-Dichloroethane	5.43	307	233	.138	ug/l	91
	[illegible]	6.26	389	[illegible]	[illegible]	[illegible]	97
	Dibromofluoromethane SURR	7.02	467	50616	34.49	ug/l	97
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	2-Butanone (MEK)	6.42	407	173	.819	ug/l	65
	[illegible]	8.42	[illegible]	[illegible]	30.00	ug/l	100
	Toluene-d8 SURR	11.59	925	79628	32.40	ug/l	100
	[illegible]	13.10	1079	2006	1.93	ug/l	100
	Dibromochloromethane	13.11	1080	4776	3.86	ug/l	100
	[illegible]	15.77	1709	[illegible]	30.00	ug/l	100
	4-Bromofluorobenzene SURR	19.97	1670	54092	32.71	ug/l	87
	[illegible]	22.70	2049	53225	30.00	ug/l	94
	tert-Butylbenzene	21.51	1928	344	.133	ug/l	92

[illegible]

48



Data File: >A2273::V3
Name: [illegible]
Misc: AMMCO

Id File: [illegible]
Title: TECHNION INC.
Last Calibration: 010502 10:23

[illegible]
Quant Time : 010618 18:21
[illegible]

Quant Output File: ^A2273::QT
Instrument ID: GC/MS#1

Last Qcal Time: **0618 11:21

QUANT REPORT Page 1

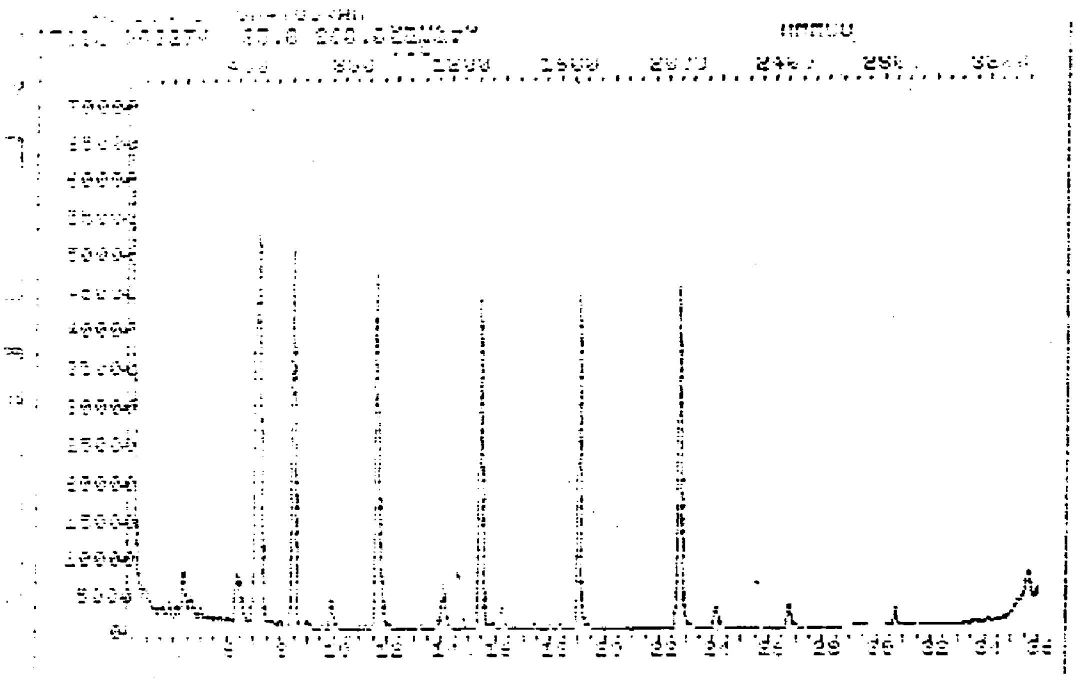
Operator ID: SAMMY Quant Rev: 7 Quant Time: 010618 18:24
Output File: ^A2274::QT Injected at: **0618 17:38
Data File: [illegible] Dilution Factor: 1.00000
Name: 2586-9 Instrument ID: GC/MS#1
[illegible]

ID File: IDNEW::SC
Title: TECHMION INC.
Last Calibration: 010502 10:23 Last Qcal Time: **0618 11:21

	Compound		R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	30.00	ug/l	100
[illegible]	Methylene Chloride		4.58	219	3828	1.09	ug/l	92
[illegible]	[illegible]	TBA	4.28	139	748	3.27	ug/l	88
[illegible]	Dibromofluoromethane	SURR	7.02	465	90002	29.43	ug/l	98
[illegible]	2-Butanone	MEK	[illegible]	[illegible]	18130	41.74	ug/l	62
[illegible]	*1,4-Difluorobenzene		8.41	60[illegible]	144349	30.00	ug/l	100
[illegible]	Toluene-d8	SURR	[illegible]	927	124212	28.76	ug/l	100
[illegible]	Toluene		11.74	942	12457	4.57	ug/l	94
[illegible]	*Chlorobenzene-d5		15.37	1308	91575	30.00	ug/l	100
49)	Ethylbenzene		15.85	1357	2010	.379	ug/l	88
[illegible]	m,p-Xylene		16.13	1398	3097	1.74	ug/l	100
[illegible]	o-Xylene		17.38	1511	1108	.669	ug/l	100
[illegible]	4-Methyl-2-pentanone	MIBK	11.41	909	[illegible]	.149	ug/l	96
[illegible]	4-Bromofluorobenzene	SURR	18.97	1672	73253	30.06	ug/l	88
[illegible]	*1,4-Dichlorobenzene-d4		22.70	2049	74[illegible]06	30.00	ug/l	94

* Compound is ISTD

50



Data File: >A2274::V3 Quant Output File: ^A2274::QT
Name: 2556-9 Instrument ID: GC/MS-1
Misc: AMMCO

ID File: [illegible]
Title: TECHNION INC.
Last Calibration: 010502 10:27 Last Qcal Time: **0618 11:21

[illegible] ID: [illegible]
Quant Time : 010618 19:24
[illegible] **0618 17:59

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Quant Report

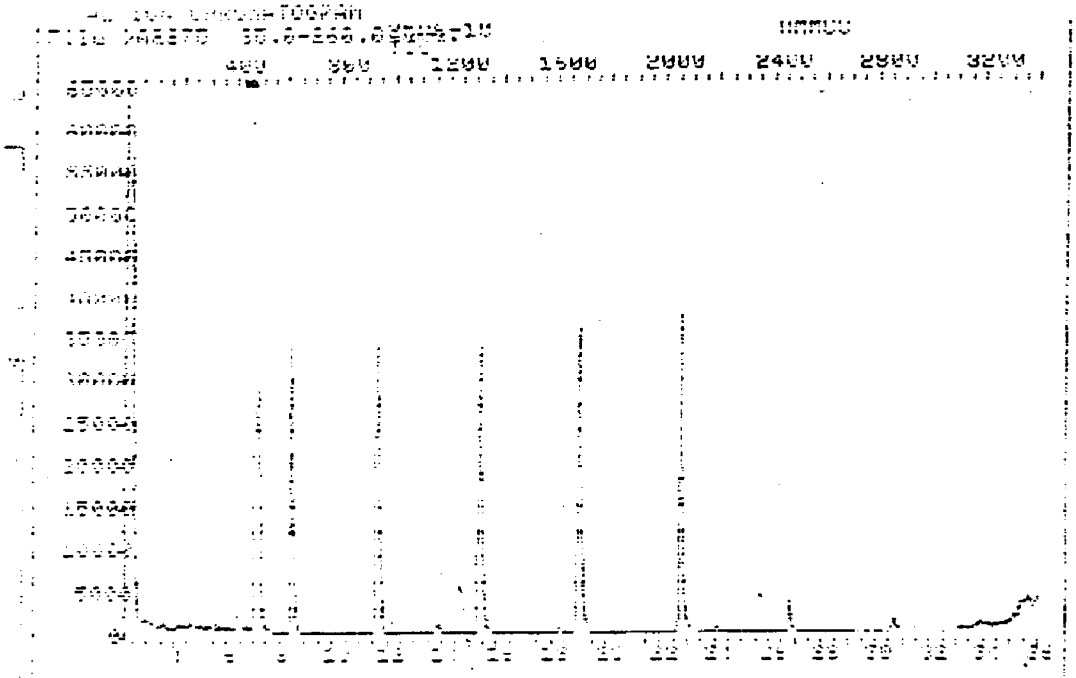
[illegible]	Quant Rev: [illegible] Quant Time: [illegible]
Output File: ^A2275::QT	Injected at: **0618 18:31
Data File: [illegible]2275::[illegible]	Dilution Factor: 1.0[illegible]0
Name: 2758-10	Instrument ID: GC/MS#1
[illegible]	

ID File: IDNEW::SC
[illegible]
Last Calibration: 910702 10:27 Last Qcal Time: **0618 11:21

	Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30.00	ug/l	100
[illegible]	1,1-Dichloroethane	5.42	311	531	.266	ug/l	96
[illegible]	[illegible] SURR	7.03	477	[illegible]	33.44	ug/l	97
[illegible]	*1,4-Difluorobenzene	8.44	615	93527	30.00	ug/l	100
[illegible]	[illegible] SURR	11.[illegible]	[illegible]	[illegible]1	31.44	ug/l	100
[illegible]	*Chlorobenzene-d5	15.39	1318	70131	30.00	ug/l	100
[illegible]	[illegible] SURR	18.[illegible]	[illegible]	[illegible]6	32.03	ug/l	87
[illegible]	*1,4-Dichlorobenzene-d4	22.72	2057	61283	30.00	ug/l	92

[illegible]

52



Data File: >A2275::VT
Quant Output File: ^A2275::QT
Misc: AMMCD

Title: TECHNION INC.
Last Calibration: 010702 10:27
Last Qual Time: **0618 11:21

Quant Time : 010619 19:09

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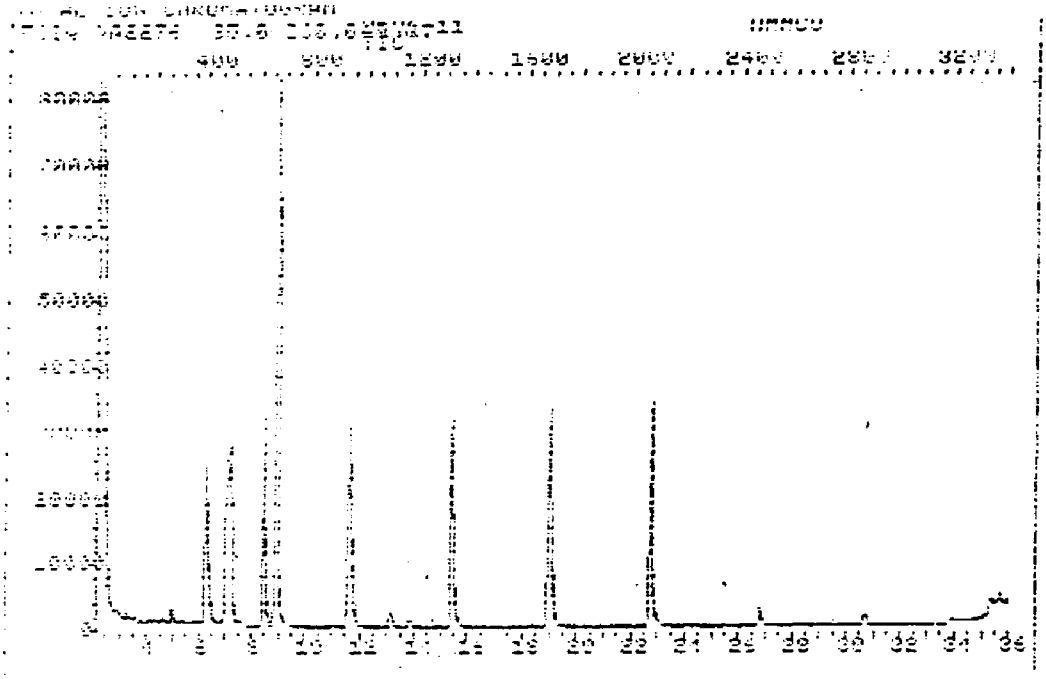
QUANT REPORT Page 1

[illegible] ID: [illegible] Quant Rev: 7 Quant Time: [illegible] 20:[illegible]
Output File: ^A2276::QT Injected at: **[illegible] 19:[illegible]
Data File: [illegible] Dilution Factor: 1.00[illegible]0
Name: 2786-11 Instrument ID: GC[illegible]
[illegible]

ID File: IDNEW::[illegible]
[illegible]
Last Calibration: [illegible] 10:27 Last Qcal Time: **0618 11:21

	Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100
[illegible]	Methyl-tert-butyl Ether MTBE	4.95	26[illegible]	[illegible]	1.9[illegible]	ug/l	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ug/l	[illegible]
[illegible]	Dibomoflouromethane SURR	7.02	477	[illegible]	34.04	ug/l	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100
[illegible]	Trichloroethene	8.90	662	99635	85.06	ug/l	91
[illegible]	[illegible] SURR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	100
[illegible]	Tetrachloroethene	[illegible]	109[illegible]	406	.340	ug/l	100
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.50	ug/l	100
[illegible]	*Chlorobenzene-d5	15.38	1317	67112	30.00	ug/l	100
[illegible]	[illegible] SURR	1[illegible].99	1[illegible]	55030	31.78	ug/l	87
[illegible]	*1,4-Dichlorobenzene-d4	2[illegible].70	2057	55997	30.00	ug/l	92

* Compound is ISTD



Data File: >A2276::03 Quant Output File: ^A2276::0T
Name: [illegible] Instrument ID: GC/MS-1
Misc: AMMCO

ID File: IDNEW::EC
Title: TECHNION INC.
Last Calibration: 010502 10:23 Last Qcal Time: **0618 11:21

Operator ID: SUMMA
Quant Time : 010618 20:39
Reviewed at: **0618 [illegible]

Operator ID: [illegible] Quant Rev: 7 Quant Time: 010618 22:15
Output File: ^A2277::QT Injected at: **0618 21:38
Data File: [illegible] Dilution Factor: 1.00000
Name: 2586-12 Instrument ID: GC/MS#1
[illegible]

ID File: IDNEW::SC
Title: TECHLAW INC.
Last Calibration: 010502 10:27 Last Qcal Time: **0618 11:21

Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	[illegible]	[illegible]	30.00	[illegible]	100
[illegible] Trichlorofluoromethane	4.03	164	454	.213	ug/l	90
[illegible] SURR	7.02	[illegible]	58404	32.47	ug/l	98
[illegible] Chloroform	6.77	441	66485	22.69	ug/l	98
[illegible] 1,4-[illegible]	8.43	608	94054	30.00	ug/l	100
[illegible] Toluene-d8 SURR	11.61	925	86615	30.71	ug/l	100
[illegible]	13.79	1150	[illegible]34	.0724	ug/l	100
[illegible] *Chlorobenzene-d5	17.38	1510	63817	30.00	ug/l	100
[illegible] SURR	18.99	[illegible]	73302	32.10	ug/l	86
e1) *1,4-Dichlorobenzene-d4	22.72	2091	59997	30.00	ug/l	98
[illegible]	22.27	2036	426	.141	ug/l	77

* Compound is ISTD

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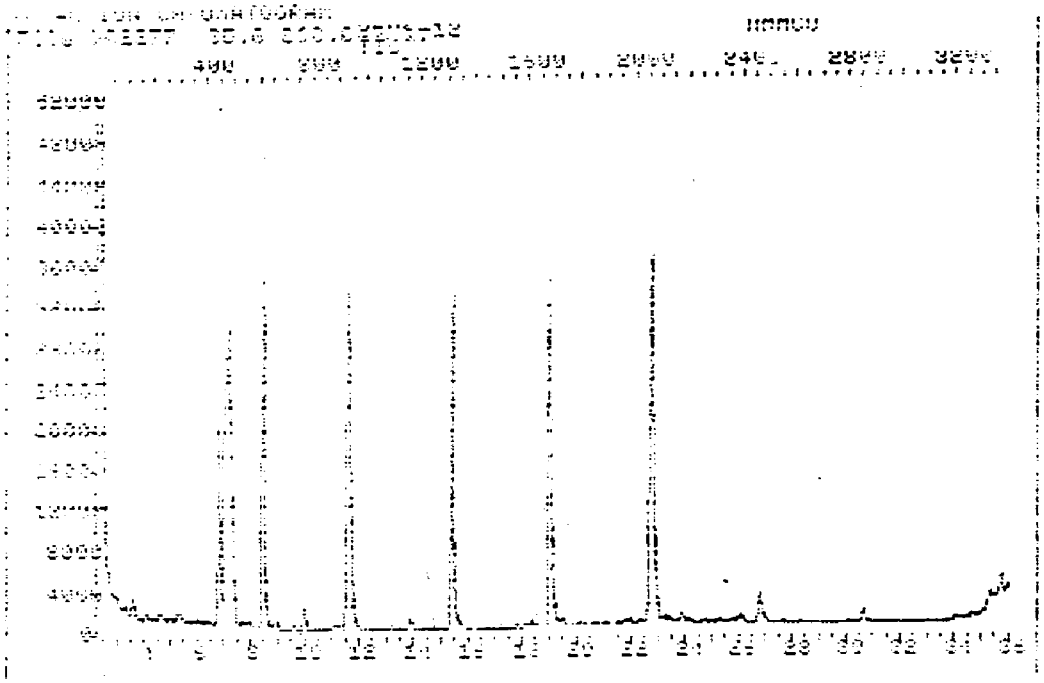
TIERRA-B-008487



Data File: >A2277::U3 Quant Outout File: ^A2277::QT
Misc: AMOCO

Title: TECHNION INC.
Last Calibration: 010502 10:23 Last Qcal Time: **Oct8 11:21

Quant Time : 010618 22:15

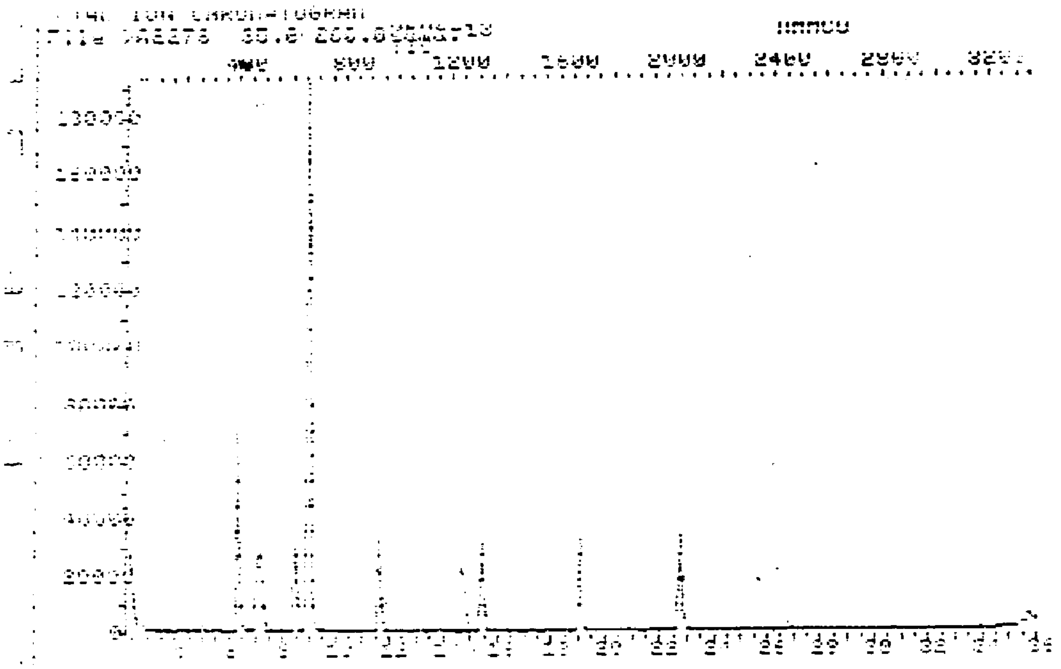
[illegible] Quant Rev: 7 Quant Time: [illegible]
[illegible]tput File: ^A2278::GT Injected at: **0618 22:30
[illegible] Dilution Factor: 1.00000
[illegible] 2986-17 Instrument ID: GC/MS#1
[illegible]

[illegible] File: ICNEW::SC
[illegible]
[illegible] Calibration: 010502 10:27 Last Qcal Time: **0618 11:21

	Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	7.15	[illegible]	[illegible]	30.00	ug/l	[illegible]
[illegible]	Vinyl Chloride	2.91	41	1629	2.18	ug/l	72
[illegible]	[illegible]-1,2-Dichloroethene	4.43	[illegible]	[illegible]	1.23	ug/l	91
[illegible]	1,1-Dichloroethane	5.46	308	2640	1.41	ug/l	94
[illegible]	[illegible]	6.18	741	[illegible]	104.79	ug/l	96
[illegible]	Dibomofflouromethane SURR	7.03	467	58747	31.07	ug/l	96
[illegible]	[illegible]	6.79	[illegible]	2413	1.08	ug/l	99
[illegible]	2-Butanome MEK	6.35	399	546	2.34	ug/l	73
[illegible]	[illegible]	8.42	[illegible]	[illegible]	30.00	ug/l	100
[illegible]	Trichloroethene	8.90	659	225190	200.95	ug/l	88
[illegible]	Toluene-d8 SURR	11.21	929	80418	31.78	ug/l	100
[illegible]	Tetrachloroethene	13.10	1080	1162	1.01	ug/l	100
[illegible]	[illegible]	13.11	1081	1777	1.37	ug/l	100
[illegible]	*Chlorobenzene-d5	15.38	1310	63439	30.00	ug/l	100
[illegible]	[illegible]benzene SURR	18.99	1675	54660	32.37	ug/l	86
[illegible]	*1,4-Dichlorobenzene-d4	22.71	2050	56675	30.00	ug/l	94

[illegible] ISTD

TIERRA-B-008489



Data File: >A2278::U7
[illegible]
Misc: AMMCO

Quant Output File: ^A2278::QT
Instrument ID: GC/MS#1

ID File: [illegible]
Title: TECHNION INC.
Last Calibration: 010702 10:27

Last Qcal Time: **0618 11:21

[illegible]
Quant Time : 010618 23:37
[illegible]

[illegible] Quant Rev: 7 Quant Time: [illegible] 00:08
Output File: ^H2279::QT Injected at: **0618 23:32
[illegible] File: [illegible] Dilution Factor: 1.00000
Name: 2595-14 Instrument ID: GC/MS#1
[illegible]

IC File: IDMEW::SC
[illegible]
Last Calibration: [illegible] 10:27 Last Qcal Time: **0619 11:21

	Compound	R.T.	Scan#	Area	Conc	Units	q
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Carbondisulfide	4.18	18[illegible]	[illegible]	1.21	ug/l	96
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	ug/l	[illegible]
[illegible]	cis-1,2-Dichloroethene	6.21	341	19182	6.79	ug/l	92
[illegible]	[illegible] SURR	[illegible]	[illegible]	[illegible]	30.27	[illegible]	[illegible]
[illegible]	2-Butanone (MEK)	6.26	39[illegible]	1174	2.82	ug/l	98
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	30.[illegible]	ug/l	100
[illegible]	Trichloroethene	8.87	6[illegible]	[illegible]	25.25	ug/l	99
[illegible]	[illegible] SURR	[illegible]	[illegible]	117[illegible]72	28.51	ug/l	100
[illegible]	*Chlorobenzene-d5	1[illegible].36	131[illegible]	[illegible]	30.00	ug/l	10[illegible]
[illegible]	[illegible]-Bromofluorobenzene SURR	18.96	[illegible]	[illegible]8148	29.22	ug/l	90
[illegible]	*1,4-Dichlorobenzene-d4	21.70	20[illegible]	[illegible]	30.00	ug/l	93

* Compound is ISTD

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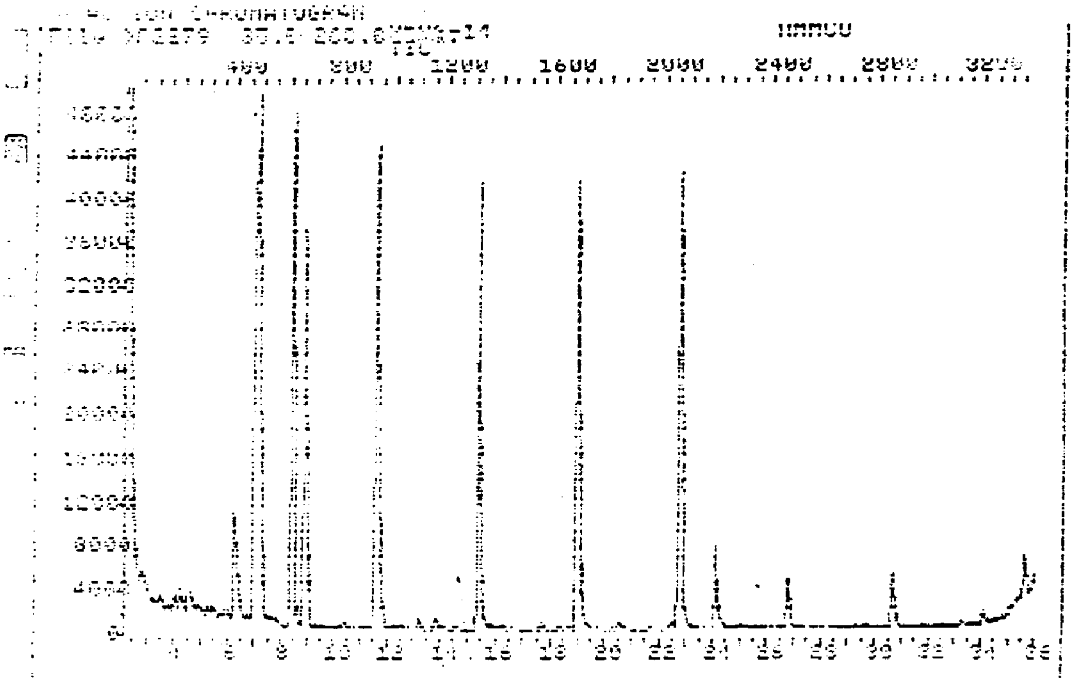

Data File: >A2279::V3
Name: 2701-14
Misc: AMMCO

Quant Output File: ^A2279::QT
Instrument ID: GC/MS#1

Id File: IDNEW::SC
Title: TECHNION INC.
Last Calibration: 010502 10:23

Last Qcal Time: **0618 11:21

Operator ID: Sammy
Quant Time : 010619 00:03
Injected at: **0619 23:32

TIERRA-B-008492

Quant Report

[illegible]
Input File: ^A2280::QT
[illegible] File: [illegible]2280::[illegible]
Name: 2796-19.
[illegible]

Quant Rev: [illegible] Quant Time: [illegible]
Injected at: **0619 00:25
Dilution Factor: 1.00000
Instrument ID: GC/MS#1

ID File: IDNEW::SC
[illegible]
Last Calibration: 010902 10:23

Last Qcal Time: **0618 11:21

	Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	[illegible]	[illegible]	[illegible]	79[illegible]07	30.00	ug/l	100
[illegible]	Dibromofluoromethane SURR	7.03	46[illegible]	61373	32.10	ug/l	99
[illegible]	*[illegible]	8.42	[illegible]07	98477	30.00	ug/l	100
37)	Toluene-d8 SURR	11.61	929	92585	31.42	ug/l	100
[illegible]	*[illegible]benzene-d5	15.77	[illegible]	72352	30.00	ug/l	100
54)	4-Bromofluorobenzene SURR	18.98	1674	61146	31.75	ug/l	98
[illegible]	*[illegible]-d4	21.70	[illegible]	67452	30.00	ug/l	97

* Compound is ISTD

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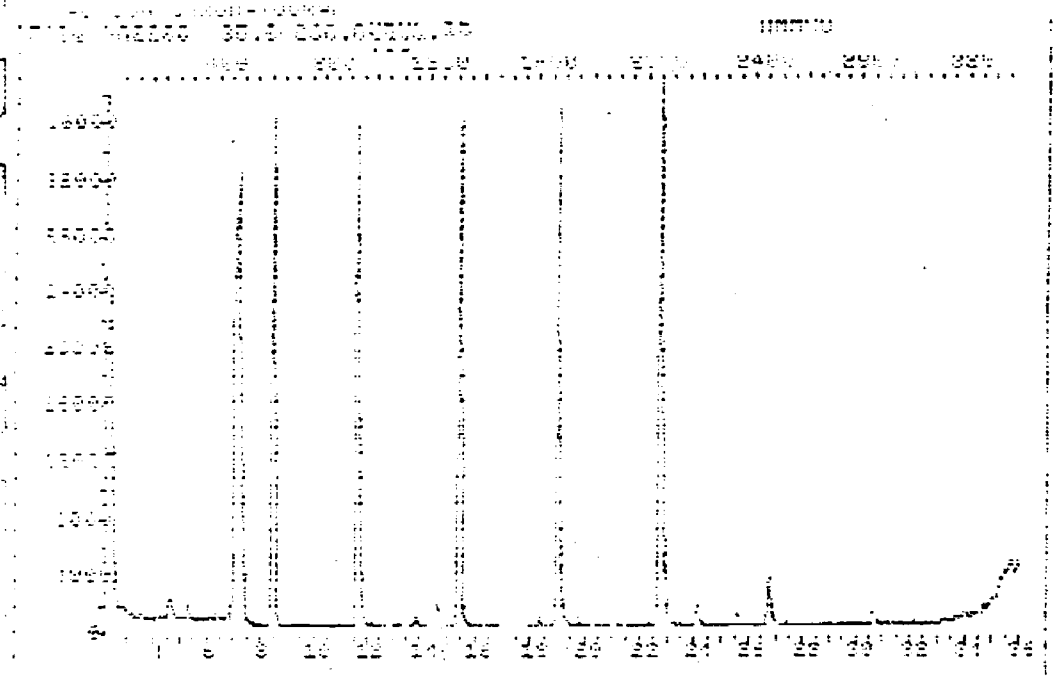


Data File: >A2280::V7
Method File: LP
Mode: AMMCO

Quant Output File: ^A2280::QT
Instrument ID: GC/ME-1

Title: TECHNION INC.
Last Calibration: 010702 10:03

Last Qual Time: **0e19 11:01

Quant Time : 010e19 01:3e

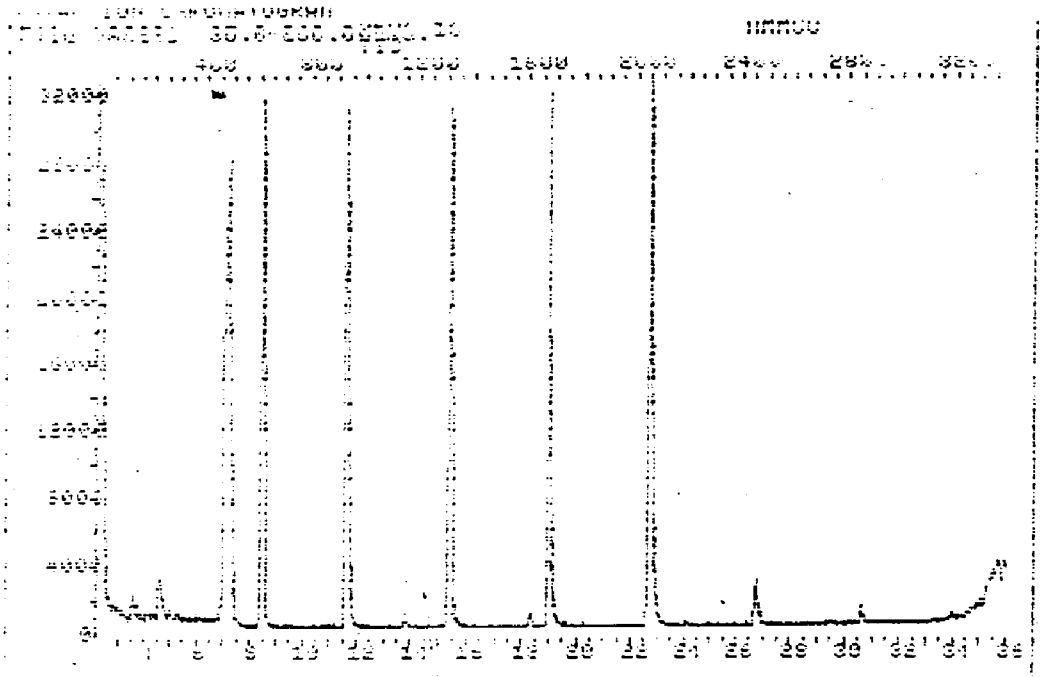
QUANT REPORT Page 1

Quant Rev: 7 Quant Time: 010619 01:39
Injected at: **0619 01:15
Dilution Factor: 1.00000
Instrument ID: GC/MS#1

Last Calibration: 010502 10:23 Last Qcal Time: **0618 11:21

		R.T.	Resp	Area	Conc	Units	Q
	[illegible]	7.15	479	68409	30.10	ug/l	100
	Dibromofluoromethane SURR	7.01	461	46107	27.98	ug/l	94
	[illegible]	8.42	507	90101	30.00	ug/l	100
	Toluene-d8 SURR	11.60	923	81387	31.49	ug/l	100
	[illegible]	15.76	1009	61965	30.00	ug/l	100
	4-Bromofluorobenzene SURR	18.97	1677	61716	31.96	ug/l	84
	[illegible]	22.70	2150	83149	30.00	ug/l	98

Compound is ISTD



Data File: >A2281::V3 Quant Output File: ^A2281::QT
Name: [illegible] Instrument ID: GC/MS#1
Misc: AMOCO

[illegible] File: [illegible]
Title: TECHNION INC.
Last Calibration: 010502 10:23 Last Qcal Time: **0e18 11:21

[illegible]
Quant Time : 010619 01:39
Injected at: **0e19 01:19

TECHNION INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco

FILE ID: MS - ^A2264 - 01:41
MSD- ^A2265 - 02:52

DATE ANALYZED: 06/14/01

SAMPLE MATRIX: Water

LAB CODE: 07004

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Compounds	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS % Rec. #	QC Limits Rec.
1,1-Dichloroethene	20	0	26.0	130	61 - 145
Trichloroethene	20	0	20.0	100	71 - 120
Benzene	20	0	21.6	108	76 - 127
Toluene	20	0	23.0	115	76 - 125
Chlorobenzene	20	0	21.6	108	75 - 130

Compounds	Spike Added (ug/L)	MSD Concentration (ug/L)	MSD % Recovery # (ug/L)	% RPD	QC Limits RPD	REC
1,1-Dichloroethene	20	22	110	17.0	14	61 - 145
Trichloroethene	20	18	90	10.5	14	71 - 120
Benzene	20	19	95	12.8	11	76 - 127
Toluene	20	21	105	9.0	13	76 - 125
Chlorobenzene	20	20	100	7.7	13	75 - 130

Column to be used to flag recovery and RPD values with an asterisk
Values outside of QC Limits
RPD: of outside limits
Spike Recovery: out of outside limits

'OAMSD-w

[illegible] REPORT   Page 1

Operator ID: [illegible]   Quant Rev: [illegible]   Quant Time: [illegible]
Output File: [illegible]A2291::GI   Injected at: **0613 13:17
Data File: [illegible]   Dilution Factor: 1.00000
Name: BLK   Instrument ID: GC/MS#1
Misc: [illegible]

ID File: IDNEW::SC
Title: [illegible]
Last Calibration: 010502 10:23   Last Qcal Time: **06[illegible] 12:29

	Compound	R.T.	Scan#	Area	Conc	Units	q
[illegible]	*Pentafluorobenzene	7.15	485	88947	30.00	ug/l	100
[illegible]	Dibromofluoromethane SURR	7.03	47[illegible]	63934	33.24	ug/l	94
[illegible]	*1,4-Difluorobenzene	8.43	614	107736	30.00	ug/l	100
[illegible]	Toluene-d8 SURR	11.61	936	102116	31.92	ug/l	100
[illegible]	*Chlorobenzene-d5	15.36	1315	80193	30.00	ug/l	100
[illegible]	4-Bromofluorobenzene SURR	19.98	16[illegible]	66309	31.88	ug/l	89
[illegible]	*1,4-Dichlorobenzene-d4	22.70	2086	70021	30.00	ug/l	96
[illegible]	1,2-Dibromo-3-chloropropane	26.61	247[illegible]	130	.926	ug/l	87
[illegible]	Hexachlorobutadiene	30.73	2827	55	.[illegible]27	ug/l	100

*, Compound is ISTD

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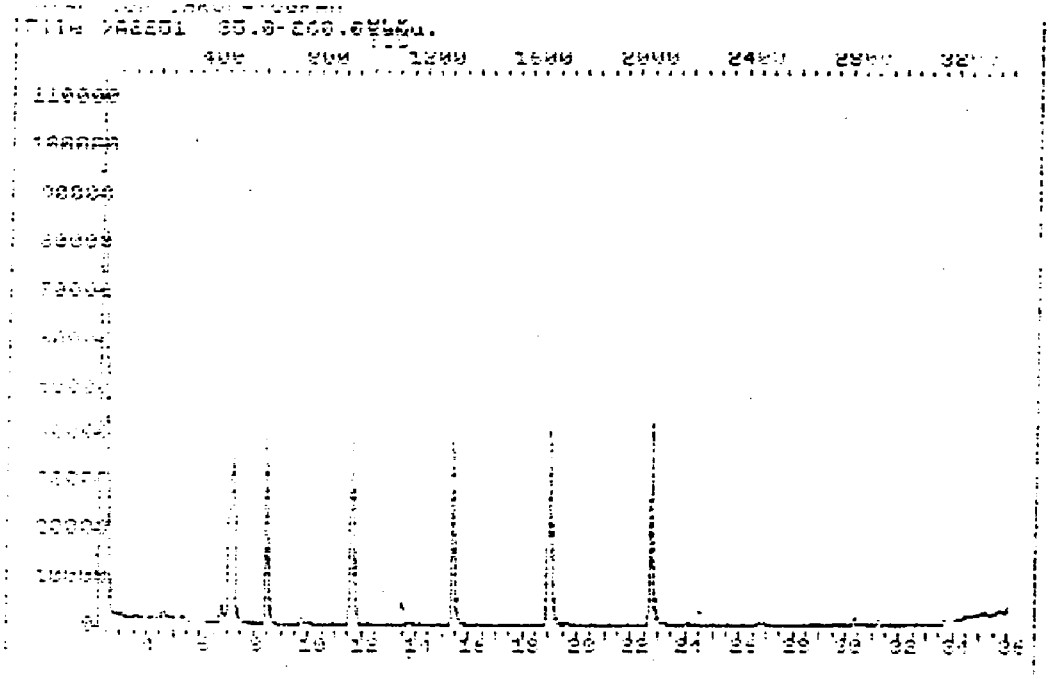


Data File: >A2251::V3 Quant Output File: ^A2251::QT
Name: B_
Misc:

Title: TECHNION INC.
Last Calibration: 010F02 10:23 Last Qcal Time: **0526 03:53

Client Time : 010613 17:54

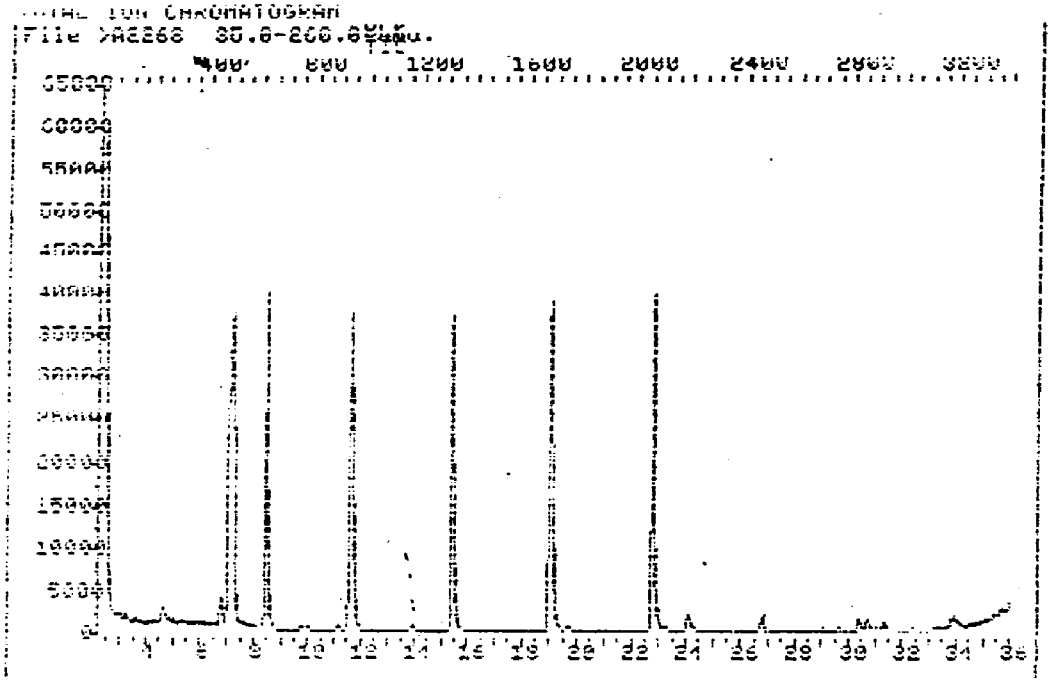
QUANT REPORT Page 1

Quant Rev: 7 Quant Time: 010618 18:04
Injected at: **0618 12:33
Dilution Factor: 1.00000
Instrument ID: GC/MS#1

File: IDNEW::SC
Last Cal Time: **0618 11:21
Last Calibration: 010502 10:23

	Compound		R.T.	Scan#	Area	Conc	Units	q
	*FLUOROBENZENE		7.15	485	94521	30.00	ug/l	100
	Dibromofluoromethane	SURR	7.02	472	69558	30.64	ug/l	99
	1,4-Difluorobenzene		8.42	613	109616	30.00	ug/l	100
	Toluene-d8	SURR	11.61	936	99668	30.39	ug/l	100
	*Chlorobenzene-d5		15.39	1317	77152	30.00	ug/l	100
	4-Bromofluorobenzene	SURR	18.99	1681	65165	31.72	ug/l	89
	*1,4-Dichlorobenzene-d4		22.72	2098	67434	30.00	ug/l	95

* Compound is ISTD



Data File: >A2268::03 Quant Output File: ^A2268::QT
Name: BLK Instrument ID: GC/MS#1
Misc:

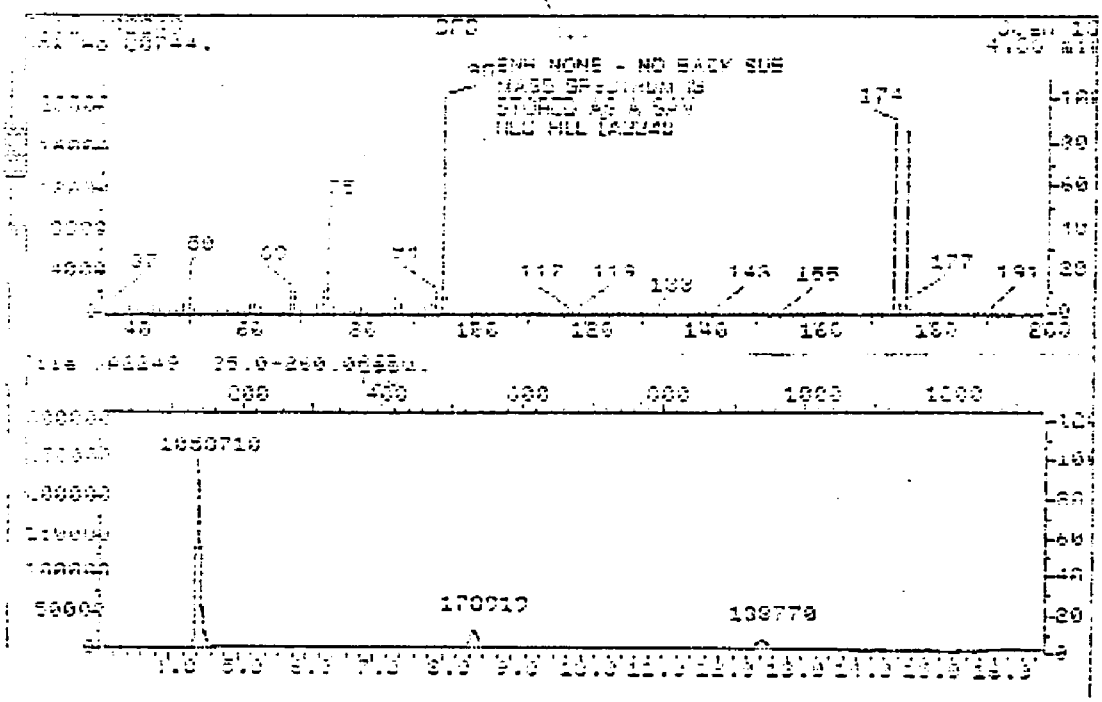
Id File: IDNEW::SC
Title: TECHNION INC.
Last Calibration: 010502 10:23 Last Qcal Time: **0618 11:21

Operator ID: SAMMY
Quant Time : 010618 18:04
Injected at: **0618 12:33

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	19.94	19.94	Ok
75	30-60% of mass 95	46.72	46.72	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.06	7.06	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	89.05	89.05	Ok
175	5-9% of mass 174	6.15	6.90	Ok
176	93-101% of mass 174	84.74	97.11	Ok
177	5-9% of mass 176	6.99	6.97	Ok

Calibration Date: 06/13/01
Injection Time: 11:55
Data File: \A0149
Scan: 192



Instrument ID: GCMS# Analyzed on: 6/17/01 11:55

Calibration Check Report

Title: [illegible]
Calibrated: 010502 10:19

Check Standard Data File: >A2259
Injection Time: **0613 12:28

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
Dichlorodifluoromethane	.37656	.33608	10.75	Average	
Chloromethane	.3797[illegible]	.37143	[illegible]	Average	
Vinyl Chloride	.34716	.26946	22.38	Average	
Bromomethane	.24713	.16174	33.48	Average	
Chloroethane	.17207	.25188	46.39	Average	
Trichlorofluoromethane	.79986	.91915	15.99	Average	
Acrolein	.00418	.00455	8.79	Average	(Conc=100.00)
1,1-Dichloroethene	[illegible]	[illegible]	.25	Average	
Methylene Chloride	.67163	.80871	20.41	Average	
Acetone	.20017	.21197	5.91	Average	
Carbondisulfide	.88344	.87682	.75	Average	
Acrylonitrile	.04991	.05044	17.06	Average	(Conc=100.00)
tert-butyl Alcohol TBA	.02157	.01863	13.61	Average	(Conc=200.00)
trans-1,2-Dichloroethene	.61393	.65559	6.79	Average	
Methyl-tert-butyl Eter MTBE	.82128	.78996	3.86	Average	
1,1-Dichloroethane	.79769	.78924	1.06	Average	
Vinyl Acetate	.26534	.21187	20.15	Average	
2,2-Dichloropropane	.65474	.62457	4.70	Average	
cis-1,2-Dichloroethene	.69191	.68725	.68	Average	
Dibromofluoromethane SURR	.70491	.64876	7.97	Average	(Conc=30.00)
Chloroform	.86868	1.12231	29.17	Average	
2-Butanone MEK	.13426	.09853	26.93	Average	
Bromochloromethane	.58502	.45634	22.00	Average	
1,1,1-Trichloroethane	.67366	.63058	6.40	Average	
1,1-Dichloropropene	.16622	.14927	10.20	Average	
Carbon Tetrachloride	.62062	.49696	19.92	Average	
1,2-Dichlorethane	.45211	.40793	9.77	Average	
Benzene	.92472	.99489	7.59	Average	
Trichloroethene	.35743	.38848	8.69	Average	
1,2-Dichloropropane	.37963	.36658	1.83	Average	
Bromodichloromethane	.67423	.63243	6.20	Average	
Dibromomethane	.21466	.33396	56.23	Average	
2-Chloroethyl vinyl ether	.17171	.14415	16.05	Average	
cis-1,3-Dichloropropene	.49537	.44391	10.39	Average	
Toluene-d8 SURR	.94524	.90200	4.57	Average	(Conc=30.00)
Toluene	.96715	.96351	.54	Average	
trans-1,3-Dichloropropene	.40996	.33299	18.77	Average	
1,1,2-Trichloroethane	.29238	.25134	14.03	Average	
1,3-Dichloropropane	.48142	.41990	12.78	Average	
Tetrachloroethene	.41501	.38919	6.22	Average	

RF - Response Factor from daily standard file at 20.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration

[illegible]

Calibration Check Report

Title: TECHNION INC.
Calibrated: [illegible]

Check Standard Data File: >A2250
Injection Time: **0613 12:29

Compound	$\overline{RF}$	RF	%Diff	Calib Type	
[illegible]	[illegible]	[illegible]	[illegible]	Average	
1,2-Dibromoethane	.47795	.43874	7.43	Average	
[illegible]	[illegible]	[illegible]	[illegible]	Average	
Chlorobenzene	.83853	.93884	10.92	Average	
1,1,1,2-Tetrachloroethane	.45104	.41874	7.79	Average	
Ethylbenzene	1.52314	1.72286	13.06	Average	
[illegible]	[illegible]	[illegible]	[illegible]	Average	
o-Xylene	.41166	.53392	29.70	Average	
Styrene	[illegible]	[illegible]	26.70	Average	
Bromoform	.29291	.23969	18.16	Average	
[illegible]	[illegible]	.35754	22.93	Average	
2-Hexanone	.29138	.24525	15.83	Average	
[illegible]	[illegible]	1.49671	15.56	Average	
1,1,2,2-Tetrachloroethane	.56813	.45574	19.78	Average	
1,2,3-Trichloropropane	[illegible]	[illegible]	7.14	Average	
Bromofluorobenzene SURR	.74067	.77815	5.06	Average	(Conc=30.00)
Isopropylbenzene	[illegible]	[illegible]	9.97	Average	
n-Propylbenzene	2.21834	2.60044	17.22	Average	
Bromobenzene	[illegible]	[illegible]	11.20	Average	
1,3,5-Trimethylbenzene	1.50086	1.69672	13.05	Average	
2-Chlorotoluene	[illegible]	[illegible]	[illegible]	Average	
Chlorotoluene	1.45977	1.70425	16.75	Average	
tert-Butylbenzene	[illegible]	[illegible]	16.72	Average	
1,2,4-Trimethylbenzene	1.38182	1.56156	13.01	Average	
sec-Butylbenzene	[illegible]	[illegible]	15.72	Average	
1,3-Dichlorobenzene	.84621	.95823	13.24	Average	
1,4-Dichlorobenzene	[illegible]	[illegible]	.84	Average	
1,2-Dichlorobenzene	.79097	.86067	8.81	Average	
1,2-Dibromo-3-chloropropane	[illegible]	[illegible]	[illegible]	Average	
Hexachlorobutadiene	.23112	.19437	20.23	Average	
1,2,4-Trichlorobenzene	[illegible]	[illegible]	[illegible]	Average	
Naphthalene	.56381	.49426	13.34	Average	
1,2,3-Trichlorobenzene	[illegible]	[illegible]	2.80	Average	

RF - Response Factor from daily standard file at 30.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration

%Diff - % Difference from original average or curve

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TIERRA-B-008505

Calibration Report

Title: Calibration Std.

Calibrated: 010502 10:19

Compound	Files: >A2156 RF 5.00	>A2154 RF 20.00	>A2158 RF 50.00	>A2157 RF 100.00	>A2155 RF 150.00	$\overline{RRT}$	$\overline{RF}$	% RSD	
Dichlorodifluoromethane	.31349	.41338	.35677	.38043	.41874	.355	.37656	11.514	
Chloromethane	.41111	.39223	.34843	.35762	.38917	.376	.37971	6.840	
Vinyl Chloride	.28559	.38232	.33129	.35645	.38014	.396	.34716	11.569	
Bromomethane	.22021	.36420	.22295	.20413	.20416	.438	.24313	28.071	
Chloroethane	.19424	.28192	.15590	.12688	.10139	.459	.17207	40.949	
Trichlorofluoromethane	.69294	.75363	.73950	.74952	.66221	.489	.71956	5.582	
Acrolein	.00397	.00380	.00491	.00373	.00449	.547	.00418	12.094	(Conc=25.0,100.0,250.0,500.0,
1,1-Dichloroethene	.48367	.74905	.64010	.64665	.63492	.563	.63088	15.034	
Methylene Chloride	.78622	.80777	.58405	.62771	.55239	.648	.67163	17.536	
Acetone	.17570	.25120	.23918	.22648	.23329	.693	.22517	12.926	
Carbondisulfide	.76877	1.17269	.79603	.83798	.84173	.597	.88344	18.622	
Acrylonitrile	.06659	.06700	.06017	.05507	.05524	.684	.06081	9.592	(Conc=25.0,100.0,250.0,500.0,
tert-butyl Alcohol TBA	.02628	.01814	.02322	.01997	.02025	.674	.02157	14.833	(Conc=50.0,200.0,500.0,1000.0
trans-1,2-Dichloroethene	.53829	.71453	.60715	.61481	.59487	.686	.61393	10.383	
Methyl-tert-butyl Ether MTBE	.86555	.89997	.78893	.78851	.76343	.692	.82128	7.105	
1,1-Dichloroethane	.79992	.90707	.75022	.78522	.74603	.763	.79769	8.184	
Vinyl Acetate	.19148	.39777	.25340	.23794	.24610	.702	.26534	29.348	
2,2-Dichloropropane	.69328	.63486	.64683	.66095	.64779	.877	.65674	3.413	
cis-1,2-Dichloroethene	.65361	.67302	.71852	.72038	.69421	.878	.69191	4.174	
Dibromofluoromethane SURR	.70391	.70208	.72720	.70821	.68317	.983	.70491	2.231	(Conc=30.0,30.0,30.0,30.0,30.
Chloroform	.86013	1.11903	.78140	.80313	.78072	.948	.86888	16.519	
2-Butanone MEK	.04585	.08112	.10917	.09386	.09130	.886	.08426	28.134	
Bromochloromethane	.48125	.61228	.63542	.62364	.57253	.930	.58502	10.708	
1,1,1-Trichloroethane	.63927	.61869	.68380	.69615	.68042	.955	.67366	4.646	
1,1-Dichloropropene	.18731	.16795	.15970	.16149	.15507	1.024	.16622	7.584	
Carbon Tetrachloride	.57395	.54817	.63083	.75521	.59493	1.025	.62062	13.067	
1,2-Dichloroethane	.48000	.36370	.48292	.48196	.45198	1.080	.45211	11.297	
Benzene	.97645	.84742	.93750	.94792	.91430	1.074	.92472	5.259	
Trichloroethene	.21483	.39882	.38714	.40662	.37972	1.056	.35743	22.490	
1,2-Dichloropropane	.23872	.36828	.43914	.44192	.41049	1.108	.37963	22.160	
Bromodichloromethane	.66144	.63197	.68593	.71294	.67886	1.182	.67423	4.453	
Dibromomethane	.14251	.14458	.28198	.28154	.22270	1.135	.21466	32.263	
2-Chloroethyl vinyl ether	.14931	.12182	.20158	.19923	.18661	1.271	.17171	20.304	
cis-1,3-Dichloropropene	.48576	.44061	.51445	.53296	.50309	1.303	.49537	7.085	
Toluene-d8 SURR	.96073	.88585	.97656	.96725	.93579	1.377	.94524	3.859	(Conc=30.0,30.0,30.0,30.0,30.
Toluene	.59285	.54361	.56836	.57762	.55333	1.395	.56715	3.433	
trans-1,3-Dichloropropene	.38130	.34262	.45157	.44552	.42877	1.467	.40996	11.379	
1,1,2-Trichloroethane	.33236	.29451	.30082	.29597	.27822	1.519	.29238	9.858	
1,3-Dichloropropane	.93200	.41457	.51180	.49395	.45477	1.568	.48142	9.753	

RF_{xx} - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

% RSD - Percent Relative Standard Deviation

Calibration Report

Title: TECHNION INC.
Calibrated: 010502 10:19

No.	Compound	Files: >A2156 RF 5.00	>A2154 RF 20.00	>A2158 RF 50.00	>A2157 RF 100.00	>A2155 RF 150.00	RRT	RF	% RSD	
10)	Tetrachloroethene	.39511	.40146	.41769	.43825	.42256	1.557	.41501	4.145	
1)	Dibromochloromethane	.36312	.41309	.51633	.51974	.50040	1.636	.46254	15.260	
42)	1,2-Dibromoethane	.36592	.48380	.53030	.42183	.36788	.903	.47395	16.912	
3)	4-Isopropyltoluene	1.65764	1.42714	1.53626	1.20155	.95014	1.472	1.35455	20.786	
4)	Chlorobenzene	.94491	.92071	.90173	.76297	.66228	.995	.83852	14.464	
45)	1,1,1,2-Tetrachloroethane	.49737	.48166	.49606	.42021	.36088	1.014	.45124	13.200	
46)	Ethylbenzene	1.77415	1.63073	1.66178	1.39031	1.15877	1.022	1.52314	16.222	
7)	m,p-xylene	1.18779	1.07842	1.08738	.89918	.79120	1.046	1.00079	17.387	
8)	o-Xylene	.24448	.51533	.51669	.42584	.35596	1.120	.41166	27.970	
49)	Styrene	.36317	.83152	.88395	.73320	.62093	1.124	.68659	30.119	
1)	Bromoform	.31514	.26899	.40676	.24368	.22991	1.152	.29290	24.394	
.)	4-Methyl-2-pentanone MIBK	.68411	.46047	.49178	.37153	.31035	.737	.46365	30.766	
52)	2-Hexanone	.33965	.32555	.35759	.23440	.19971	.879	.29138	23.983	
53)	n-Butylbenzene	1.75482	1.49007	1.66462	1.33574	1.05300	1.561	1.45969	19.096	
9)	1,1,2,2-Tetrachloroethane	.90208	.45336	.62866	.46811	.38843	1.264	.56813	36.356	
99)	1,2,3-Trichloropropane	.31073	.32464	.44023	.31093	.25863	1.265	.32903	20.390	
56)	4-Bromofluorobenzene SURR	.83468	.74648	.84647	.68789	.58785	1.224	.74067	14.511	(Conc=30.0,30.0,30.0,30.0,30.
7)	Isopropylbenzene	1.67386	1.58537	1.66588	1.36095	1.14145	1.198	1.48550	15.495	
3)	n-Propylbenzene	2.50647	2.31890	2.24551	2.13769	1.88312	.876	2.21834	10.396	
59)	Bromobenzene	1.27269	1.09871	1.07807	.94932	.86249	.851	1.05225	14.877	
1)	1,3,5-Trimethylbenzene	1.77157	1.64668	1.51927	1.35922	1.20758	.903	1.50086	14.934	
.)	2-Chlorotoluene	1.97692	1.46461	1.55857	1.26430	1.25777	.882	1.50443	19.557	
62)	4-Chlorotoluene	1.44762	1.51868	1.61047	1.43590	1.28620	.898	1.45977	8.179	
63)	tert-Butylbenzene	1.55459	1.63881	1.48634	1.30039	1.19621	.948	1.43527	12.734	
1)	1,2,4-Trimethylbenzene	1.61720	1.52529	1.41131	1.23549	1.11983	.956	1.38182	14.783	
67)	sec-Butylbenzene	2.46651	2.28365	2.01995	1.81469	1.61670	.981	2.04030	16.830	
66)	1,3-Dichlorobenzene	1.05339	.91008	.85617	.73944	.67195	.989	.84621	17.614	
71)	1,4-Dichlorobenzene	1.30491	1.05857	.95152	.81730	.72009	1.003	.96632	23.556	
3)	1,2-Dichlorobenzene	.99125	.85049	.78343	.70235	.62734	1.059	.79097	17.693	
97)	1,2-Dibromo-3-chloropropane	.05970	.09059	.12109	.08568	.08183	1.174	.08778	25.127	
79)	Hexachlorobutadiene	.31524	.30330	.32587	.12536	.08584	1.337	.23112	50.064	
)	1,2,4-Trichlorobenzene	.60597	.57337	.59926	.51303	.45259	1.302	.54884	11.862	
72)	Naphthalene	.63234	.58236	.78111	.48767	.43559	1.335	.58381	23.060	
73)	1,2,3-Trichlorobenzene	.34265	.45543	.53168	.40617	.35340	1.374	.41787	18.658	

$\overline{RF}$ - Response Factor (Subscript is amount in ug/l)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

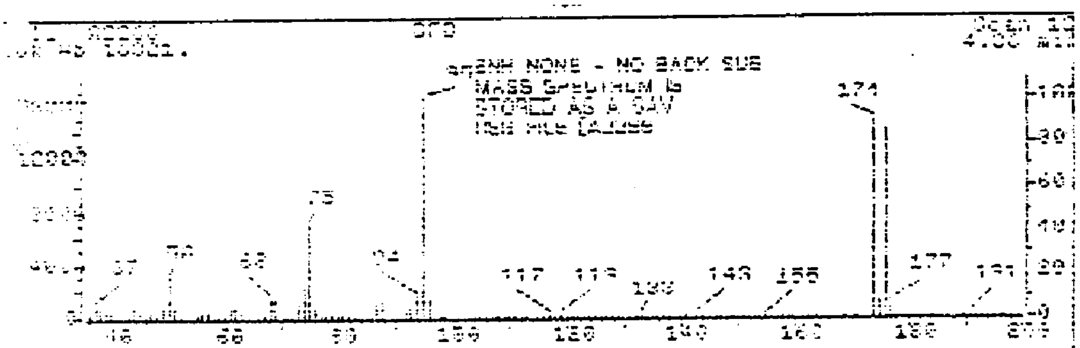
%RSD - Percent Relative Standard Deviation

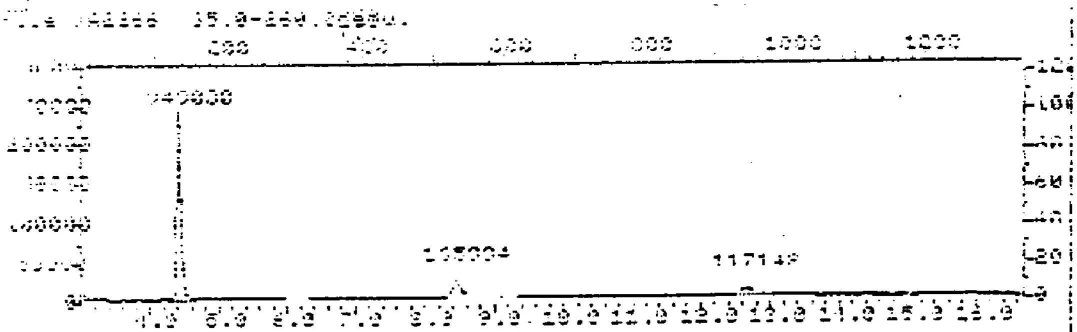
[illegible] PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
[illegible]	15-40% of mass 95	18.32	18.32	Ok
[illegible]	[illegible]	[illegible]	43.90	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
[illegible]	[illegible]	7.[illegible]	7.[illegible]	Ok
[illegible]	Less than 2% of mass 174	0.00	0.00	Ok
[illegible]	[illegible] of mass 95	[illegible]	[illegible]	Ok
[illegible]	5-9% of mass 174	6.40	7.09	Ok
[illegible]	[illegible] of mass 174	96.36	96.[illegible]	Ok
[illegible]	5-9% of mass 176	6.07	6.98	Ok

Injection Date: 06/19/**
Injection Time: 10:37
Data File: [illegible]
Scan: 132





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Calibration Check Report

Title: [illegible]
Calibrated: 010502 10:19

Check Standard Data File: [illegible]
Injection Time: **0612 11:21

Compound	RF (avg)	RF	%Diff	Calib Meth	
hlorodifluoromethane	.37656	.41046	9.00	Average	
loromethane	.37971	.37748	.59	Average	
inyl Chloride	.34716	.33251	4.22	Average	
romomethane	.24313	.21112	13.17	Average	
oroethane	.17207	.21983	29.43	Average	
Fichlorofluoromethane	.7195[illegible]	.85196	18.40	Average	
Acrolein	.00418	.00409	2.22	Average	(Conc=100.00)
1-Dichloroethene	.63089	.68647	8.81	Average	
Ethylene Chloride	.67163	.82403	22.69	Average	
cetone	.22517	.24939	10.76	Average	
rbondisulfide	.88344	1.20976	36.94	Average	
ylonitrile	.06091	.06377	4.66	Average	(Conc=100.00)
ert-butyl Alcohol TBA	.02157	.02505	16.15	Average	(Conc=200.00)
ans-1,2-Dichloroethene	.61393	.67227	9.50	Average	
hyl-tert-butyl Eter MTBE	.82128	.95136	15.84	Average	
,1-Dichloroethane	.79769	.83022	4.08	Average	
inyl Acetate	.26534	.24939	6.01	Average	
-Dichloropropene	.5[illegible]74	.[illegible]	.57	Average	
-1,2-Dichloroethene	.69191	.70387	1.73	Average	
romofluoromethane SURR	.70491	.72044	2.20	Average	(Conc=30.00)
loroform	.86888	.99728	14.78	Average	
utanone MEK	.0942[illegible]	.11370	20.07	Average	
romochloromethane	.58502	.45840	21.64	Average	
,1-Trichloroethane	.[illegible]	.[illegible]	[illegible]	Average	
-Dichloropropene	.16622	.15816	4.85	Average	
arbon Tetrachloride	.[illegible]	.[illegible]	[illegible]	Average	
,2-Dichlorethane	.45211	.41161	8.96	Average	
Benzene	.9247[illegible]	.94[illegible]	[illegible]	Average	
richloroethene	.35743	.39495	10.50	Average	
,2-Dichloropropane	.37[illegible]	.42247	11.07	Average	
romodichloromethane	.67423	.68755	1.97	Average	
ibromomethane	.21[illegible]	.24108	12.30	Average	
-Chloroethyl vinyl ether	.17171	.15928	7.24	Average	
is-1,3-Dichloropropene	.4[illegible]	.47464	4.19	Average	
uene-d8 SURR	.94524	.89759	5.04	Average	(Conc=30.00)
oluene	.[illegible]	.[illegible]00	.20	Average	
rans-1,3-Dichloropropene	.40996	.37403	8.76	Average	
,2-Trichloroethane	.29238	.28113	3.85	Average	
-Dichloropropane	.48142	.46913	2.55	Average	
etrachloroethene	.41501	.40636	2.09	Average	

RF - Response Factor from daily standard file at 20.00 ug/l

RF (avg) - Average Response Factor from Initial Calibration

%Diff - % Difference from original average or curve

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Calibration Check Report

Title: TECHNION INC.
Calibrated: 010502 10:19

Check Standard Data File: >A2267
Injection Time: **0612 11:21

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
Bromochloromethane	.46254	.46750	1.09	Average	
.2-Dibromoethane	.47395	.51571	8.81	Average	
4-Isopropyltoluene	1.35475	1.56605	15.61	Average	
lorobenzene	.83852	.95228	13.57	Average	
1,1,2-Tetrachloroethane	.45124	.49402	9.48	Average	
Ethylbenzene	1.52314	1.73724	14.06	Average	
m&p-xylene	1.00079	1.16789	16.70	Average	
Xylene	.41166	.54269	31.83	Average	
Styrene	.68675	.89461	30.30	Average	
Bromoform	.29290	.22839	22.02	Average	
Methyl-2-pentanone MIBK	.46365	.48209	3.98	Average	
Hexanone	.29138	.29815	2.32	Average	
n-Butylbenzene	1.45965	1.70541	16.84	Average	
1,2,2-Tetrachlorethane	.56813	.61873	8.91	Average	
2,3-Trichloropropane	.32903	.39311	19.48	Average	
4-Bromofluorobenzene SURR	.74067	.79855	7.81	Average	(Conc=30.00)
Isopropylbenzene	1.48550	1.65767	11.59	Average	
Propylbenzene	2.21834	2.60191	17.29	Average	
Bromobenzene	1.05225	1.15799	10.04	Average	
1,3,5-Trimethylbenzene	1.50086	1.62495	8.27	Average	
Chlorotoluene	1.50443	1.61054	7.05	Average	
Chlorotoluene	1.45977	1.61054	10.33	Average	
tert-Butylbenzene	1.43917	1.46194	1.58	Average	
2,4-Trimethylbenzene	1.38182	1.52172	10.12	Average	
Butylbenzene	2.04071	2.22623	9.11	Average	
3-Dichlorobenzene	.84621	.94094	11.19	Average	
4-Dichlorobenzene	.96632	.91492	5.72	Average	
-Dichlorobenzene	.79097	.86168	8.94	Average	
2-Dibromo-3-chloropropane	.08778	.08312	5.31	Average	
Hexachlorobutadiene	.23112	.59579	157.78	Average	
2,4-Trichlorobenzene	.56994	.57721	7.19	Average	
Naphthalene	.56381	.57352	1.76	Average	
2,3-Trichlorobenzene	.41767	.44784	7.17	Average	

RF - Response Factor from daily standard file at 20.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration

%Diff - % Difference from original average or curve

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2586-2
SAMPLE I.D.: MW-4
PROJECT: 90059-20
UNITS: mg/l

SAMPLE MATRIX: Water
DATE RECEIVED: 06/08/01
DATE EXTRACTED: 06/18/01
DATE ANALYZED: 06/21/01 and 09/12/01
MOISTURE: N/A

DUPLICATE RESULTS SUMMARY
(Metals)

Parameter	Results	Duplicate	RPD
Arsenic	<0.008	<0.008	0
Aluminum	<0.01	<0.01	0

Test results are in mg/l (ppm), unless specified.

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2586-2
SAMPLE I.D.: N/A
PROJECT: N/A
UNITS: mg/l

SAMPLE MATRIX: Water
DATE RECEIVED: N/A
DATE EXTRACTED: N/A
DATE ANALYZED: See Below
MOISTURE: N/A

INORGANIC CALIBRATION SUMMARY

Parameter	True Conc. for Initial Cal Std.	Reported Conc. For Initial Cal.	%R	MDL	Date Analyzed
Arsenic	1. 0.1	1. 0.1	100	0.008	09/12/01
	2. 0.2	2. 0.2	100		
	3. 0.3	3. 0.3	100		
Aluminum	1. 2	1. 1.8	90	0.01	06/21/01
	2. 10	2. 10.5	105		
	3. 20	3. 17.5	88		

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT:	Ammco	**SAMPLE MATRIX:**	Water
LAB ID:	2586-2	**DATE RECEIVED:**	06/08/01
SAMPLE I.D.:	MW-4	**DATE EXTRACTED:**	06/18/01
PROJECT:	90059-02	**DATE ANALYZED:**	06/21/01 and 09/12/01
UNITS:	mg/kg	**MOISTURE:**	N/A

MS
(Metals)

Parameter	Results	Spike Added	Spike Results	MSD	(%) R MS	(%) R MSD	RPD
Arsenic	N.D.	0.2	0.165	0.170	82.5	85	3%
Aluminum	N.D.	2.0	1.8	1.8	90	90	0%

Test results are in mg/l (ppm), unless specified.

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT:	Ammco	**SAMPLE MATRIX:**	Water
LAB ID:	2586-2	**DATE RECEIVED:**	06/08/01
SAMPLE I.D.:	MW-4	**DATE ANALYZED:**	06/21/01
PROJECT:	90059-20	**MOISTURE:**	N/A
UNITS:	mg/l	**DILUTION FACTOR:**	1

CHECK STANDARD

Parameters	Check Sample True Value	Results	Percent Recovery
Arsenic	0.1	0.1	100
Aluminum	2.0	1.8	90

TECHNION, INC. TESTING & RESEARCH LABORATORIES
187 Washington Avenue
Nutley, New Jersey 07110

ANALYTICAL DATA REPORT

PREPARED FOR: Ammco
65 Passaic Avenue
Kearny, NJ 07032
Attn: Ivan Rosalsky

LAB ID: 2762

PROJECT: American Modern Metals

PROJECT NO.: 90059-28

DATE RECEIVED: August 1, 2001

DATE REPORTED: August 17, 2001

RELEASE OF THE DATA CONTAINED IN THIS HARD COPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR AS VERIFIED BY THE FOLLOWING SIGNATURE.

S. S. Baturay

Susan Baturay, D.Sc. Ph.D.
Laboratory Director

NJDEPE #07004/NYDOH #11378/WBE #222141738/AIHA #18458

TECHNION, INC. TESTING & RESEARCH LABORATORIES

TABLE OF CONTENTS

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TECHNION, INC. TESTING & RESEARCH LABORATORIES
187 Washington Avenue
Nutley, New Jersey 07110
Tel No.: (973)661-0800
Fax No.: (973)661-1817

NJDEPE No.: - 07004
WBE No.: - 222141738
AIHA No.: - 18458

ANALYTICAL REPORT

CLIENT: Ammco
CLIENT REF: Project No. 90059-28
MATERIAL: Fifteen (15) Aqueous Samples

DATE: 08/17/01
TECHNION REF: 2762
DATE RECEIVED: 08/01/01
LAB ID: 01:2762

PROJECT: American Modern Metals

ANALYSIS REQ: Volatile Organics+10, and Metals (Aluminum and Arsenic)

ANALYST: Y. Bella, Y. Yildez

The above sample(s) were received on 08/01/01 and analyzed as requested.

CERTIFICATE OF ANALYSIS

ALL TEST RESULTS ARE AS ATTACHED.

RELEASE OF THE DATA CONTAINED IN THIS HARD COPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR AS VERFIED BY THE FOLLOWING SIGNATURE.

Susan E. Baturay, DSc, PhD
Laboratory Director

SB/hew

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco

LAB ID(s): 2762

DATE: 08/17/01

PROJECT: 90059-28

MATRIX: Aqueous

CROSS REFERENCE TABLE

Sample ID	Sample Location	Lab ID
2018	BEC-18S	2762-1
2012	BEC-12S	2762-2
2001	MW-1	2762-3
2101	BEC-1D	2762-4
2008	MW-8	2762-5
2016	BEC-16S	2762-6
2017	BEC-17S	2762-7
2108	MW-8	2762-8
1001	Field Blank	2762-9
1002	Trip Blank	2762-10
2009	MW-9	2762-11
2011	BEC-11S	2762-12
2004	MW-4	2762-13
2015	BEC-15S	2762-14
2014	BEC-14S	2762-15

2762

CHAIN OF CUSTODY RECORD

PAGE 1 OF 2

SITE NAME: American Modern Metals
STREET ADDRESS: Belgrade Ave
PROJECT MANAGER: Don Bello
PROJECT NUMBER: 90059-28
CITY/STATE: Kearny, NJ
LABORATORY: Technion

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE LOCATION	SAMPLE DEPTH	SAMPLE MATRIX	ANALYSES (1)	(2)	(3)	LAB NO.	COMMENTS/ADDITIONAL ANYLSES
2018	7/30/01	1255	BEC-18S	—	AQU	X				(1) VO +10
2012		1400	BEC-12S	—		X				(2) Aluminum
2001		1400	MW-1	—		X				(3) Arsenic
2101		1555	BEC-1D	—		X				
2008		1515	MW-8	—		X				
2016		1310	BEC-16S	—		X				
2017		1615	BEC-17S	—		X				
2108		1515	MW-8	—		X				
1001			Fieldblank	—		X	X	X		
1002	↓		tripblank	—		X				
2009	7/31/01	1045	MW-9	—		X	X			
2011	↓	1240	BEC-11S	—	↓		X			

SAMPLED BY: Karen Rubin/Michael Kirchhauer SIGNATURE: [signature] SHIPPED BY: _____

PRESERVATIVE ADDED: TO EMPTY CONTAINERS: _____ ON SITE: _____ IN LAB: _____ PRESERVED BY: _____

TEMP (°C) AT TIME OF LAB RECEIPT: _____

SAMPLE NO.	TYPE
1000-1999	BLANKS
2000-2999	TEST WELL WATER
3000-3999	SURFACE WATER
4000-4999	POTABLE WATER
5000-5999	LEACHATE
6000-6999	SOIL & SEDIMENT
7000-7999	WASTE
8000-8999	AIR/GAS
9000-9999	OTHER

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
1) [signature]	2)	3)	4)
TIME/DATE: 7/31/01	TIME/DATE:	TIME/DATE:	TIME/DATE:
RECIEVED BY:	**RECIEVED BY:**	**RECIEVED BY:**	**RECIVED BY:**
1) [signature]	2)	3)	4)
TIME/DATE: 8/1/01 12:46	TIME/DATE:	TIME/DATE:	TIME/DATE:

3

FORM IS R3

CHAIN OF CUSTODY RECORD

PAGE 2 OF 2

SITE NAME: American Modern Metals
STREET ADDRESS: Belgrove Ave
PROJECT MANAGER: Dan Bello

PROJECT NUMBER: 90059-28
CITY/STATE: Kearny, NJ
LABORATORY: Technion

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE LOCATION	SAMPLE DEPTH	SAMPLE MATRIX	ANALYSES (1)	(2)	(3)	LAB NO.	COMMENTS/ADDITIONAL ANYLSES
2004	7/31/01	245	MW-4		AQU		X	X		
2015	7/31/01	135	BPT-15S		AQU	X				
2014	7/31/01	225	BPT-14S		AQU	X				

SAMPLED BY: Karen Kubin / Michael Kirchenbauer SIGNATURE: Karen Kubin / Michael Kirchenbauer SHIPPED BY: _____

PRESERVATIVE ADDED: TO EMPTY CONTAINERS: _____ ON SITE: _____ IN LAB: _____ PRESERVED BY: _____

TEMP (°C) AT TIME OF LAB RECEIPT: _____

SAMPLE NO.	TYPE
1000-1999	BLANKS
2000-2999	TEST WELL WATER
3000-3999	SURFACE WATER
4000-4999	POTABLE WATER
5000-5999	LEACHATE
6000-6999	SOIL & SEDIMENT
7000-7999	WASTE
8000-8999	AIR/GAS
9000-9999	OTHER

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
1) Karen Kubin	2)	3)	4)
TIME/DATE: 7/31/01	TIME/DATE:	TIME/DATE:	TIME/DATE:
RECIEVED BY:	**RECIEVED BY:**	**RECIEVED BY:**	**RECIVED BY:**
1)	2)	3)	4)
TIME/DATE: 8/1/01 12:54	TIME/DATE:	TIME/DATE:	TIME/DATE:

FORMS-B3

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco LAB ID(s): 2762

DATE: 08/17/01 PROJECT: 90059-28

METHODOLOGY REVIEW

Parameter	EPA Method
Volatile Organics+10	624
Arsenic	206.2
Aluminum	202.1

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: See Below

DATE RECEIVED: 08/01/01
PROJECT: 90059-28

LABORATORY CHRONICLE

LAB ID	HOLDING TIME VOA+10	HOLDING TIME Metals	DATE EXTRACTED/ DIGESTED VOA+10	DATE EXTRACTED/ DIGESTED Metals	DATE ANALYZED VOA+10	DATE ANALYZED Metals
2762-1	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-2	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-3	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-4	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-5	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-6	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-7	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-8	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-9	7/40 Days	6 Months	N/A	08/08/01	08/09/01	08/14/01
2762-10	7/40 Days	N/A	N/A	N/A	08/ /01	N/A
2762-11	7/40 Days	6 Months	N/A	08/08/01	08/09/01	08/14/01
2762-12	N/A	6 Months	N/A	08/08/01	N/A	08/14/01
2762-13	N/A	6 Months	N/A	08/08/01	N/A	08/14/01
2762-14	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-15	7/40 Days	N/A	N/A	N/A	08/09/01	N/A

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: ~~See Below~~ 2762

DATE RECEIVED: 08/01/01
PROJECT: 90059-28

LABORATORY CHRONICLE

LAB ID	HOLDING TIME VOA+10	HOLDING TIME Metals	DATE EXTRACTED/ DIGESTED VOA+10	DATE EXTRACTED/ DIGESTED Metals	DATE ANALYZED VOA+10	DATE ANALYZED Metals
2762-1	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-2	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-3	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-4	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-5	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-6	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-7	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-8	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-9	7/40 Days	6 Months	N/A	08/08/01	08/09/01	08/14/01 and 9/12/01 ✓
2762-10	7/40 Days	N/A	N/A	N/A	08/ /01	N/A
2762-11	7/40 Days	6 Months	N/A	08/08/01	08/09/01	08/14/01
2762-12	N/A	6 Months	N/A	08/08/01	N/A	08/14/01
2762-13	N/A	6 Months	N/A	08/08/01	N/A	08/14/01 and 9/12/01 ✓
2762-14	7/40 Days	N/A	N/A	N/A	08/09/01	N/A
2762-15	7/40 Days	N/A	N/A	N/A	08/09/01	N/A

Revised 9/12

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco LAB ID: 2762

DATE: 08/17/01 PROJECT: 90059-28

STATEMENT OF NONCONFORMANCE

All parameters are in total compliance with Volatile Organics+1 (624), Arsenic (206.2), Aluminum (202.1), and Quality Control/Quality Assurance Requirements.

Omar Baturay
Laboratory Manager

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
DATE: 08/17/01

LAB ID: 2762
PROJECT: 90059-28

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	GC/MS Tune Specifications		
	a. BFB passed	___	_X_
	b. DFTPP passed	___	_X_
2.	GC/MS Tuning Frequency - Performed every 12 hours	___	_X_
3.	GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours before sample analysis	___	_X_
4.	GC/MS Calibration Requirements		
	a. Calibration Check Compounds	___	_X_
	b. System Performance Check Compounds	___	_X_
5.	Blank Contamination - List compounds for each fraction	_X_	___
	a. VOA Fraction:		
	b. B/N Fraction:		
	c. Acid Fraction:		
6.	Surrogate Recoveries Meet Criteria (if not met; list those compounds and their recoveries which fall outside the acceptable range)	___	_X_
	a. VOA Fraction		
	b. B/N Fraction		
	c. Acid Fraction		
7.	Extraction Holding Time Met	___	_X_
	Comments:		
8.	Analysis Holding Time Met	___	_X_
	Comments:		

Additional Comments: _____

Laboratory Manager: _____ Date: 8/17/01

noncon

VOLATILE ORGANICS+10 ANALYSIS DATA SHEETS

WITH TICs

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2018
LAB ID:	2762-1	LAB FILE ID:	>A2375
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-12:39	MATRIX:	Water
DESCRIPTION:	BEC-18S		

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	2	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	0.4 J	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	157	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	0.9 J	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	281	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1
tert-butyl benzene	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2018
LAB ID:	2762-1	LAB FILE ID:	>A2375
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-12:39	MATRIX:	Water
DESCRIPTION:	BEC-18S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-2
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-13:35
DESCRIPTION: BEC-12S

SAMPLE ID: 2012
LAB FILE ID: >A2376
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	6	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	828	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	3	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	191	1 U	1
Trichlorofluoromethane	0.3 J	5 U	5
Vinyl Chloride	16 J	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2012
LAB ID:	2762-2	LAB FILE ID:	>A2376
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-13:35	MATRIX:	Water
DESCRIPTION:	BEC-12S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-3
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-14:29
DESCRIPTION: MW-1

SAMPLE ID: 2001
LAB FILE ID: >A2377
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2001
LAB ID:	2762-3	LAB FILE ID:	>A2377
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-14:29	MATRIX:	Water
DESCRIPTION:	MW-1		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 3

COMPOUND	RT	RESULTS
4-Isopropyltoluene	23.55	2.24
n-propylbenzene	19.93	1.56
1,2,4-Trimethylbenzene	21.74	10.51

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-4
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-14:29
DESCRIPTION: BEC-1D

SAMPLE ID: 2101
LAB FILE ID: >A2378
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	6	1 U	1
Bromodichloromethane	4	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	22	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	3	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	0.8	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	0.2 J	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 J	1 U	1
cis-1,2-Dichloroethene	21	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	2	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	0.7	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	193	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
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J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2101
LAB ID:	2762-4	LAB FILE ID:	>A2378
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-14:29	MATRIX:	Water
DESCRIPTION:	BEC-1D		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-5
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-16:12
DESCRIPTION: MW-8

SAMPLE ID: 2008
LAB FILE ID: >A2379
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	13	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	0.7	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
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J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2008
LAB ID:	2762-5	LAB FILE ID:	>A2379
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-16:12	MATRIX:	Water
DESCRIPTION:	MW-8		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 1

COMPOUND	RT	RESULTS
Tert-butyl Alcohol	4.75	2.59

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2016
LAB ID:	2762-6	LAB FILE ID:	>A2380
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-17:01	MATRIX:	Water
DESCRIPTION:	BEC-16S		

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	2	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	19	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	107	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1
tert-butyl Alcohol	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
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J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2016
LAB ID:	2762-6	LAB FILE ID:	>A2380
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-17:01	MATRIX:	Water
DESCRIPTION:	BEC-16S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2017
LAB ID:	2762-7	LAB FILE ID:	>A2381
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-17:48	MATRIX:	Water
DESCRIPTION:	BEC-17S		

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	2	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2017
LAB ID:	2762-7	LAB FILE ID:	>A2381
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-17:48	MATRIX:	Water
DESCRIPTION:	BEC-17S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2108
LAB ID:	2762-8	LAB FILE ID:	>A2382
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-18:33	MATRIX:	Water
DESCRIPTION:	MW-8		

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	2	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1
Methyl tert-butyl-Alcohol	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2108
LAB ID:	2762-8	LAB FILE ID:	>A2382
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-18:33	MATRIX:	Water
DESCRIPTION:	MW-8		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-9
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-19:18
DESCRIPTION: Field Blank

SAMPLE ID: 1001
LAB FILE ID: >A2383
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	1001
LAB ID:	2762-9	LAB FILE ID:	>A2383
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-19:18	MATRIX:	Water
DESCRIPTION:	Field Blank		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-10
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-20:02
DESCRIPTION: Trip Blank

SAMPLE ID: 1002
LAB FILE ID: >A2384
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	1002
LAB ID:	2762-10	LAB FILE ID:	>A2384
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-20:02	MATRIX:	Water
DESCRIPTION:	Trip Blank		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-11
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-21:16
DESCRIPTION: MW-9

SAMPLE ID: 2009
LAB FILE ID: >A2385
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	0.2 J	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	3	1 U	1
m,p-Xylenes	0.7 J	1 U	1

U - Indicates that the compound was analyzed for but not detected.
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NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2009
LAB ID:	2762-11	LAB FILE ID:	>A2385
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-21:16	MATRIX:	Water
DESCRIPTION:	MW-9		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 9

COMPOUND	RT	RESULTS
4-Isopropyltoluene	22.70	5.45
Styrene	17.36	0.105
n-Butylbenzene	24.19	7.36
1,2,3-Trichloropropane	19.89	0.803
Isopropylbenzene	18.58	16.32
n-propylbenzene	19.90	2.01
1,3,5-trimethylbenzene	20.52	7.68
tert-butylbenzene	21.51	0.98
1,2,4-trimethylbenzene	21.71	264.83

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-14
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-22:01
DESCRIPTION: BEC-15S

SAMPLE ID: 2015
LAB FILE ID: >A2386
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l (ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2015
LAB ID:	2762-14	LAB FILE ID:	>A2386
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-22:01	MATRIX:	Water
DESCRIPTION:	BEC-15S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 1

COMPOUND	RT	RESULTS
Methyl-tert-butyl ether	4.96	2.51

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2762-15
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/09/01-22:45
DESCRIPTION: BEC-14S

SAMPLE ID: 2014
LAB FILE ID: >A2387
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	0.3 J	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	13	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	232	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	142	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	2014
LAB ID:	2762-15	LAB FILE ID:	>A2387
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-22:45	MATRIX:	Water
DESCRIPTION:	BEC-14S		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 4

COMPOUND	RT	RESULTS
Vinyl Chloride	2.81	5.80
Tert-butyl-Alcohol	4.79	72.03
Methyl-tert-butyl ether	4.95	15.88
1,1-Dichloropropene	7.16	0.614

METALS ANALYSIS DATA SHEETS

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 1001
LAB SAMPLE ID: 2762-9
DESCRIPTION: Field Blank

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 08/01/01
DATE DIGESTED: 08/08/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Aluminum	<0.01	<0.01	0.01	202.1	08/14/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2009
LAB SAMPLE ID: 2762-11
DESCRIPTION: MW-9

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 08/01/01
DATE DIGESTED: 08/08/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Aluminum	<0.01	<0.01	0.01	202.1	08/14/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2011
LAB SAMPLE ID: 2762-12
DESCRIPTION: BEC-11S

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 08/01/01
DATE DIGESTED: 08/08/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Aluminum	<0.01	<0.01	0.01	202.1	08/14/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 2004
LAB SAMPLE ID: 2762-13
DESCRIPTION: MW-4

SAMPLE MATRIX: Aqueous
DATE RECEIVED: 08/01/01
DATE DIGESTED: 08/08/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Arsenic	<0.008	<0.008	0.008	206.2	09/12/01
Aluminum	<0.01	<0.01	0.01	202.1	08/14/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
SAMPLE ID: 1001
LAB SAMPLE ID: 2762-9
DESCRIPTION: Field Blank

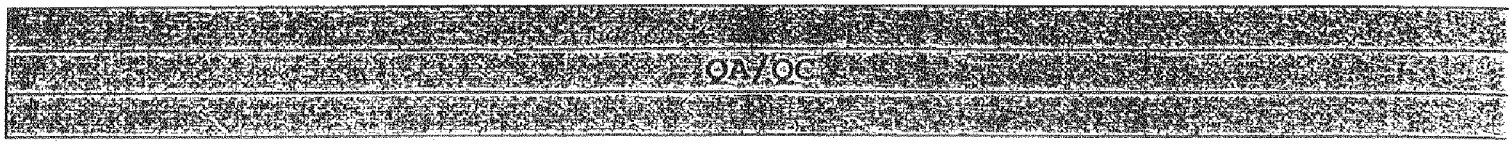
SAMPLE MATRIX: Aqueous
DATE RECEIVED: 08/01/01
DATE DIGESTED: 08/08/01
DATE ANALYZED: See Below

TEST RESULTS FOR METALS
(EPA Method 200 Series)

Parameters	Results	Blank	MDL	EPA Method	Date Analyzed
Arsenic	<0.008	<0.008	0.008	206.2	09/12/01
Aluminum	<0.01	<0.01	0.01	202.1	08/14/01

Test results are in mg/l (ppm), unless specified.

MDL: Minimum Detection Limit



TECHNION INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco

FILE ID: MS - ^A2390 - MS
MSD- ^A2389 - MSD

DATE ANALYZED: 08/10/01

SAMPLE MATRIX: Water

LAB CODE: 07004

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Compounds	Spike Added (ug/L)	Sample Concentration (ug/L)	MS Concentration (ug/L)	MS % Rec. #	QC Limits Rec.
Trichloroethene	20	0	18.6	93	71 - 120
Benzene	20	0	22.8	114	76 - 127
Toluene	20	0	22.5	112	76 - 125
Chlorobenzene	20	0	21.2	106	75 - 130

Compounds	Spike Added (ug/L)	MSD Concentration (ug/L)	MSD % Recovery # (ug/L)	% RPD	QC Limits RPD	REC
Trichloroethene	20	18.3	91	2	14	71 - 120
Benzene	20	23.2	116	1.7	11	76 - 127
Toluene	20	22.2	111	0.9	13	76 - 125
Chlorobenzene	20	21.4	107	0.9	13	75 - 130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC Limits
RPD: of outside limits
Spike Recovery: out of outside limits

VOAMSD-w

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	N/A
LAB ID:	Method Blank	LAB FILE ID:	>A2374
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-11:41	MATRIX:	Water

(EPA Method 624) UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	N/A
LAB ID:	Method Blank	LAB FILE ID:	>A2374
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/09/01-11:41	MATRIX:	Water

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: Method Blank
PROJECT: 90059-28
DATE RECEIVED: 08/01/01
DATE EXTRACTED: N/A
DATE ANALYZED: 08/10/01-04:37

SAMPLE ID: N/A
LAB FILE ID: >A2392
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l (ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	N/A
LAB ID:	Method Blank	LAB FILE ID:	>A2392
PROJECT:	90059-28	DILUTION FACTOR:	1
DATE RECEIVED:	08/01/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	08/10/01-04:37	MATRIX:	Water

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

COMPOUND	RT	RESULTS

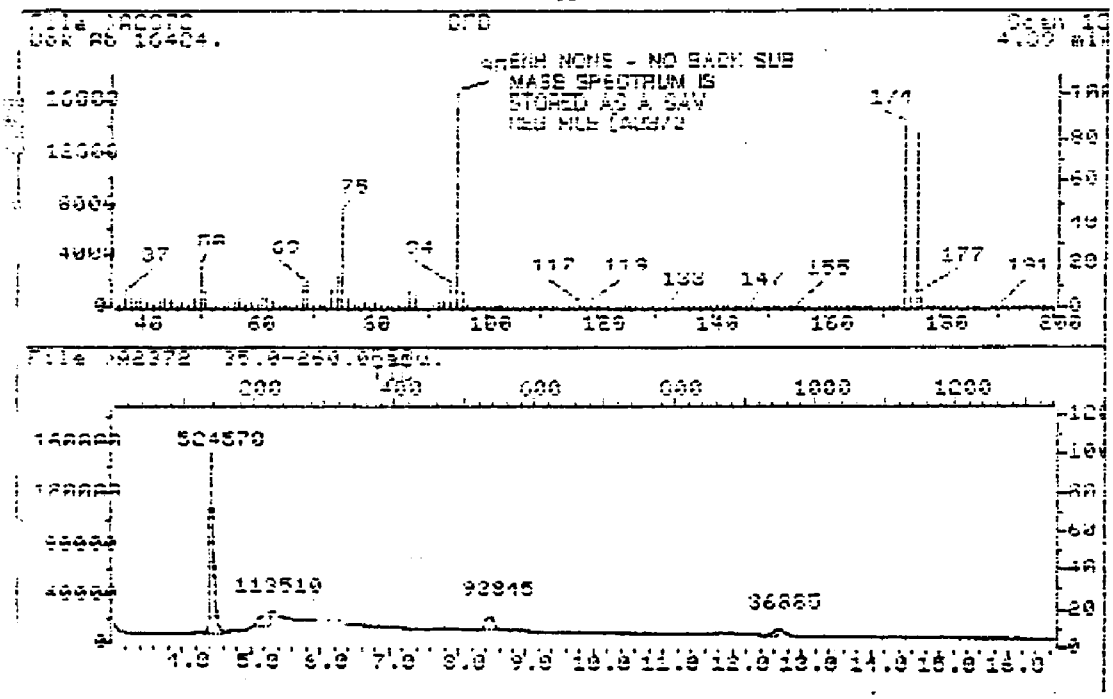
NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	18.76	19.76	Ok
75	30-60% of mass 95	45.07	47.47	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.13	7.13	Ok
173	Less than 2% of mass 174	.91	.95	Ok
174	Greater than 50% of mass 95	86.09	86.09	Ok
175	5-9% of mass 174	6.14	7.13	Ok
176	95-101% of mass 174	83.15	96.99	Ok
177	5-9% of mass 176	5.99	7.21	Ok

Injection Date: 08/09/**
Injection Time: 09:54
Data File: M2372
Scan: 136



Calibration Check Report

Title: TECHNION INC.
Calibrated: 010502 10:23

Check Standard Data File: >A2373
Injection Time: **0809 10:42

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
Dichlorodifluoromethane	.37656	.35386	6.03	Average	
Chloromethane	.37971	.32588	14.18	Average	
Vinyl Chloride	.34716	.40447	16.51	Average	
Bromomethane	.24313	.11512	52.65	Average	
Chloroethane	.17207	.20495	19.11	Average	
Trichlorofluoromethane	.71996	.79977	11.33	Average	
Acrolein	.00418	.00374	10.47	Average	(Conc=100.00)
1,1-Dichloroethene	.63033	.63034	.13	Average	
Methylene Chloride	.67163	.72352	7.73	Average	
Acetone	.22517	.20148	10.52	Average	
Carbondisulfide	.88344	1.13879	28.90	Average	
Acrylonitrile	.06061	.05946	2.23	Average	(Conc=100.00)
tert-butyl Alcohol TBA	.02157	.02249	4.24	Average	(Conc=200.00)
trans-1,2-Dichloroethene	.61573	.63004	2.32	Average	
Methyl-tert-butyl Eter MTBE	.82128	.95622	16.43	Average	
1,1-Dichloroethane	.79769	.79376	.52	Average	
Vinyl Acetate	.26534	.27947	5.33	Average	
2,2-Dichloropropane	.57674	.61433	6.46	Average	
cis-1,2-Dichloroethene	.69191	.67925	1.83	Average	
Dibromoflouromethane SURR	.70491	.69754	1.05	Average	(Conc=50.00)
Chloroform	.86898	.75656	12.93	Average	
2-Butanone MEK	.08426	.08833	4.83	Average	
Bromochloromethane	.58502	.55320	5.44	Average	
1,1,1-Trichloroethane	.67366	.60989	9.47	Average	
1,1-Dichloropropene	.16622	.15251	8.25	Average	
Carbon Tetrachloride	.62062	.54705	11.85	Average	
1,2-Dichlorethane	.45211	.40374	10.70	Average	
Benzene	.92472	.94139	1.83	Average	
Trichloroethene	.35743	.40770	14.07	Average	
1,2-dichloropropane	.37963	.40284	6.11	Average	
Bromodichloromethane	.67423	.59929	11.11	Average	
Dibromomethane	.21466	.17876	16.73	Average	
2-Chloroethyl vinyl ether	.17171	.15219	11.37	Average	
cis-1,3-Dichloropropene	.49337	.44671	9.42	Average	
Toluene-d8 SURR	.94524	.90947	3.78	Average	(Conc=50.00)
Toluene	.56715	.56964	.44	Average	
trans-1,3-Dichloropropene	.40996	.35574	13.23	Average	
1,1,2-Trichloroethane	.29238	.27455	6.10	Average	
1,3-Dichloropropane	.48142	.45076	6.37	Average	
Tetrachloroethene	.41501	.40506	2.40	Average	

RF - Response Factor from daily standard file at 20.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration

%Diff - % Difference from original average or curve

Calibration Check Report

Title: TECHNION INC.
Calibrated: 010502 10:23

Check Standard Data File: >A2373
Injection Time: **0809 10:42

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
bromochloromethane	.46294	.41861	9.58	Average	
2-Dibromoethane	.47395	.49925	5.34	Average	
p-Isopropyltoluene	1.35499	1.48441	9.59	Average	
Chlorobenzene	.83852	.92087	9.82	Average	
1,1,2-Tetrachloroethane	.45124	.46390	2.81	Average	
Ethylbenzene	1.52314	1.64930	8.28	Average	
m,p-xylene	1.00079	1.07640	7.55	Average	
o-Xylene	.41166	.51203	24.38	Average	
Styrene	.68699	.85601	24.68	Average	
Bromoform	.29290	.32451	10.80	Average	
Methyl-2-pentanone MIBK	.46369	.48504	4.61	Average	
Hexanone	.29138	.24125	17.20	Average	
n-Butylbenzene	1.49769	1.64286	12.55	Average	
1,2,2-Tetrachloroethane	.56813	.46973	17.32	Average	
2,3-Trichloropropane	.32903	.37329	13.45	Average	
4-Bromofluorobenzene SURR	.74067	.82311	11.13	Average	(Conc=30.00)
Isopropylbenzene	1.48550	1.60205	7.85	Average	
Propylbenzene	2.21834	2.19113	1.23	Average	
Bromobenzene	1.05215	1.07789	2.44	Average	
1,3,5-Trimethylbenzene	1.50086	1.49792	.20	Average	
Chlorotoluene	1.50443	1.53856	2.27	Average	
Chlorotoluene	1.45977	1.53856	5.40	Average	
tert-Butylbenzene	1.43527	1.40555	2.07	Average	
1,2,4-Trimethylbenzene	1.38182	1.42150	2.87	Average	
s-Butylbenzene	1.64050	1.64771	.44	Average	
1,3-Dichlorobenzene	.84621	.85776	1.37	Average	
1,4-Dichlorobenzene	.95671	.84628	11.38	Average	
1,2-Dichlorobenzene	.79097	.77611	1.88	Average	
1,2-Dibromo-3-chloropropane	.08773	.08108	7.67	Average	
Hexachlorobutadiene	.23112	.21192	8.31	Average	
1,2,4-Trichlorobenzene	.74834	.76627	3.61	Average	
Naphthalene	.58381	.64874	11.12	Average	
1,2,3-Trichlorobenzene	.41787	.47275	13.15	Average	

RF - Response Factor from daily standard file at 30.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration

%Diff - % Difference from original average or curve

Calibration Check Report

Title: TECHNION INC.
Calibrated: 010502 10:23

Check Standard Data File: >A0391
Injection Time: **0810 03:46

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
Dichlorodifluoromethane	.37656	.34385	8.69	Average	
Chloromethane	.37971	.38082	.29	Average	
Vinyl Chloride	.34716	.38594	11.05	Average	
Bromomethane	.24313	.16780	31.11	Average	
Chloroethane	.17207	.23049	33.95	Average	
Trichlorofluoromethane	.21956	.23961	15.29	Average	
Acrolein	.00418	.00432	3.34	Average	(Conc=100.00)
1,1-Dichloroethene	.63068	.77239	22.45	Average	
Methylene Chloride	.67163	.57267	14.70	Average	
Acetone	.22917	.25181	11.87	Average	
Carbondisulfide	.88344	.88427	.09	Average	
Acrylonitrile	.04051	.09229	51.76	Average	(Conc=100.00)
tert-butyl Alcohol TBA	.02197	.05171	47.00	Average	(Conc=200.00)
trans-1,2-Dichloroethene	.61395	.77239	25.50	Average	
Methyl-tert-butyl Ether MTBE	.82128	1.03737	26.31	Average	
1,1-Dichloroethane	.79765	.90911	13.47	Average	
Vinyl Acetate	.26534	.29898	12.53	Average	
2,2-Dichloropropane	.65674	.69538	5.96	Average	
cis-1,2-Dichloroethene	.69191	.84409	21.99	Average	
Dibromofluoromethane SURR	.70491	.78126	10.83	Average	(Conc=50.00)
Chloroform	.86689	1.22026	40.44	Average	
2-Butanone MEK	.08426	.13265	57.45	Average	
Bromochloromethane	.58502	.63321	8.24	Average	
1,1,1-Trichloroethane	.67966	.70132	4.11	Average	
1,1-Dichloropropene	.16622	.17900	7.68	Average	
Carbon Tetrachloride	.62662	.57177	7.87	Average	
1,2-Dichloroethane	.49211	.59010	21.67	Average	
Benzene	.92472	1.07530	16.28	Average	
Trichloroethene	.39743	.39630	10.87	Average	
1,2-Dichloropropane	.37963	.49512	30.45	Average	
Bromodichloromethane	.67425	.72030	6.83	Average	
Dibromomethane	.21466	.27720	29.13	Average	
2-Chloroethyl vinyl ether	.17171	.22358	30.21	Average	
cis-1,3-Dichloropropene	.49537	.51264	3.49	Average	
Toluene-d8 SURR	.94524	.96866	2.48	Average	(Conc=50.00)
Toluene	.56715	.61380	8.23	Average	
trans-1,3-Dichloropropene	.40996	.42432	3.50	Average	
1,1,2-Trichloroethane	.29238	.32903	12.54	Average	
1,3-Dichloropropane	.48142	.59910	24.45	Average	
Tetrachloroethene	.41501	.35997	14.23	Average	

RF - Response Factor from daily standard file at 20.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration

%Diff - % Difference from original average or curve

Calibration Check Report

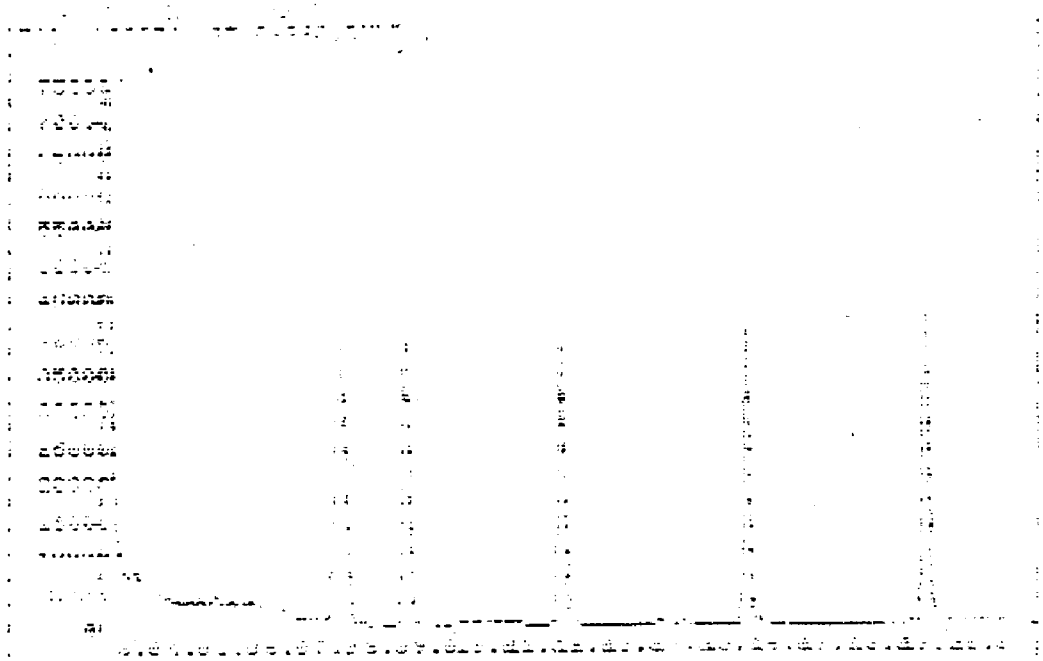
Title: TECHNION INC.
Calibrated: 910502 13:05

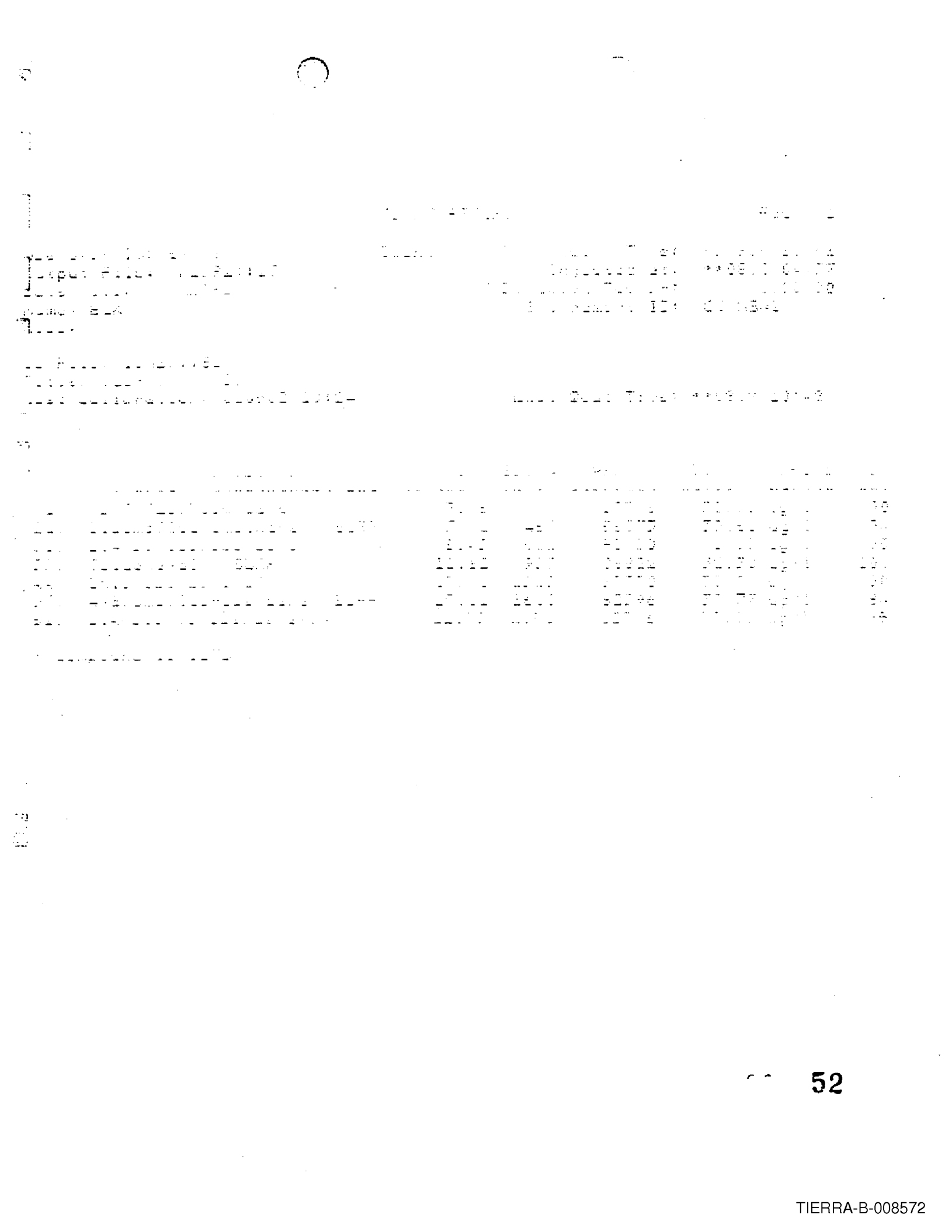
Check Standard Data File: >A2391
Injection Time: **0810 03:46

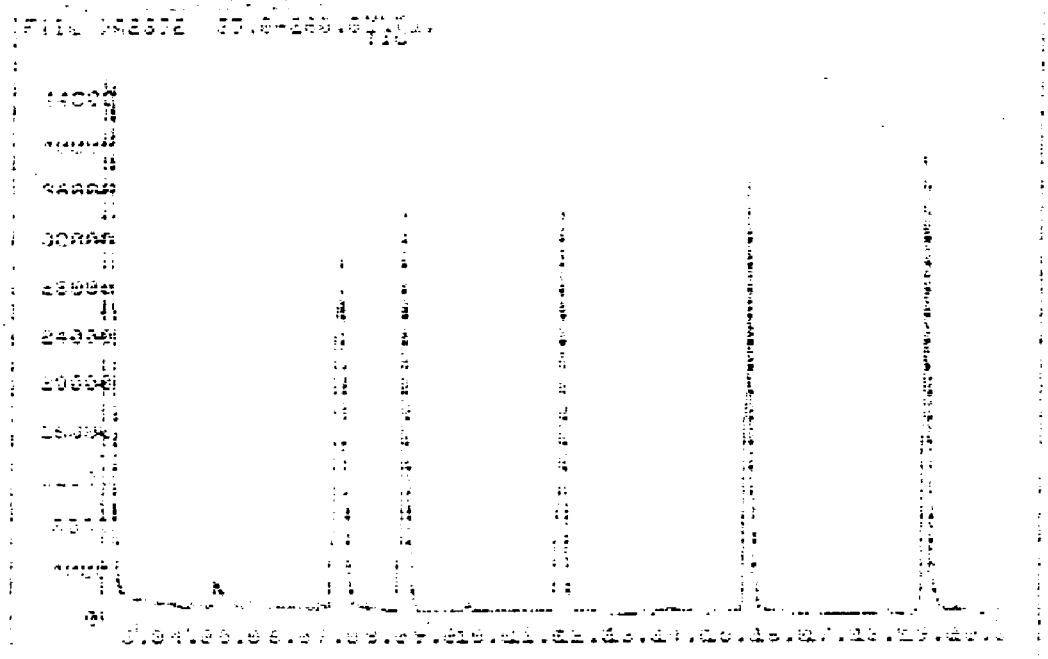
Compound	$\overline{RF}$	RF	%Diff	Calib Meth
Dibromochloromethane	.46254	.48237	4.28	Average
1,2-Dibromoethane	.47395	.58715	23.88	Average
4-Isopropyltoluene	[illegible]	[illegible]	21.41	Average
Chlorobenzene	.83852	.96075	14.58	Average
1,1,1,2-Tetrachloroethane	[illegible]	[illegible]	4.35	Average
Ethylbenzene	1.52314	1.81383	19.08	Average
m,p-Xylene	[illegible]	[illegible]	16.11	Average
o-Xylene	.41166	.55045	33.71	Average
Styrene	[illegible]	[illegible]	22.12	Average
Bromoform	.29290	.41374	41.26	Average
4-Methyl-2-pentanone MIBK	[illegible]	[illegible]	19.39	Average
2-Hexanone	.29139	.28962	.60	Average
n-Butylbenzene	[illegible]	[illegible]	22.21	Average
1,1,2,2-Tetrachlorethane	.56515	.69779	22.82	Average
1,2,3-Trichloropropane	[illegible]	[illegible]	19.23	Average
4-Bromofluorobenzene SURR	.74067	.90272	21.88	Average (Conc=30.00)
Isopropylbenzene	[illegible]	[illegible]	17.35	Average
n-Propylbenzene	2.21834	2.58215	16.40	Average
Bromobenzene	[illegible]	[illegible]	20.51	Average
1,3,5-Trimethylbenzene	1.50086	1.69721	13.08	Average
2-Chlorotoluene	[illegible]	[illegible]	23.13	Average
4-Chlorotoluene	1.45977	1.85236	26.89	Average
tert-Butylbenzene	[illegible]	[illegible]	19.17	Average
1,2,4-Trimethylbenzene	1.38182	1.55832	12.77	Average
sec-Butylbenzene	[illegible]	[illegible]	12.39	Average
1,3-Dichlorobenzene	.84621	.91852	8.55	Average
1,4-Dichlorobenzene	[illegible]	[illegible]	1.79	Average
1,2-Dichlorobenzene	.79097	.87105	10.12	Average
1,2-Dibromo-3-chloropropane	[illegible]	[illegible]	24.35	Average
Hexachlorobutadiene	.23112	.25544	10.52	Average
1,2,4-Trichlorobenzene	[illegible]	.57121	22.41	Average
Naphthalene	.58381	.84059	43.98	Average
1,2,3-Trichlorobenzene	[illegible]	[illegible]	36.82	Average

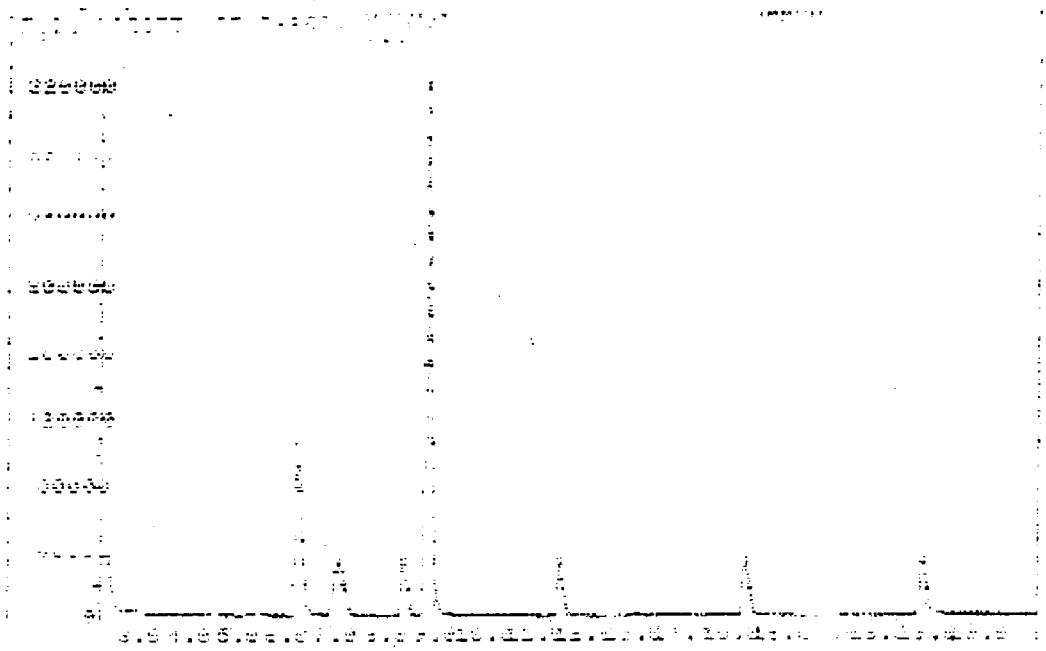
RF - Response Factor from daily standard file at 20.00 ug/l

$\overline{RF}$ - Average Response Factor from Initial Calibration









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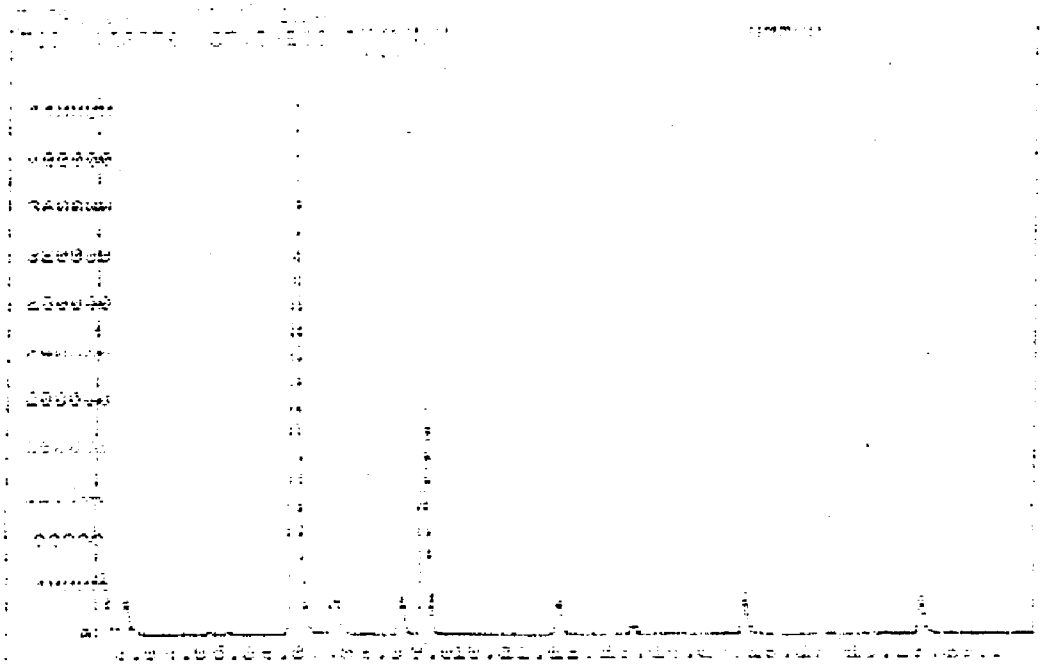

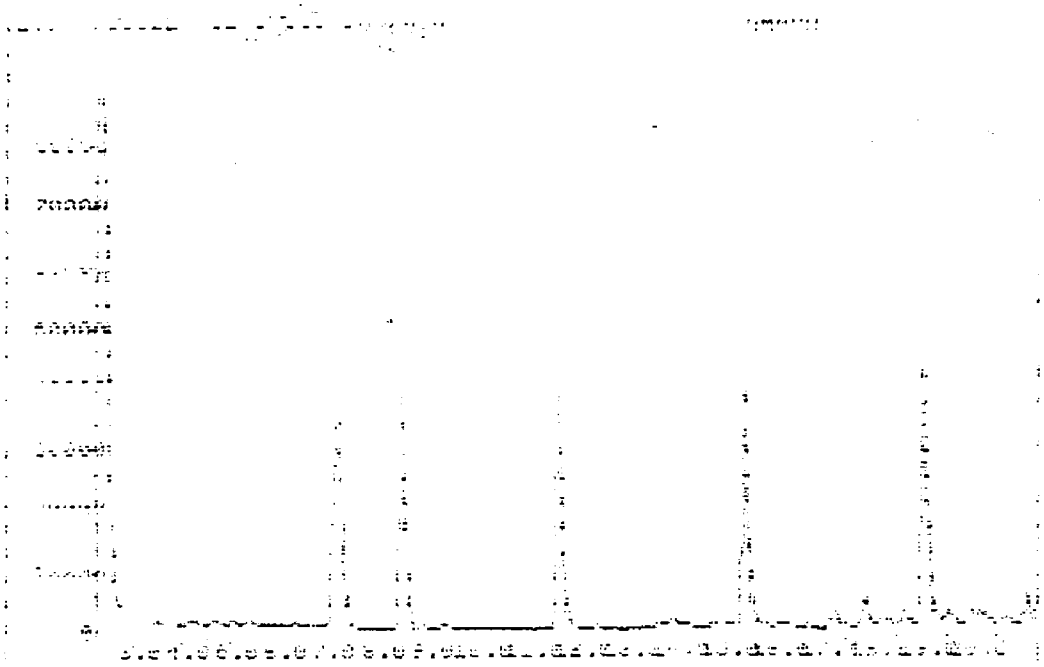

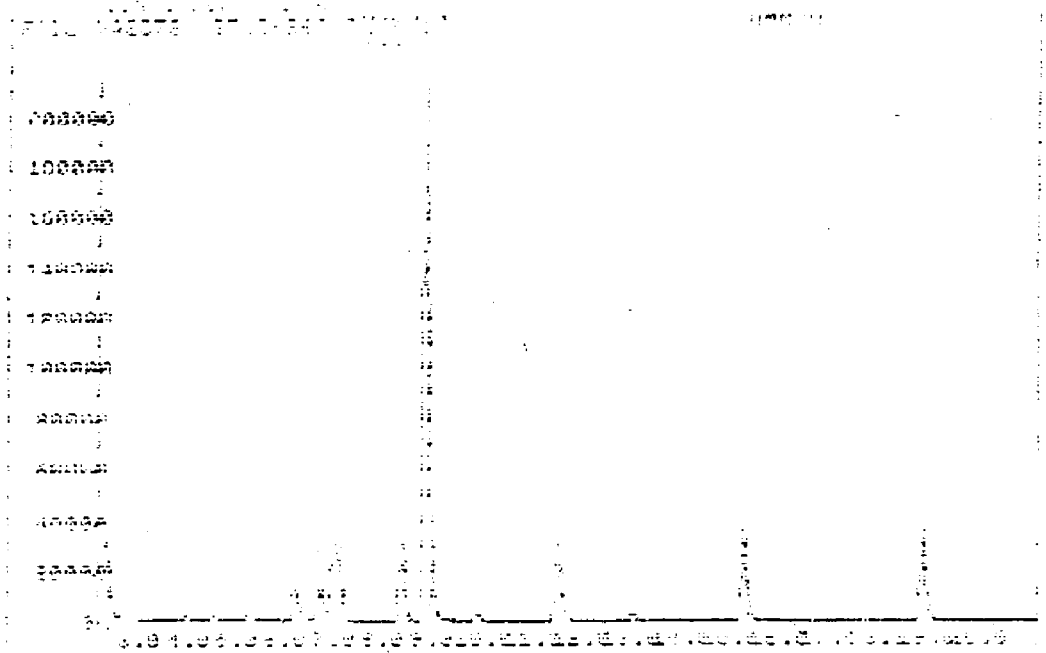

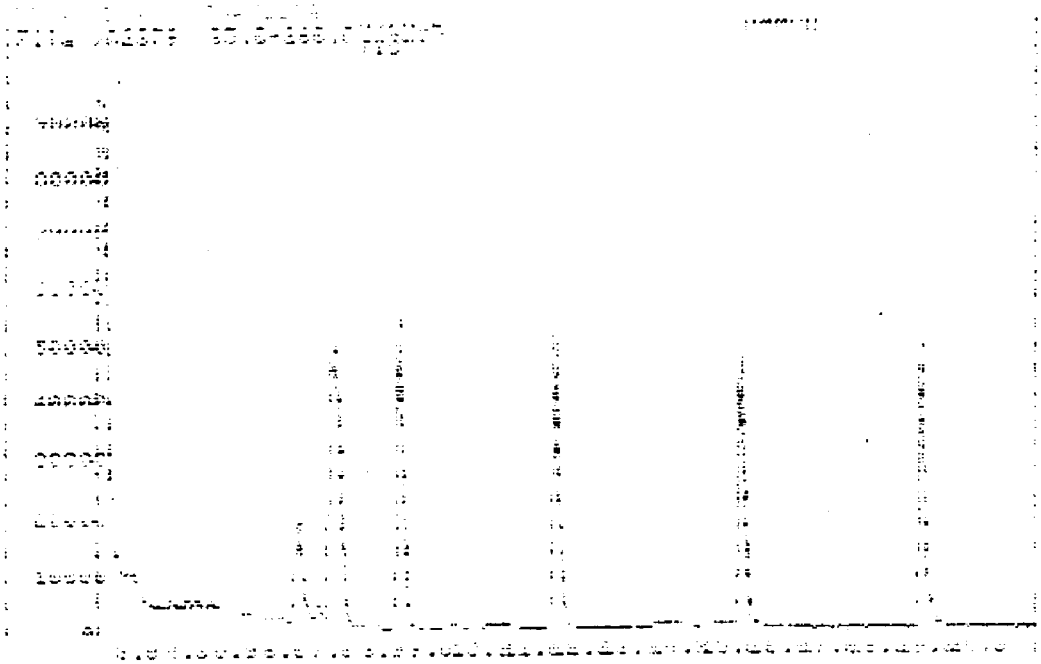

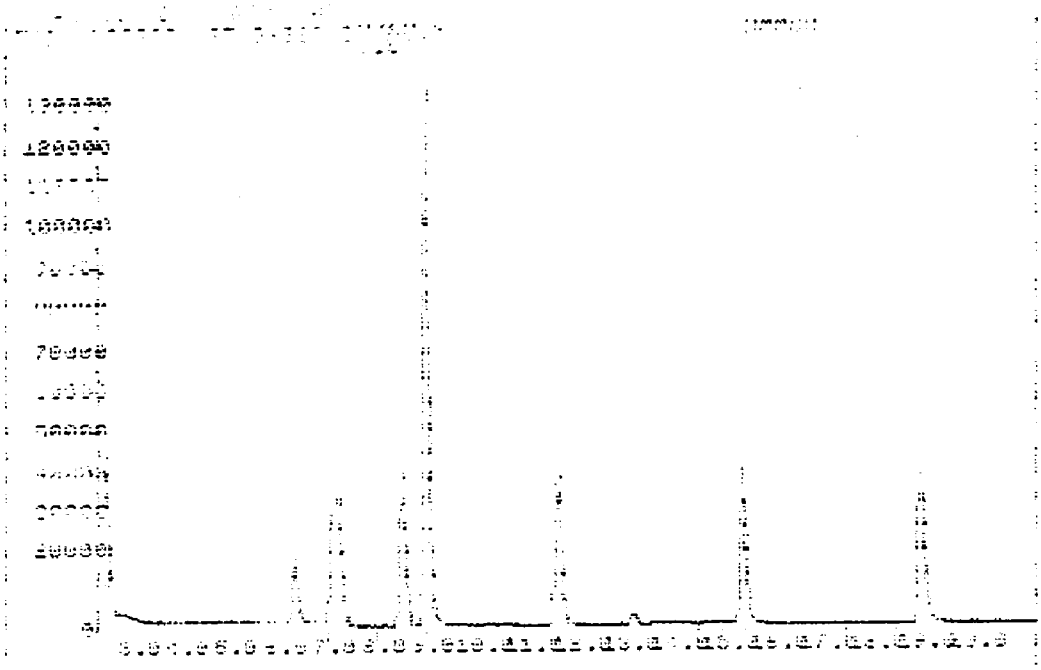

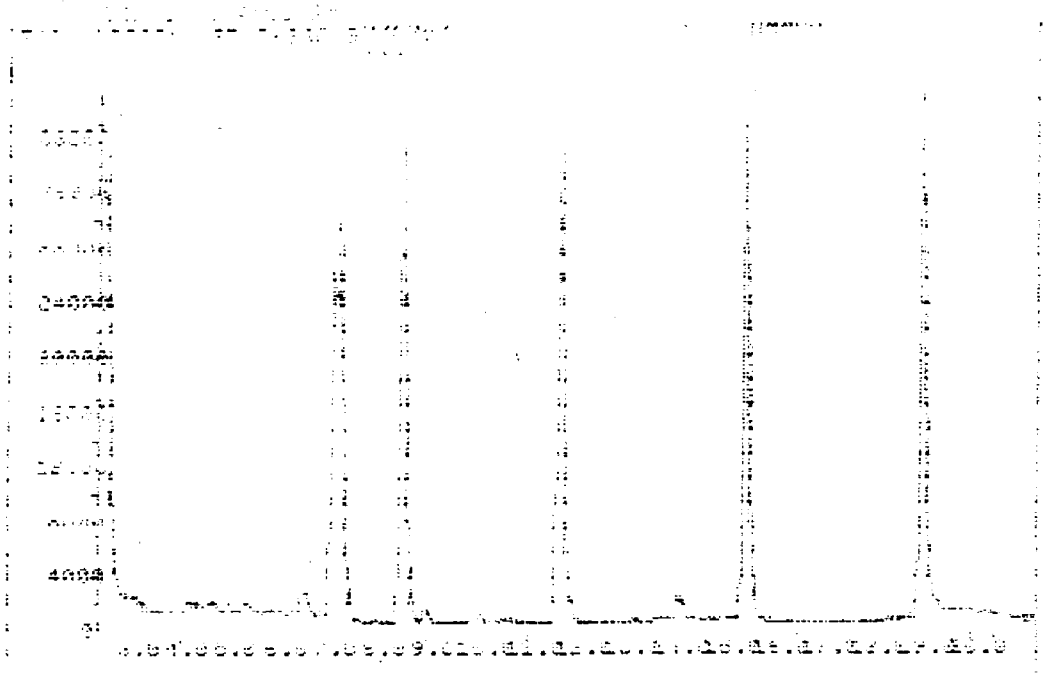

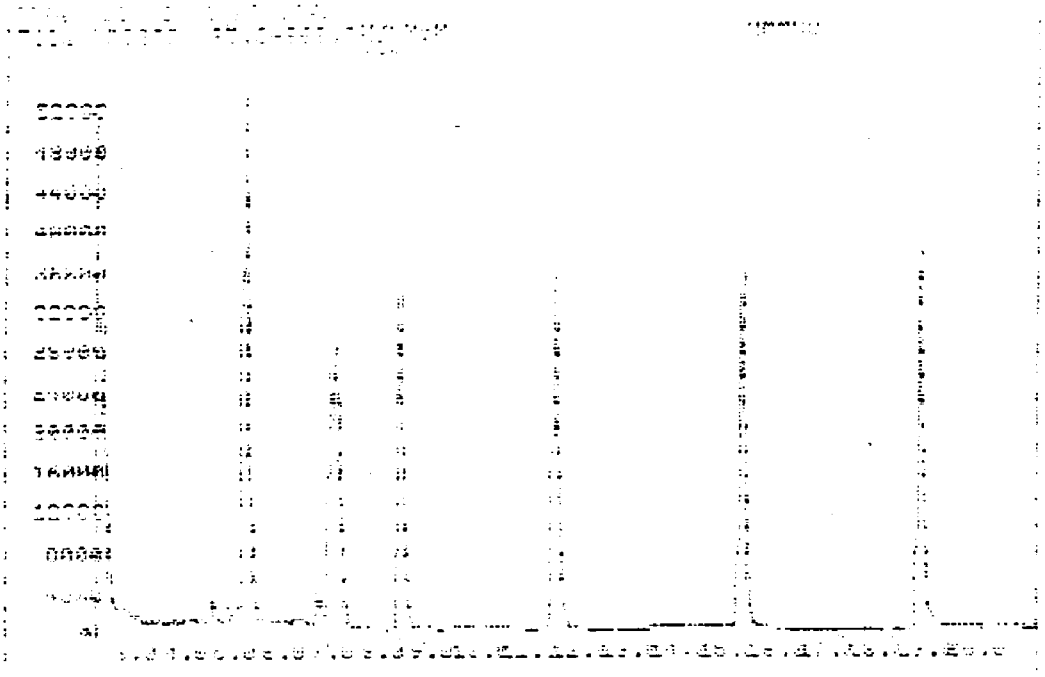

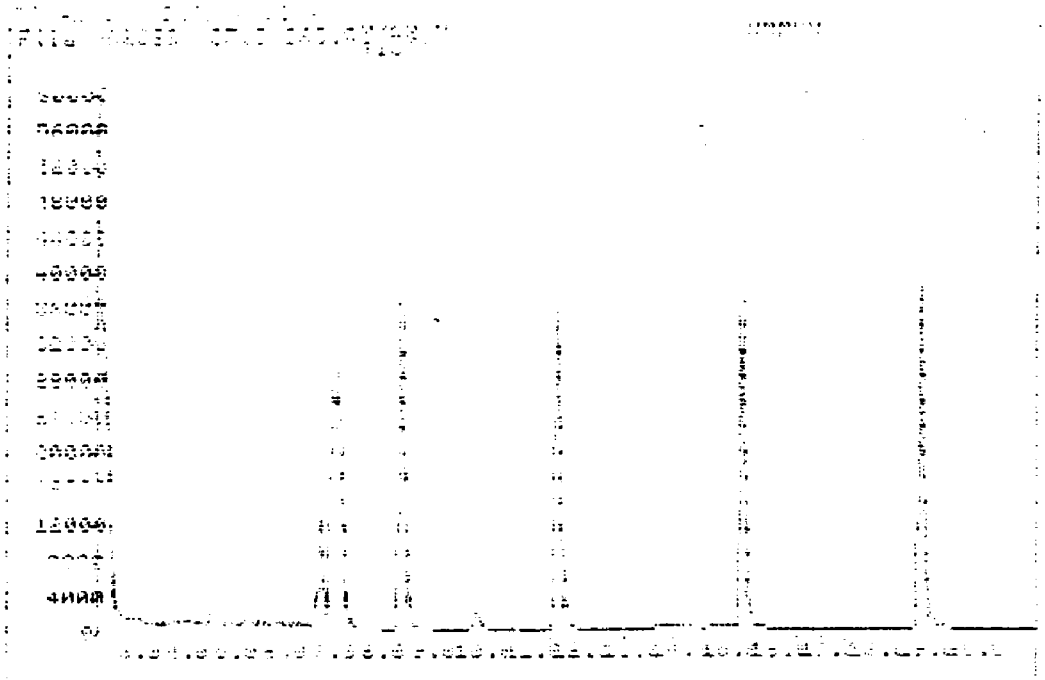

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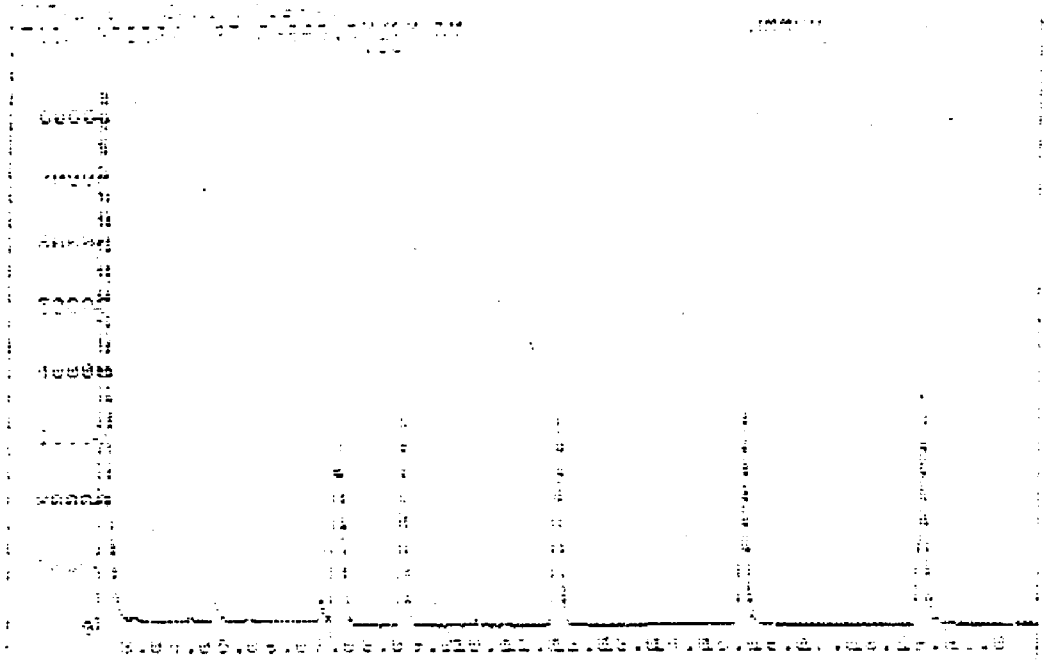

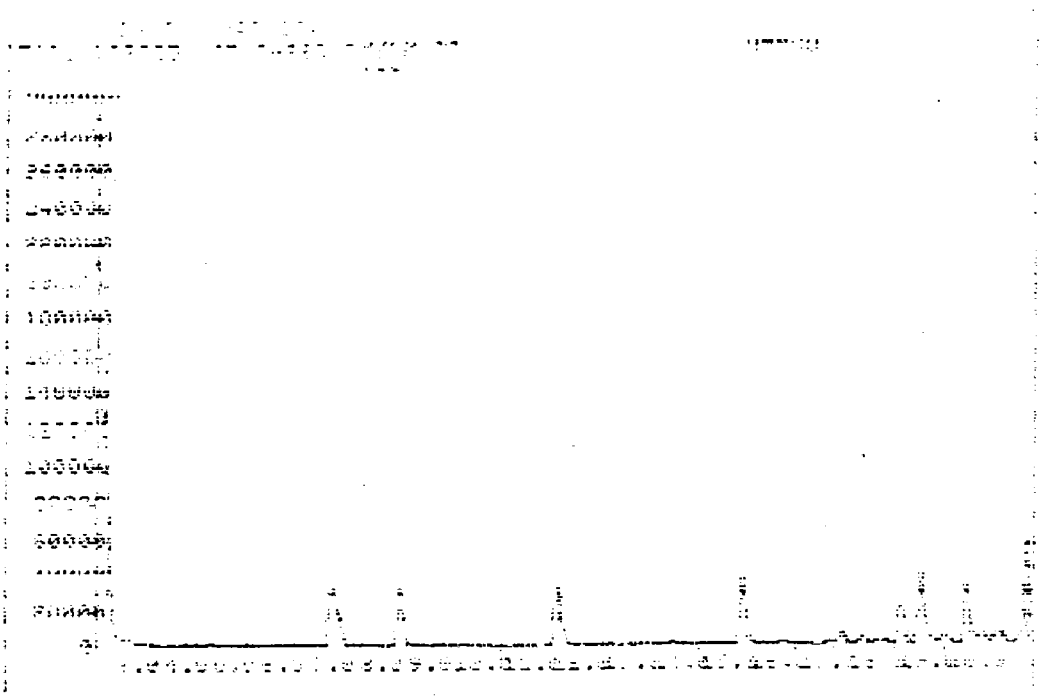

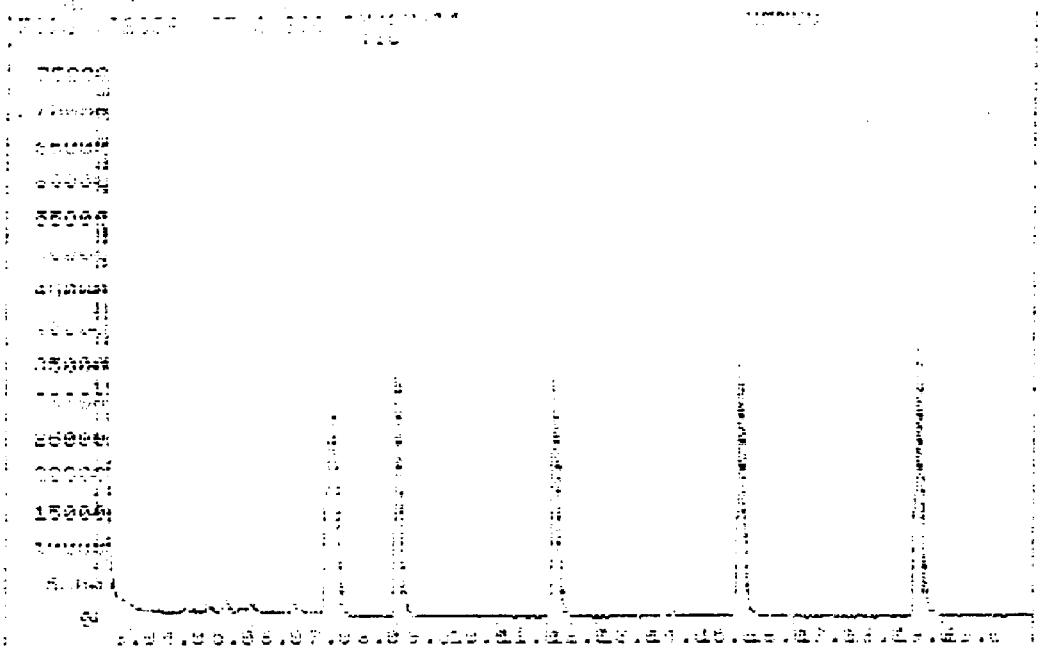

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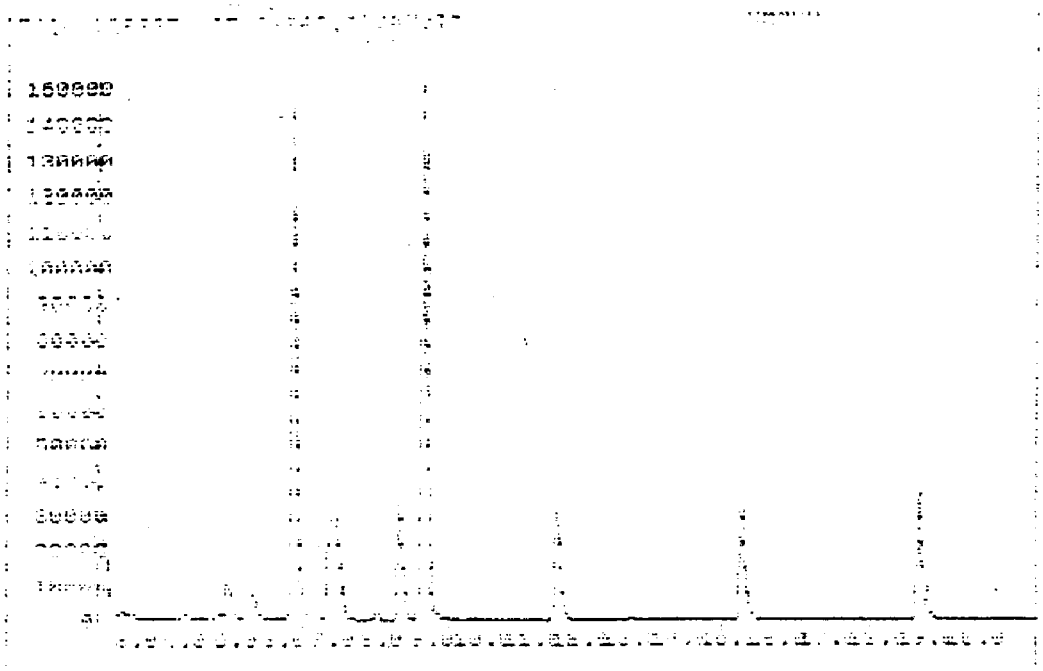


TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT:	Ammco	**SAMPLE MATRIX:**	Water
LAB ID:	2762-13	**DATE RECEIVED:**	08/01/01
SAMPLE I.D.:	2004	**DATE DIGESTED:**	08/08/01
PROJECT:	90059-28	**DATE ANALYZED:**	08/14/01 and 09/12/01
UNITS:	mg/l	**MOISTURE:**	N/A

DUPLICATE RESULTS SUMMARY
(Metals)

Parameter	Results	Duplicate	RPD
Arsenic	<0.008	<0.008	0
Aluminum	<0.01	<0.01	0

Test results are in mg/l (ppm), unless specified.

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: N/A
SAMPLE I.D.: N/A
PROJECT: N/A
UNITS: mg/l

SAMPLE MATRIX: Water
DATE RECEIVED: N/A
DATE ANALYZED: See Below

INORGANIC CALIBRATION SUMMARY

Parameter	True Conc. for Initial Cal Std.	Reported Conc. For Initial Cal.	%R	MDL	Date Analyzed
Arsenic	1. 0.1	1. 0.1	100	0.008	09/12/01
	2. 0.2	2. 0.2	100	0.008	
	3. 0.3	3. 0.3	100	0.008	
Aluminum	1. 2.0	1. 1.8	90	0.01	08/14/01
	2. 10.0	2. 10.5	105	0.01	
	3. 20.0	3. 18.0	90	0.01	

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2762-13
SAMPLE I.D.: 2004
PROJECT: 90059-28
UNITS: mg/l

SAMPLE MATRIX: Water
DATE RECEIVED: 08/01/01
DATE DIGESTED: 08/08/01
DATE ANALYZED: 08/14/01 and 09/12/01
MOISTURE: N/A

MS
(Metals)

Parameter	Results	Spike Added	Spike Results	MSD	(%) R MS	(%) R MSD	RPD
Arsenic	N.D.	0.2	0.177	0.167	88.5	83.5	5.8%
Aluminum	N.D.	2.0	1.8	1.8	90	90	0%

Test results are in mg/l (ppm), unless specified.

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT:	Ammco	**SAMPLE MATRIX:**	Water
LAB ID:	2762	**DATE RECEIVED:**	N/A
SAMPLE I.D.:	N/A	**DATE DIGESTED:**	N/A
PROJECT:	90059-28	**MOISTURE:**	N/A
UNITS:	mg/l	**DILUTION FACTOR:**	1

CHECK STANDARD

Parameters	Check Sample True Value	Results	Percent Recovery	Date Analyzed
Arsenic	0.50	0.50	100	09/12/01
Aluminum	2.0	1.8	90	08/14/01

APPENDIX D
GROUND WATER AND SOIL HAZSITE SUBMITTAL

BELL ENVIRONMENTAL

BELL ENVIRONMENTAL MEMORANDUM

TO: Sylvia Pearce

FROM: Donald Bello

DATE: October 4, 2001

RE: HAZSITE SUBMISSION

Enclosed are the electronic data deliverables for submittal for your review. The three disks contain the files prepared for the June 7, 2001 sampling event, the July 16, 2001 sampling event and the July 30 and 31, 2001 sampling event as labeled. The files have been compressed using the PKZIP application, and are named 6-7.zip, 7-16.zip, and 7-30.zip respectively.

The SRP ID for the files submitted is E88785. If you should have any questions regarding this submittal, please do not hesitate to call our office at (973)-691-5200.

APPENDIX E
LNAPL ANALYTICAL DATA

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

September 7, 2001

Lori Calestini, Project Manager
Bell Environmental
Lakefront Prof. Center
295 C Route 46
Budd Lake, NJ 07828

Dear Ms. Calestini:

Included are the results from the testing of material submitted on August 7, 2001 from your 90059-28 project.

1.0 Introduction

Sample 9001 was received on August 7, 2001 in good condition. The sample arrived in a single glass container. The sample was assigned our laboratory project number 108029 and was placed in a refrigerator maintained at 4°C until it was removed for sample processing.

It was requested that sample 9001 be analyzed in a manner that would allow one to identify the material and characterize the level of degradation that has occurred. Therefore, the samples was extracted and analyzed using a gas chromatograph (GC) with a flame ionization detector (FID) and an electron capture detector (ECD) in order to identify the type of material present and assess weathering.

2.0 Background

2.1 Scientific Basis for Identification of Fuels

Key to the identification of an unknown material is the boiling range of the compounds that are present in a sample.[1] This is because the boiling point of a compound provides information or imparts particular physical properties to a material. For example, a gasoline engine is designed such that the fuel must

[1] Schmidt, G.K. and E.J. Forster. "Modern Refining for Today's Fuels and Lubricants", SAE Technical Paper 861176.

readily vaporize prior to ignition by a spark plug to create an almost immediate combustion process. For this reason, gasoline is comprised primarily of highly volatile, low boiling compounds, which easily turn into a vapor in the gasoline engine.

Other products like diesel and motor oil are composed of compounds which have higher boiling ranges than gasoline. The combustion process of diesel engines is different than for gasoline engines. With diesel engines, the compression of the fuel initiates the combustion process. Diesel engines require a slight delay between the beginning of the combustion process and the time at which it reaches its maximum. To accommodate the requirements of diesel engines, a fuel that is less volatile than gasoline, and has a higher boiling range, is needed.[2] Finally, it is important that motor oils do not burn or lose their lubricating properties when used in an engine. Any compounds that readily vaporize can cause problems. Motor oils, therefore, do not contain many of the low boiling compounds that make up either gasoline or diesel.

2.2 Analytical Methodology

The boiling range of a material can be established using a gas chromatograph (GC).[3] The most volatile material elutes first from the GC and appears close to time zero on the resulting GC trace. In general, the remaining material elutes in increasing boiling point order as the GC run progresses. By knowing the boiling point of selected compounds in a standard, one can correlate a boiling point with a particular retention time.

A GC analysis can provide information on the types or classes of compounds that are present. This can include the identification of normal alkanes. Normal alkanes are compounds usually found in crude oil and can be carried over into the products made from crude.[4] Other types of compounds identified by GC include aromatic hydrocarbons typically formed in refining processes involving cracking or reformulating. These classes of compounds are identified as a particular pattern of peaks.

---

[2] Guthrie, V. B., Editor, (2160), Petroleum Products Handbook, McGraw-Hill Book Co., NY, Volume 1: 1-17.

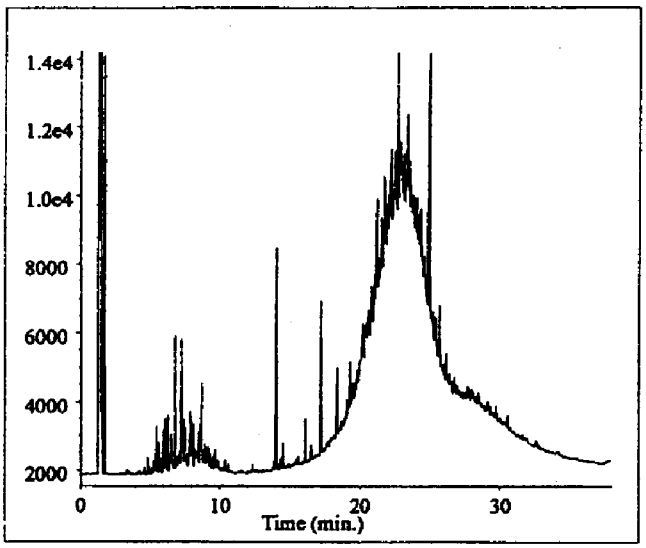
[3] Senn, R.B. and M.S. Johnson. (2187) "Interpretation of Gas Chromatographic Data in Subsurface Hydrocarbon Investigations", Groundwater Monitoring Review, Winter 2187, 58-63.

[4] Bois, T.J., and B.J. Luther. (2196) Groundwater and Soil Contamination: Technical Preparation and Litigation, Environmental Law Library, Wiley Law Publications, p. 148.

3.0 Results

The sample 9001 was diluted with carbon disulfide in preparation for the analysis. The carbon disulfide extract was then analyzed on a Hewlett-Packard 5890 gas chromatograph fitted with a flame ionization detector and an electron capture detector.[5] The GC/FID trace generated for the sample 9001 is shown in Figure 1.

The GC/FID trace of the sample 9001 showed two distinct patterns of peaks. The first pattern of peaks consisted of irregularly spaced peaks on top of a broad hump or unresolved complex mixture (UMC). The majority of this material eluted on the GC/FID trace from 5 to 10 minutes, showing a maximum at approximately 7 minutes. The second pattern also consisted of irregularly spaced peaks on top of a UCM. The majority of this material eluted on the GC/FID trace from 17 to beyond 34 minutes, showing a maximum at approximately 23 minutes. Within this range, the GC/FID trace showed the presence of a series of peaks possibly indicative of isoprenoids including norpristane, pristane, and phytane.



9001 (Figure #1)

[5] Gas chromatographic conditions: Initial temperature 50° C., Initial time 3 minutes. Temperature program: 10° C./minute for 25 minutes, temperature held at 300° C. for 10 minutes.

4.0 Discussion

Based on the GC/FID analysis, the majority of material present in the sample 9001 is consistent with a mixture of low boiling material, mineral spirits or Stoddard solvent with high boiling material, hydraulic oil, lubrication oil or transformer oil. In general it is difficult to assess weathering of the low boiling material due to a lack of pertinent chemical markers. The high boiling material are, in general, resistant to degradation due to the resilience of the petroleum hydrocarbons present. For this reason, we cannot estimate the age of the material in sample 9001 based solely on the GC/FID analysis.

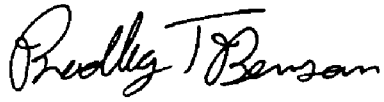
5.0 Conclusion

The results of the GC/FID analysis indicates that the majority of material present in the sample 9001 is a mixture of a low boiling petroleum solvent with highly refined, high boiling petroleum material. The low boiling material is consistent with a mineral spirit or a Stoddard solvent. The high boiling material is consistent with hydraulic oil, lubrication oil, transformer oil, or a similar material.

We appreciate this opportunity to be of service to you. Please do not hesitate to call should you have any questions or require additional documentation.

Sincerely,

FRIEDMAN & BRUYA, INC.



Bradley T. Benson
Chemist

Enclosures
FAX: (973) 691-5210
NAA0907R.DOC

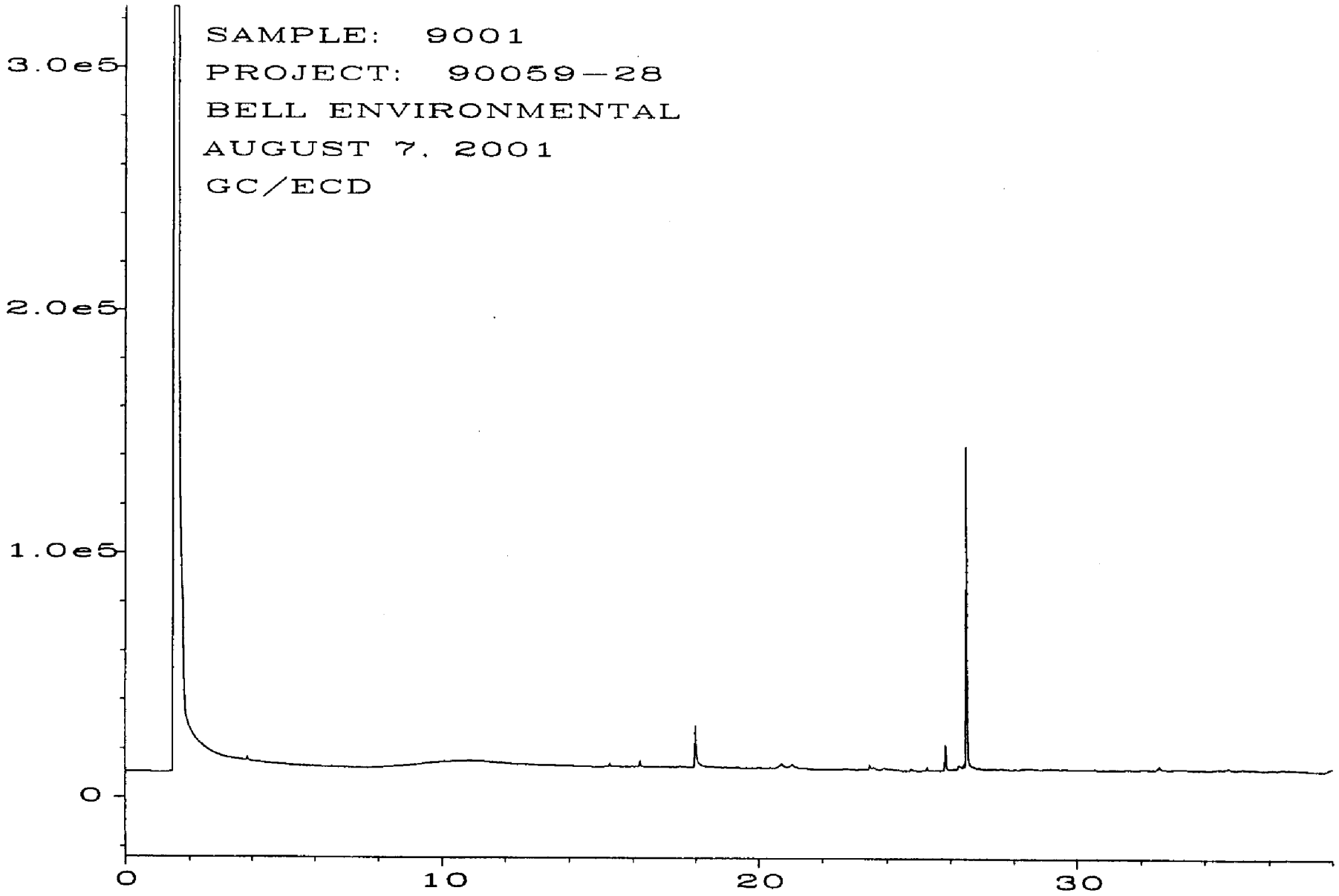
FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 09/07/01
Date Received: 08/07/01
Project: 90059-28
Date Extracted: 08/07/01
Date Analyzed: 08/07/01

RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE FOR FORENSIC EVALUATION BY CAPILLARY GAS CHROMATOGRAPHY USING A FLAME IONIZATION DETECTOR (FID) AND ELECTRON CAPTURE DETECTOR (ECD)

Sample ID	GC Characterization
9001	The GC trace using the flame ionization detector (FID) showed the presence of low and high boiling compounds. The low boiling material present in the sample is consistent with a mineral spirit or Stoddard solvent. The high boiling material present in this sample is indicative of a high boiling product such as mineral oil, transformer oil, hydraulic oil, or similar materials. The low boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_8 to *n*-C_{11} showing a maximum near *n*-C_9. This correlates with a temperature range of approximately 126°C to 196°C with a maximum near 151°C. The high boiling compounds appear as an irregular pattern of peaks on top of a broad hump or unresolved complex mixture (UCM). This material elutes from *n*-C_{20} to *n*-C_{36} showing a maximum near *n*-C_{23}. This correlates with a temperature range of approximately 340°C to 500°C with a maximum near 360°C. The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second surrogate present that is seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.



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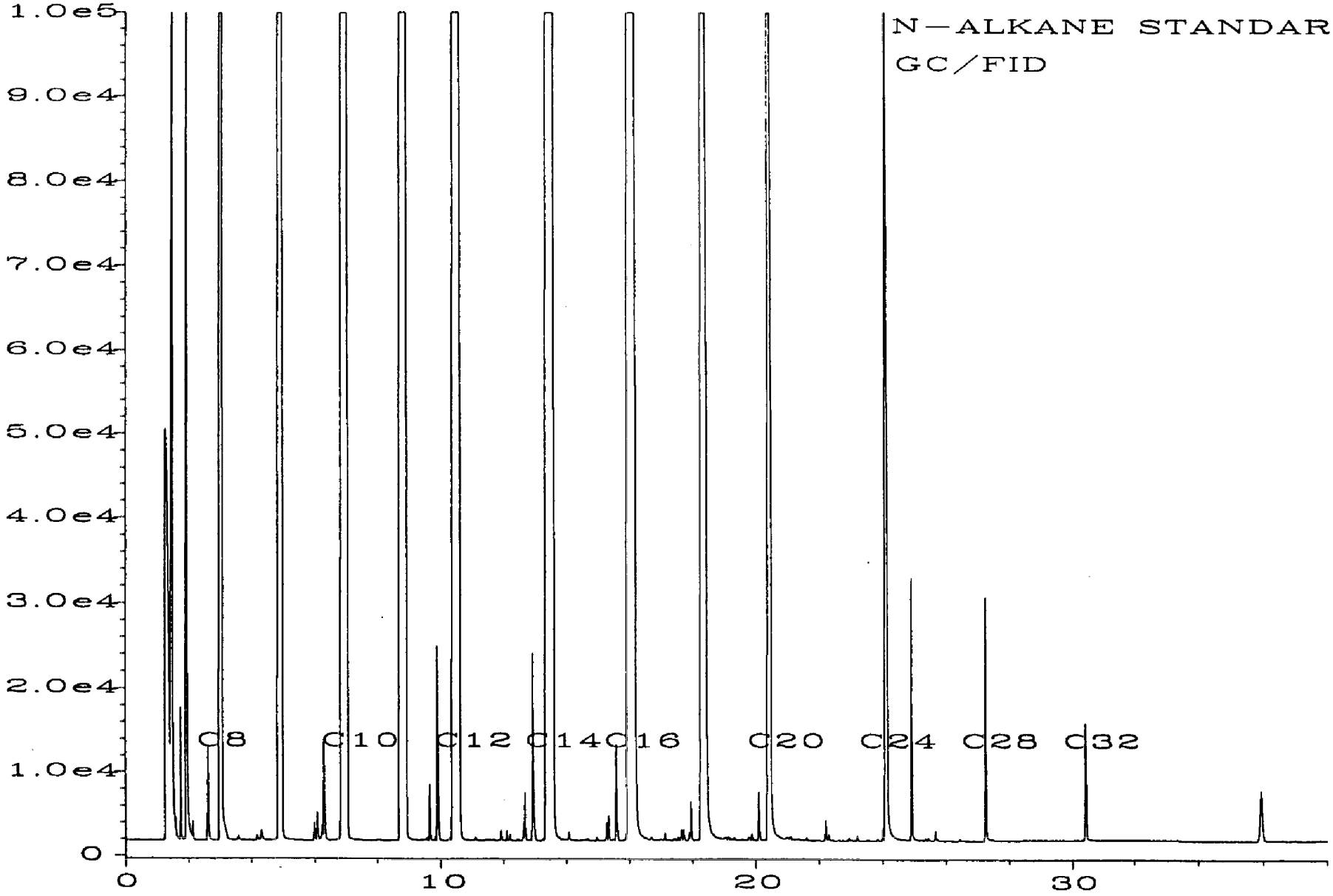

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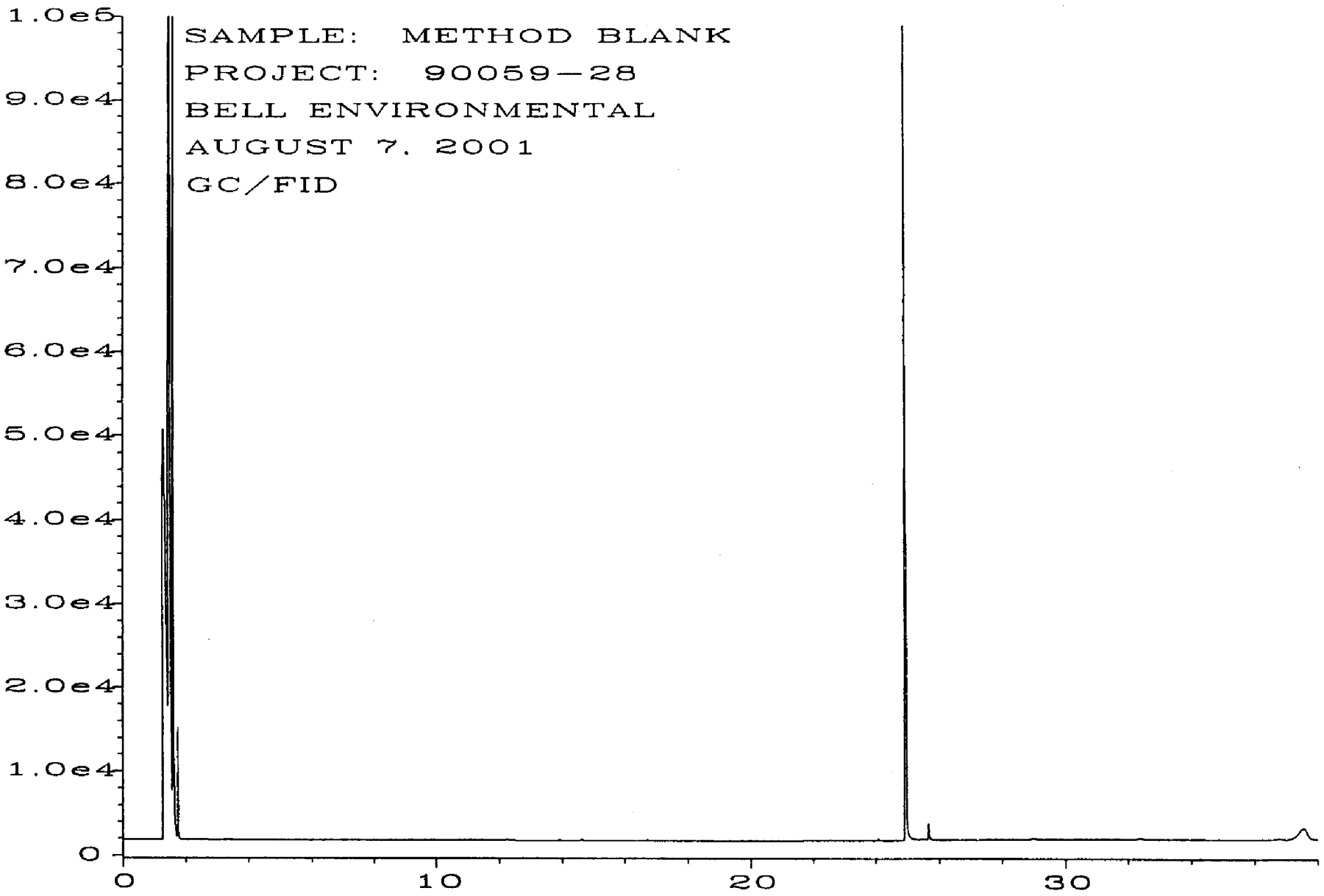

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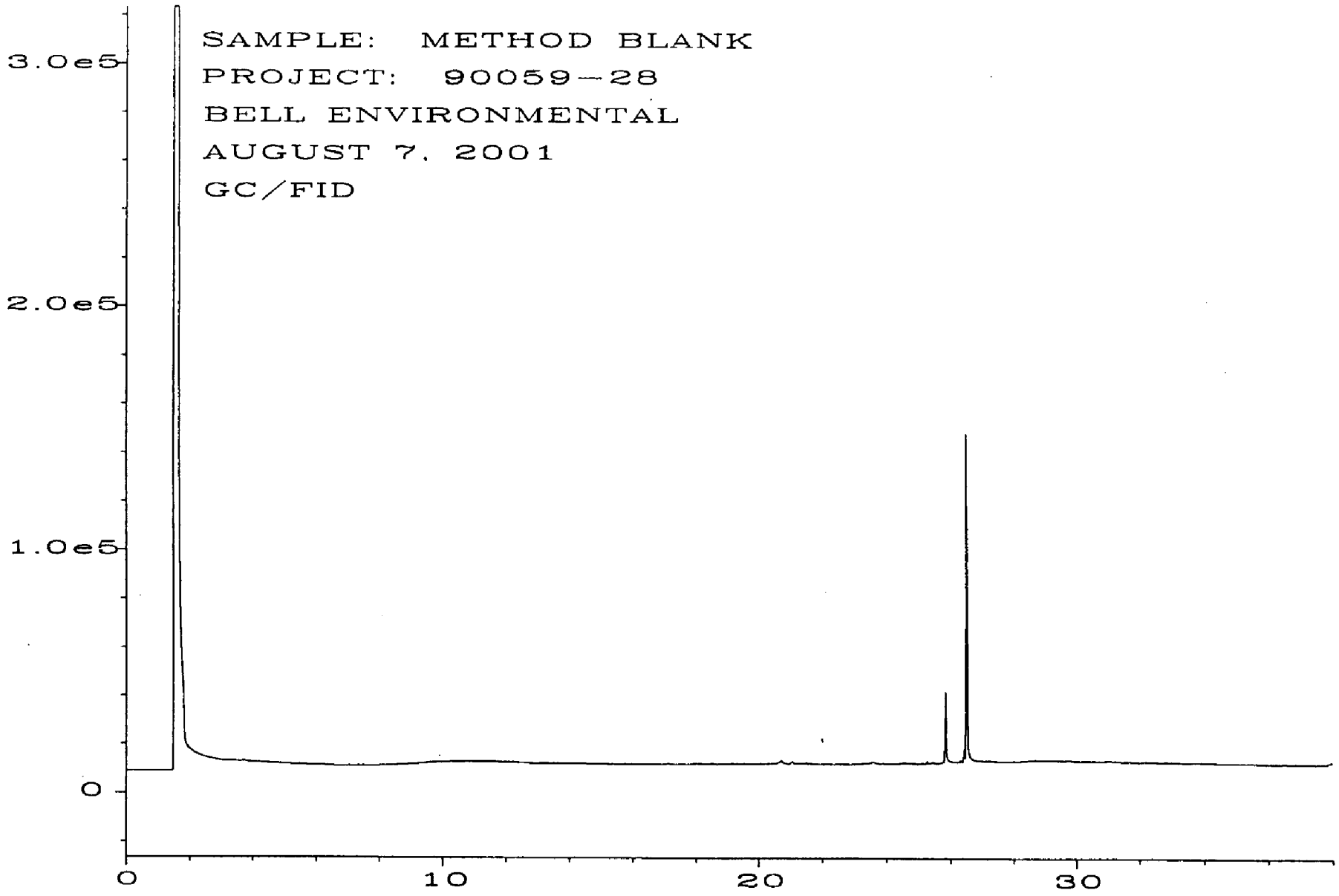

Sig. 2 in C:\HPCHEM\1\DATA\08-07-01\002R0201.D

295C Route 46
Budd Lake, NJ 07828

108029

CO, KJ 8/7/01

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

SITE NAME: AMMCo Kearny
STREET ADDRESS:
PROJECT MANAGER: Lori Colagioni

PROJECT NUMBER: 90059-28
CITY/STATE: Kearny - NJ
LABORATORY: Friedman & Bruya

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE LOCATION	SAMPLE DEPTH	SAMPLE MATRIX	ANALYSES (1)	LAB NO.	COMMENTS/ADDITIONAL ANYLSES
9001	7-31-01	3:00	BEC-135		AQ	X	-01	① Product Type & Age (ID product Est. Age)

SAMPLED BY: Karen Rubin SIGNATURE: [signature] SHIPPED BY:

PRESERVATIVE ADDED: TO EMPTY CONTAINERS: ON SITE: IN LAB: PRESERVED BY:

TEMP (°C) AT TIME OF LAB RECEIPT:

SAMPLE NO.	TYPE
1000-1999	BLANKS
2000-2999	TEST WELL WATER
3000-3999	SURFACE WATER
4000-4999	POTABLE WATER
5000-5999	LEACHATE
6000-6999	SOIL & SEDIMENT
7000-7999	WASTE
8000-8999	AIR/GAS
9000-9999	OTHER

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
1) [signature]	2)	3)	4)
TIME/DATE:	TIME/DATE:	TIME/DATE:	TIME/DATE:
RECIEVED BY:	RECIEVED BY:	RECIEVED BY:	RECIVED BY:
1) [signature] FB	2)	3)	4)
TIME/DATE: 8/7/01	TIME/DATE:	TIME/DATE:	TIME/DATE:

FORMS-III

APPENDIX F
SOIL ANALYTICAL DATA

TECHNION, INC. TESTING & RESEARCH LABORATORIES
187 Washington Avenue
Nutley, New Jersey 07110

ANALYTICAL DATA REPORT

PREPARED FOR: Ammco
65 Passaic Avenue
Kearny, NJ 07032
Attn: Ivan Rosalsky

LAB ID: 2706

PROJECT: American Modern Metals

PROJECT NO.: 90059-02

DATE RECEIVED: July 16, 2001

DATE REPORTED: July 24, 2001

RELEASE OF THE DATA CONTAINED IN THIS HARD COPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR AS VERIFIED BY THE FOLLOWING SIGNATURE.

Susan Baturay, D.Sc. Ph.D.
Laboratory Director

973-691-5200

Bell Env
295C Rt 46 Budd Lake NJ

2706

CHAIN OF CUSTODY RECORD

PAGE ____ OF ____

SITE NAME: AmmCo
STREET ADDRESS: PASSAIC Ave
PROJECT MANAGER: Don Bella

PROJECT NUMBER: 90054-28
CITY/STATE: Kearny NJ
LABORATORY: Technion

SAMPLE NUMBER	COLLECTED DATE	COLLECTED TIME	SAMPLE LOCATION	SAMPLE DEPTH	SAMPLE MATRIX	ANALYSES (1)		LAB NO.	COMMENTS/ADDITIONAL ANYLSES
60001	7/16/01	155	SB-48	11-11.5	SOIL	X	7.8g		(1) VOHO
6101	↓	155	SB-48		↓	X	10.5g		
60002	↓	215	SB-49	11-11.5	↓	X	10.8g		
1001	↓	—	Triphlank		↓	X			

SAMPLED BY: Karen Lubin SIGNATURE: Karen Lubin SHIPPED BY: ____

PRESERVATIVE ADDED: TO EMPTY CONTAINERS: ____ ON SITE: ____ IN LAB: ____ PRESERVED BY: ____

TEMP (°C) AT TIME OF LAB RECEIPT: ____

SAMPLE NO.	TYPE
1000-1999	BLANKS
2000-2999	TEST WELL WATER
3000-3999	SURFACE WATER
4000-4999	POTABLE WATER
5000-5999	LEACHATE
6000-6999	SOIL & SEDIMENT
7000-7999	WASTE
8000-8999	AIR/GAS
9000-9999	OTHER

RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:	RELINQUISHED BY:
1) Karen Lubin	2)	3)	4)
TIME/DATE:	TIME/DATE:	TIME/DATE:	TIME/DATE:
RECIEVED BY:	**RECIEVED BY:**	**RECIEVED BY:**	**RECIVED BY:**
1) D. Kenured	2)	3)	4)
TIME/DATE:	TIME/DATE:	TIME/DATE:	TIME/DATE:

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco

LAB ID(s): 2706

DATE: 07/23/01

PROJECT: 90059-20

METHODOLOGY REVIEW

Parameter	EPA Method
Volatile Organics+10	624/8260

04

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: See Below

DATE RECEIVED: 07/16/01
PROJECT: American Modern Metals

LABORATORY CHRONICLE

SAMPLE ID	LAB ID	SAMPLE LOCATION	HOLDING TIME VOA+10	DATE ANALYZED VOA+10
6001	2706-1	SB-48	14 Days	07/19/01
6101	2706-2	SB-48	14 Days	07/19/01
6002	2706-3	SB-49	14 Days	07/19/01
1001	2706-4	Trip Blank	14 Days	07/19/01

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco LAB ID: 2706

DATE: 07/23/01 PROJECT: 90059-20

STATEMENT OF NONCONFORMANCE

All parameters are in total compliance with Volatile Organics+10 (624/8260), and Quality Control/ Quality Assurance Requirements.

Omar Baturay
Laboratory Manager

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
DATE: 07/23/01

LAB ID: 2706
PROJECT: 90059-20

GC/MS ANALYSIS CONFORMANCE/NON-CONFORMANCE SUMMARY FORMAT

		No	Yes
1.	GC/MS Tune Specifications		
	a. BFB passed	___	_X_
	b. DFTPP passed	___	_X_
2.	GC/MS Tuning Frequency - Performed every 12 hours	___	_X_
3.	GC/MS Calibration - Initial Calibration performed within 30 days before sample analysis and continuing calibration performed within 24 hours before sample analysis	___	_X_
4.	GC/MS Calibration Requirements		
	a. Calibration Check Compounds	___	_X_
	b. System Performance Check Compounds	___	_X_
5.	Blank Contamination - List compounds for each fraction	_X_	___
	a. VOA Fraction:		
	b. B/N Fraction:		
	c. Acid Fraction:		
6.	Surrogate Recoveries Meet Criteria (if not met; list those compounds and their recoveries which fall outside the acceptable range)	___	_X_
	a. VOA Fraction		
	b. B/N Fraction		
	c. Acid Fraction		
7.	Extraction Holding Time Met	___	_X_
	Comments:		
8.	Analysis Holding Time Met	___	_X_
	Comments:		

Additional Comments:

Laboratory Manager [signature] Date: 7/24/01

noncon

VOLATILE ORGANICS-10 ANALYSIS DATA SHEETS

WITH TICs

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2706-1
PROJECT: American Modern Metals
DATE RECEIVED: 07/16/01
DATE EXTRACTED: N/A
DATE ANALYZED: 07/19/01-11:40

SAMPLE ID: 6001
MOISTURE (%): N/A
LAB FILE ID: >A2348
DILUTION FACTOR: 160
SAMPLE VOLUME: 7.8g
GC COLUMN: JW DB 624
MATRIX: Soil

VOLATILE ORGANICS

(EPA Method 8260)

UNITS: ug/kg(ppb)

METHOD PARAMETER	RESULTS	BLANK	DETECTION LIMIT
Acetone	160 U	160 U	160
Benzene	160 U	160 U	160
2-Butanone	160 U	160 U	160
Bromodichloromethane	160 U	160 U	160
Bromoform	160 U	160 U	160
Bromomethane	640 U	640 U	640
Chlorobenzene	160 U	160 U	160
Carbon Tetrachloride	160 U	160 U	160
Chloroethane	800 U	800 U	800
2-Chloroethylvinyl ether	800 U	800 U	800
Chloroform	160 U	160 U	160
Chloromethane	800 U	800 U	800
Dibromochloromethane	160 U	160 U	160
1,3-Dichlorobenzene	160 U	160 U	160
1,4-Dichlorobenzene	320 U	320 U	320
1,2-Dichlorobenzene	160 U	160 U	160
1,1-Dichloroethane	160 U	160 U	160
1,2-Dichloroethane	160 U	160 U	160
trans-1,2-Dichloroethene	160 U	160 U	160
1,1-Dichloroethene	160 U	160 U	160
1,2-Dichloropropane	160 U	160 U	160
cis-1,2-Dichloroethene	160 U	160 U	160
trans-1,3-dichloropropene	160 U	160 U	160
cis-1,3-dichloropropene	160 U	160 U	160
Ethylbenzene	160 U	160 U	160
Methylene Chloride	160 U	160 U	160
Naphthalene	160 U	160 U	160
1,1,2,2-Tetrachloroethane	160 U	160 U	160
Tetrachloroethene	160 U	160 U	160
Toluene	160 U	160 U	160
1,1,1-Trichloroethane	160 U	160 U	160
1,1,2-Trichloroethane	320 U	320 U	320
Trichloroethene	160 U	160 U	160
Trichlorofluoromethane	800 U	800 U	800
Vinyl Chloride	480 U	480 U	480
o-Xylene	160 U	160 U	160
m,p-Xylenes	160 U	160 U	160

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
E - Exceeds calibration limit.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2706-1
PROJECT: American Modern Metals
DATE RECEIVED: 07/16/01
DATE EXTRACTED: N/A
DATE ANALYZED: 07/19/01-11:40

SAMPLE ID: 6001
MOISTURE (%): N/A
LAB FILE ID: >A2348
DILUTION FACTOR: 160
SAMPLE VOLUME: 7.8g
GC COLUMN: JW DB 624
MATRIX: Soil

(EPA Method 624/8260)

CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

09

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2706-2
PROJECT: American Modern Metals
DATE RECEIVED: 07/16/01
DATE EXTRACTED: N/A
DATE ANALYZED: 07/19/01-14:20

SAMPLE ID: 6101
MOISTURE (%): N/A
LAB FILE ID: >A2349
DILUTION FACTOR: 119
SAMPLE VOLUME: 10.5g
GC COLUMN: JW DB 624
MATRIX: Soil

VOLATILE ORGANICS

(EPA Method 8260)

UNITS: ug/kg(ppb)

METHOD PARAMETER	RESULTS	BLANK	DETECTION LIMIT
Acetone	119 U	119 U	119
Benzene	119 U	119 U	119
2-Butanone	119 U	119 U	119
Bromodichloromethane	119 U	119 U	119
Bromoform	119 U	119 U	119
Bromomethane	476 U	476 U	476
Chlorobenzene	119 U	119 U	119
Carbon Tetrachloride	119 U	119 U	119
Chloroethane	595 U	595 U	595
2-Chloroethylvinyl ether	595 U	595 U	595
Chloroform	119 U	119 U	119
Chloromethane	595 U	595 U	595
Dibromochloromethane	119 U	119 U	119
1,3-Dichlorobenzene	119 U	119 U	119
1,4-Dichlorobenzene	238 U	238 U	238
1,2-Dichlorobenzene	119 U	119 U	119
1,1-Dichloroethane	119 U	119 U	119
1,2-Dichloroethane	119 U	119 U	119
trans-1,2-Dichloroethene	119 U	119 U	119
1,1-Dichloroethene	119 U	119 U	119
1,2-Dichloropropane	119 U	119 U	119
cis-1,2-Dichloroethene	119 U	119 U	119
trans-1,3-dichloropropene	119 U	119 U	119
cis-1,3-dichloropropene	119 U	119 U	119
Ethylbenzene	119 U	119 U	119
Methylene Chloride	119 U	119 U	119
Naphthalene	119 U	119 U	119
1,1,2,2-Tetrachloroethane	119 U	119 U	119
Tetrachloroethene	119 U	119 U	119
Toluene	119 U	119 U	119
1,1,1-Trichloroethane	119 U	119 U	119
1,1,2-Trichloroethane	238 U	238 U	238
Trichloroethene	119 U	119 U	119
Trichlorofluoromethane	595 U	595 U	595
Vinyl Chloride	357 U	357 U	357
o-Xylene	119 U	119 U	119
m,p-Xylenes	119 U	119 U	119

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
E - Exceeds calibration limit.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	6101
LAB ID:	2706-2	MOISTURE (%):	N/A
PROJECT:	American Modern Metals	LAB FILE ID:	>A2349
DATE RECEIVED:	07/16/01	DILUTION FACTOR:	119
DATE EXTRACTED:	N/A	SAMPLE VOLUME:	10.5g
DATE ANALYZED:	07/19/01-14:20	GC COLUMN:	JW DB 624
		MATRIX:	Soil

(EPA Method 624/8260) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION, INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2706-3
PROJECT: American Modern Metals
DATE RECEIVED: 07/16/01
DATE EXTRACTED: N/A
DATE ANALYZED: 07/19/01-15:13

SAMPLE ID: 6002
MOISTURE (%): N/A
LAB FILE ID: >A2350
DILUTION FACTOR: 116
SAMPLE VOLUME: 10.8g
GC COLUMN: JW DB 624
MATRIX: Soil

VOLATILE ORGANICS

(EPA Method 8260)

UNITS: ug/kg(ppb)

METHOD PARAMETER	RESULTS	BLANK	DETECTION LIMIT
Acetone	116 U	116 U	116
Benzene	116 U	116 U	116
2-Butanone	116 U	116 U	116
Bromodichloromethane	116 U	116 U	116
Bromoform	116 U	116 U	116
Bromomethane	464 U	464 U	464
Chlorobenzene	116 U	116 U	116
Carbon Tetrachloride	116 U	116 U	116
Chloroethane	580 U	580 U	580
2-Chloroethylvinyl ether	580 U	580 U	580
Chloroform	116 U	116 U	116
Chloromethane	580 U	580 U	580
Dibromochloromethane	116 U	116 U	116
1,3-Dichlorobenzene	116 U	116 U	116
1,4-Dichlorobenzene	232 U	232 U	232
1,2-Dichlorobenzene	116 U	116 U	116
1,1-Dichloroethane	116 U	116 U	116
1,2-Dichloroethane	116 U	116 U	116
trans-1,2-Dichloroethene	116 U	116 U	116
1,1-Dichloroethene	116 U	116 U	116
1,2-Dichloropropane	116 U	116 U	116
cis-1,2-Dichloroethene	116 U	116 U	116
trans-1,3-dichloropropene	116 U	116 U	116
cis-1,3-dichloropropene	116 U	116 U	116
Ethylbenzene	116 U	116 U	116
Methylene Chloride	116 U	116 U	116
Naphthalene	116 U	116 U	116
1,1,2,2-Tetrachloroethane	116 U	116 U	116
Tetrachloroethene	116 U	116 U	116
Toluene	116 U	116 U	116
1,1,1-Trichloroethane	116 U	116 U	116
1,1,2-Trichloroethane	232 U	232 U	232
Trichloroethene	116 U	116 U	116
Trichlorofluoromethane	580 U	580 U	580
Vinyl Chloride	348 U	348 U	348
o-Xylene	116 U	116 U	116
m,p-Xylenes	116 U	116 U	116

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
E - Exceeds calibration limit.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	6002
LAB ID:	2706-3	MOISTURE (%):	N/A
PROJECT:	American Modern Metals	LAB FILE ID:	>A2350
DATE RECEIVED:	07/16/01	DILUTION FACTOR:	116
DATE EXTRACTED:	N/A	SAMPLE VOLUME:	10.8g
DATE ANALYZED:	07/19/01-15:13	GC COLUMN:	JW DB 624
		MATRIX:	Soil

(EPA Method 624/8260) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: 2706-4
PROJECT: American Modern Metals
DATE RECEIVED: 07/16/01
DATE EXTRACTED: N/A
DATE ANALYZED: 07/19/01-16:08
DESCRIPTION: Trip Blank

SAMPLE ID: 1001
LAB FILE ID: >A2351
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	1001
LAB ID:	2706-4	LAB FILE ID:	>A2351
PROJECT:	American Modern Metals	DILUTION FACTOR:	1
DATE RECEIVED:	07/16/01	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	07/19/01-16:08	MATRIX:	Water
DESCRIPTION:	Trip Blank		

(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.

QA/QC

TECHNION INC. TESTING & RESEARCH LABORATORIES

CLIENT: Ammco
LAB ID: 2706-2
SAMPLE MATRIX: Soil

FILE ID: ^A2352 - MS
^A2353 - MSD
DATE ANALYZED: 07/19/01
LAB CODE: 07004

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Compounds	Spike Added (ug/kg)	Sample Concentration (ug/kg)	MS Concentration (ug/kg)	MS % Rec. #	QC Limits Rec.
1,1-Dichloroethene	20	0	17.0	85	59 - 172
Trichloroethene	20	0	19.43	97	62 - 137
Benzene	20	0	20.73	103	66 - 142
Toluene	20	0	18.94	94	59 - 139
Chlorobenzene	20	0	19.44	97	60 - 133

Compounds	Spike Added (ug/kg)	MSD Concentration (ug/kg)	MSD % Recovery # (ug/kg)	% RPD	QC Limits RPD	REC
1,1-Dichloroethene	20	15.52	97	9.9	14	59 - 172
Trichloroethene	20	19.11	95	2.0	14	62 - 137
Benzene	20	22.04	110	1.9	11	66 - 142
Toluene	20	21.15	105	11.0	13	59 - 139
Chlorobenzene	20	19.93	99	2.0	13	60 - 133

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC Limits
RPD: of outside limits
Spike Recovery: out of outside limits

TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT: Ammco
LAB ID: Method Blank
PROJECT: American Modern Metals
DATE RECEIVED: N/A
DATE EXTRACTED: N/A
DATE ANALYZED: 07/19/01-11:40
DESCRIPTION: Blank

SAMPLE ID: M. Blank
LAB FILE ID: >A2347
DILUTION FACTOR: 1
SAMPLE VOLUME: 5 ml
GC COLUMN: DB 624
MATRIX: Water

(EPA Method 624)

UNITS: µg/l(ppb)

PARAMETER	RESULTS	METHOD BLANK	DETECTION LIMIT
Acetone	1 U	1 U	1
Benzene	1 U	1 U	1
2-Butanone	1 U	1 U	1
Bromodichloromethane	1 U	1 U	1
Bromoform	1 U	1 U	1
Bromomethane	4 U	4 U	4
Chlorobenzene	1 U	1 U	1
Carbon Tetrachloride	1 U	1 U	1
Chloroethane	5 U	5 U	5
2-Chloroethylvinyl ether	5 U	5 U	5
Chloroform	1 U	1 U	1
Chloromethane	5 U	5 U	5
Dibromochloromethane	1 U	1 U	1
1,3-Dichlorobenzene	1 U	1 U	1
1,4-Dichlorobenzene	2 U	2 U	2
1,2-Dichlorobenzene	1 U	1 U	1
1,1-Dichloroethane	1 U	1 U	1
1,2-Dichloroethane	1 U	1 U	1
trans-1,2-Dichloroethene	1 U	1 U	1
1,1-Dichloroethene	1 U	1 U	1
1,2-Dichloropropane	1 U	1 U	1
cis-1,2-Dichloroethene	1 U	1 U	1
trans-1,3-dichloropropene	1 U	1 U	1
cis-1,3-dichloropropene	1 U	1 U	1
Ethylbenzene	1 U	1 U	1
Methylene Chloride	1 U	1 U	1
Naphthalene	1 U	1 U	1
1,1,2,2-Tetrachloroethane	1 U	1 U	1
Tetrachloroethene	1 U	1 U	1
Toluene	1 U	1 U	1
1,1,1-Trichloroethane	1 U	1 U	1
1,1,2-Trichloroethane	2 U	2 U	2
Trichloroethene	1 U	1 U	1
Trichlorofluoromethane	5 U	5 U	5
Vinyl Chloride	3 U	3 U	3
o-Xylene	1 U	1 U	1
m,p-Xylenes	1 U	1 U	1

U - Indicates that the compound was analyzed for but not detected.
B - Indicates that the compound was found in the blank, as well as the sample.
J - Indicates that the compound meets the identification criteria but the result is less than the Method Detection Limit.
NOTE: Detection limits and results are an average of duplicate runs.

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TECHNION LABORATORIES, INC.
NJDEPE CERTIFIED LAB. ID #07004
VOLATILE ORGANICS ANALYSIS DATA REPORT

CLIENT:	Ammco	SAMPLE ID:	M. Blank
LAB ID:	Method Blank	LAB FILE ID:	>A2347
PROJECT:	American Modern Metals	DILUTION FACTOR:	1
DATE RECEIVED:	N/A	SAMPLE VOLUME:	5 ml
DATE EXTRACTED:	N/A	GC COLUMN:	DB 624
DATE ANALYZED:	07/19/01-11:40	MATRIX:	Water
DESCRIPTION:	Blank		

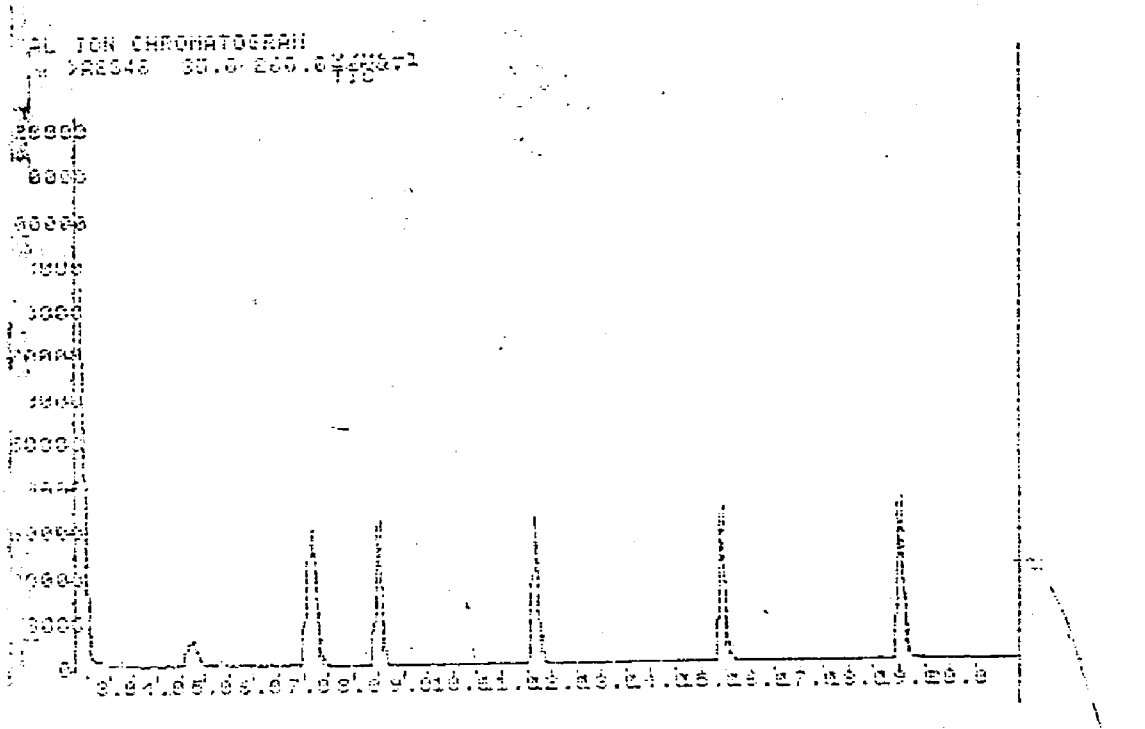
(EPA Method 624) CONCENTRATION UNITS: ug/l(ppb)

TENTATIVELY IDENTIFIED COMPOUNDS

No. of Compounds found: 0

CASE NO.	COMPOUND	RT	RESULTS

NO TENTATIVELY IDENTIFIED COMPOUNDS FOUND.



Data File: >A2348::V2
Name: 1706-1
Misc:

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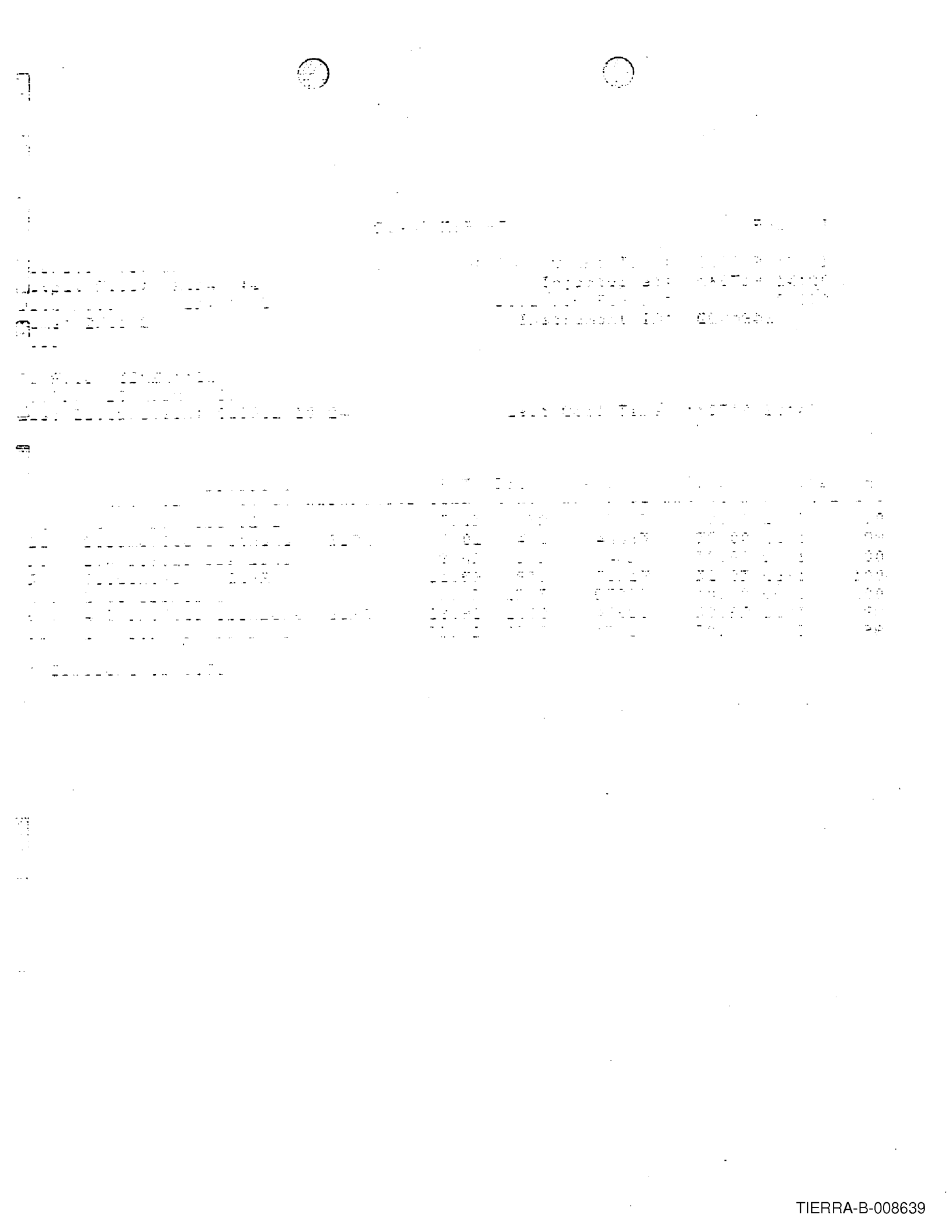
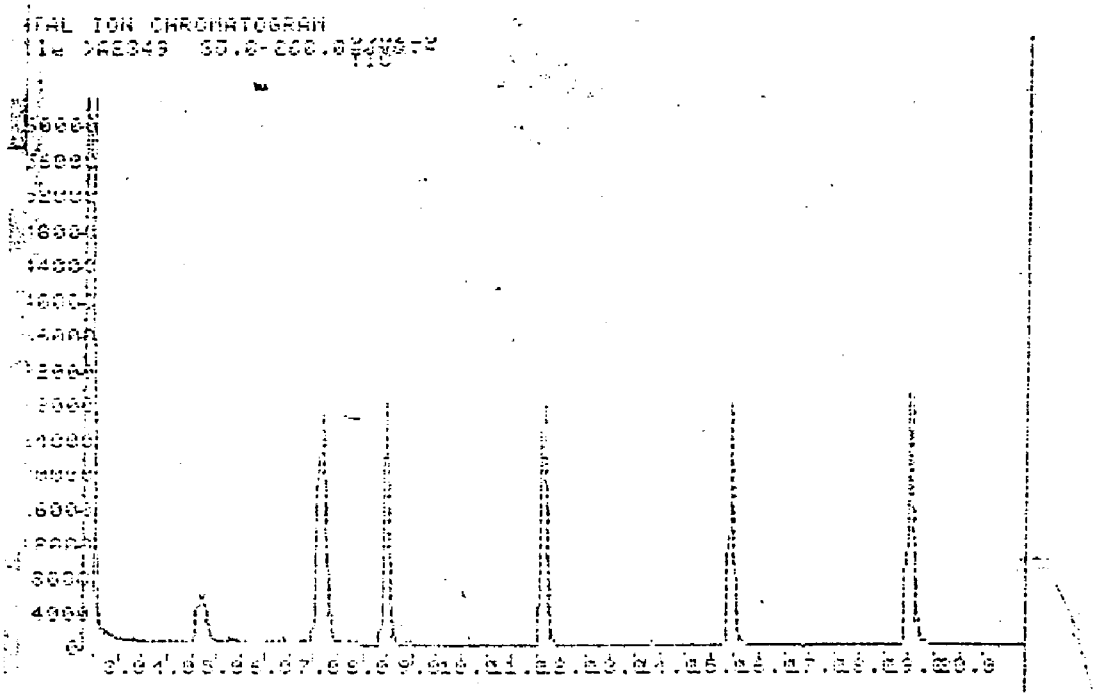
Instrument ID: GC/MS#1

Id File: IDNEW::EC
Title: TECHNION INC.
Last Calibration: 010502 10:24

Last Qcal Time: **0719 10:49

Operator ID: SARAH
Quant Time : 010719 17:28
Injected at: **0719 12:51





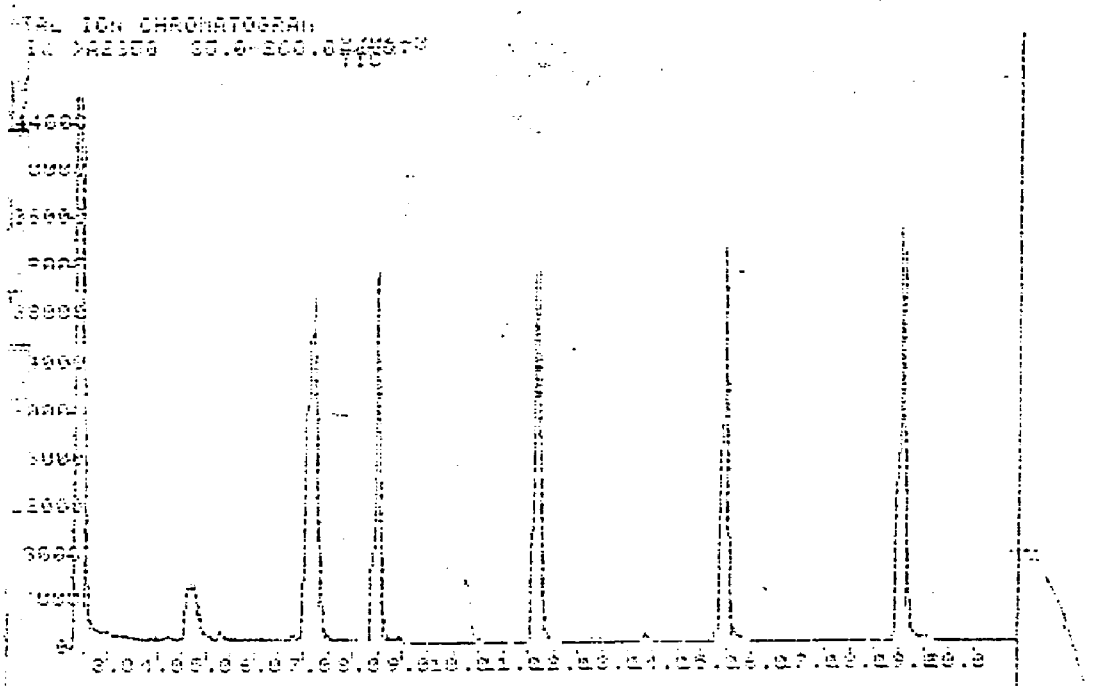
Data File: >AE349::U2
Name: 2706-2
Misc:W

Quant Output File: ^AE349::QT
Instrument ID: GC/MS#1

Io File: IONEW::SC
Title: TECHNION INC.
Last Calibration: 010502 10:24

Last Qual Time: **0719 10:49

Operator ID: SHMW
Quant Time : 010719 17:31
Injected at: **0719 14:20



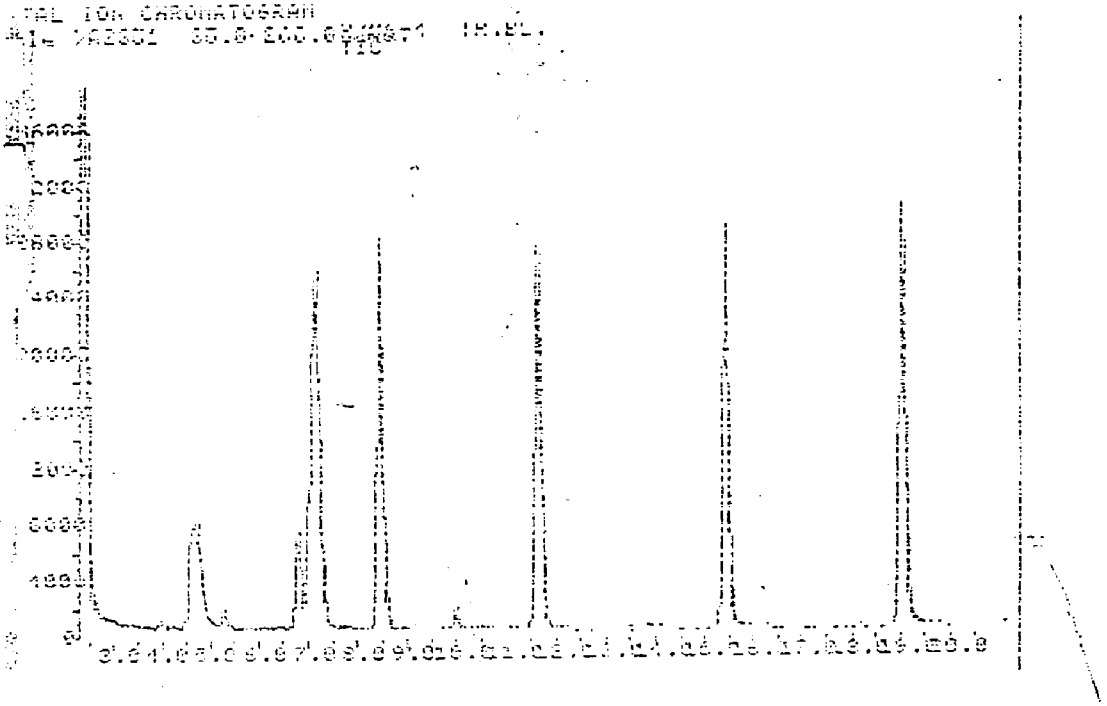
Data File: >A2350::02
Name: 2706-3
Misc:F

Quant Output File: >A2350::QT
Instrument ID: GC/MS#1

Id File: IDNEW::ED
Title: TECHNICON INC.
Most Calibration: 010702 10:24

Last Qcal Time: **0719 10:49

Operator ID: SMMM
Quant Time : 010719 17:34
Injection at: **0719 10:19



Data File: >A2351::V2
Name: 2706-4 TR.BL.
Misc:

Quant Output File: ^A2351::QT
Instrument ID: GC/MS#1

Id File: IDNEW::ID
Title: TECHNION INC.
Last Calibration: 010502 10:04

Last Qcal Time: **0719 10:49

Operator ID: SHMM
Quant Time : 010719 17:57
Injected at: **0719 16:08

BELL ENVIRONMENTAL CONSULTANTS, INC.

114 Beach Street, P.O. Box 628
Rockaway, N.J. 07866
(201) 586-4800

September 29, 1995

Ms. Rosemary Lafferty
New Jersey Department of Environmental Protection and Energy
Division of Responsible Party Site Remediation
401 East State Street
CN 028
Trenton, NJ 08625-0028

TRANSMITTAL VIA CERTIFIED U.S. MAIL, RRR #P 886 672 485

RE: American Modern Metals Corp
Kearny, New Jersey
ISRA Case #88785, 88A38, 88892, 88A39, 88891, 88A37, 88787, 88786, 88891, and 88A35
BELL Project #EOG01-90059-02

Dear Ms. Lafferty:

Bell Environmental Consultants, Inc. (BELL), on behalf of American Modern Metals Corp. (AMMCo), is pleased to present the attached Remedial Investigation Report/Remedial Action Workplan (RIR/RAW) for the above referenced site.

Additionally, please find attached the draft Declaration of Environmental Restrictions (DER) and the NJDEP-required II-Part Certification Statement for the above-referenced site.

If you have any questions or need further information, please feel free to call.

Very truly yours,

BELL ENVIRONMENTAL CONSULTANTS, INC.

88F000005

Scott E. Hubbard, C.H.M.M.
Project Manager

Donald M. Bello, C.P.G.
Vice President

cc: Ivan Rosalsky, AMMCo
Ron Novis, Mayors Office - Kearny
BELL Project #EOG01-90059-02

DRAFT REMEDIAL INVESTIGATION REPORT/ REMEDIAL ACTION WORKPLAN AMERICAN MODERN METALS CORPORATION KEARNY, NEW JERSEY

American Modern Metals Corporation
65 Passaic Avenue
Kearny, Hudson County, New Jersey

September, 1995
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

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II-V	E	Analytical Data Packages
I	F	Monitoring Well Logs

1.0 INTRODUCTION

Bell Environmental Consultants, Inc. (BELL), on behalf of American Modern Metals Corporation (AMMCo), has prepared this Remedial Investigation Report/Remedial Action Workplan (RIR/RAW) for submission to the New Jersey Department of Environmental Protection (NJDEP). This RIR/RAW was prepared in specific reference to the AMMCo property located in Kearny, Hudson County, New Jersey (herein referred to as the site). This document has been formatted in general accordance with the NJDEP directive letters dated June 16, 1992, February 3, 1994 and February 9, 1995 (copies provided in Attachment A), the NJDEP *Technical Requirements for Site Remediation (N.J.A.C. 7:26E)*, other applicable NJDEP protocol, and generally accepted industry practices.

1.1 OVERVIEW

Killam Associates (Killam), the environmental consultant for the partnership of Sol Goldman, Irving Goldman, and Alex DiLorenzo Jr. (Goldman - the former owner of the site), submitted a Cleanup Plan and a Cleanup Plan Addendum on behalf of AMMCo to the NJDEP in August 1991 and April 1992, respectively. The NJDEP issued a Cleanup Plan approval dated June 1992 which directed AMMCo to conduct additional investigatory tasks. In July 1993, AMMCo submitted an Interim Environmental Cleanup Responsibility Act (ECRA) Cleanup Plan Report to the NJDEP. Subsequent to a review of this report, the NJDEP issued letters dated February 3, 1994 and February 9, 1995 to AMMCo (copies in Appendix A) which directed AMMCo to conduct additional investigatory and remedial tasks at the site. In response to requirements of the aforementioned NJDEP directive letters (as amended during a meeting between the NJDEP, AMMCo and BELL on November 21, 1994), AMMCo implemented a remedial investigation (RI) between June 1993 and April 1995 that consisted of the following tasks:

- A review of historical site information;
- An assessment of the physical setting of the site and surrounding area;
- The excavation of soils and collection of post-excavation (PE) soil samples;
- The installation of exploratory soil borings and soil sampling;
- A review of NJDEP files and relevant literature sources relative to the placement of historical fill material in the area surrounding the AMMCo site;
- The collection and analysis of light non-aqueous phase liquid (LNAPL) samples from ground water monitoring wells;
- The installation of an additional onsite ground water monitoring well;
- The sampling of ground water monitoring wells; and
- The preparation of a RIR/RAW.

VOLUME I

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Consequently, the objectives of this RIR/RAW are to:

- Present the results of the RI conducted at the site since submission of the Interim ECRA Cleanup Plan Report in July, 1993;
- Evaluate the current distribution of compounds of concern in soil and ground water at the site; and
- Present, if warranted, a proposal for remedial action(s) to be implemented relative to the site.

When completing the evaluation of environmental conditions at the site and potential remedial alternatives, the results of the RI were used in conjunction with information obtained from previous investigations. For clarity reasons, this report has been structured as follows:

- Section 1 presents an overview of the AMMCo project, a description of the site location, a description of current and historical site uses, and a history of the project;
- Section 2 provides a description of the physical setting of the site and surrounding area;
- Section 3 is a technical overview of the RI activities conducted at the site;
- Section 4 presents the results of the RI;
- Section 5 summarizes the results of the RI and provides an evaluation of current environmental conditions at the site;
- Section 6 presents the proposed remedial actions;
- Section 7 provides a remedial cost estimate;
- Section 8 details the implementation schedule and proposed reporting for remedial actions to be conducted at the AMMCo site;
- Section 9 identifies the limitations of the RIR/RAW.

1.2 SITE LOCATION

The AMMCo site is located in the Kearny Elite Industrial Park, which is located to the east and west of Passaic Avenue in Kearny, Hudson County, New Jersey (Figure 1-1). The site has an approximate area of 7.0 acres, with 5.7 acres located east of Passaic Avenue and the remaining 1.3 acres located west of Passaic Avenue. The portion of the site located east of Passaic Avenue is bounded by Marshall Street, Clark Avenue, and Belgrove Drive, and is designated by the Town of Kearny as Block 14, Lots 3 and 4. This portion of the site east of Passaic Avenue contains the AMMCo manufacturing operations. The portion of the site west of Passaic Avenue is designated as Block 1, Lots 9, 10, and 11 and contains AMMCo's office facilities. The site is located within an industrial area of Kearny.

1.3 CURRENT AND HISTORICAL SITE USES

The site is used by AMMCo to manufacture various aluminum products, including baseball bats and hockey sticks. Additionally, three tenants (Marshall Clark Manufacturing, Ferber Plastics, and RMS Sportswear) currently lease space in the portion of the AMMCo site located west of Passaic Avenue.

The AMMCo manufacturing process begins when aluminum billets are melted down and introduced into molds to create a product commonly known as a "blank". These "blanks" are then transported from the portion of the site east of Passaic Avenue to Marshall Clark Manufacturing, where they are subjected to various finishing operations such as painting, insertion of foam, and attachment of accessories.

The AMMCo site was owned from the early 1900's to 1959 by the Linen Thread Company, which operated a linen production plant onsite. The company manufactured linen thread, material and yarns from raw flax and twine, and sacks from raw hemp and jute. The property was purchased by York Associates from the Linen Thread Company on October 13, 1959. York Associates renamed the site to the Elite Industrial Park and subsequently leased the buildings and grounds to various industrial tenants. On September 16, 1963, York Associates transferred the property to Goldman, who continued to lease the site to various tenants under the name of the Elite Industrial Park.

On February 15, 1980, the Elite Industrial Park was entirely leased by the Airlite Aluminum Corporation (Airlite), a predecessor of AMMCo. Airlite subsequently subleased portions of the property to various industrial tenants and in late 1980, Airlite was purchased by AMMCo. In May 1986, an explosion and fire in the boiler room of the facility destroyed many of the structures located within the portion of the site to the east of Passaic Avenue. Tenants displaced as a result of the explosion and fire included Jay Are Fashions (a warehouse for imported clothing), H & G Industries (a manufacturer of paint brushes and rollers), Endre Doczy (a custom machine shop), and C & J Cycles (a custom motorcycle shop).

On December 14, 1988, Goldman sold the property to the DiLorenzo Properties Company. No tenants were displaced as a result of this change in ownership, operations remained unchanged, and AMMCo continued to lease the entire property and sublease portions of the property to other tenants. This sale of the property was a "trigger" event as defined by ECRA, which required the tenants and owners of the property to undergo the ECRA investigation process (see below).

In 1988, an Administrative Consent Order (ACO) was executed by AMMCo, Goldman, DiLorenzo and the NJDEP relative to the ECRA investigation to be conducted at the site.

The ACO allowed title transfer from Goldman to the DiLorenzo Properties Company and a single bond amount was established for the entire property. This situation caused several parties to be jointly responsible for the cost of the ECRA investigation. At this time, eight businesses had either an active lease (AMMCo) or sublease at the site. Therefore, the following nine ECRA case numbers were issued for the site: #88785 for AMMCo, #88892 for Endre Doczy, #88891 for H & G Industries, #88787 for Marshall Clark Manufacturing, #88786 for RMS Sportswear, #88A36 and #88A39 for Ferber Plastics, #88A37 for Jay Are Fashions, and #88A38 for C & J Cycles.

1.4 PROJECT HISTORY

The following is a historical summary of the AMMCo project to date (in chronological order):

- **August 1988** - An ECRA General Information Submission (GIS) was submitted to the NJDEP in response to a proposed ECRA trigger event (sale of the property).
- **November 10, 1988** - An ACO was issued by the NJDEP.
- **December 14, 1988** - AMMCo, Goldman and DiLorenzo executed the ACO. The ACO allowed title transfer from Goldman to the DiLorenzo Properties Company and a single bond amount was established for the entire property.
- **June 1989** - Nine Site Evaluation Submissions (SESs) and a Phase I Sampling Plan for the site were submitted to the NJDEP. These documents were prepared by Law Environmental (LAW) for Interwaste Service Company (ISCO), which was the consultant to Waters, McPherson, and McNeill, the legal counsel for Goldman.
- **August 1, 1989** - An ECRA site inspection was conducted at the site by the NJDEP.
- **September 13, 1989** - The NJDEP issued a Report of Inspection to AMMCo, which outlined potential areas of concern (AOCs) noted during the NJDEP ECRA inspection and identified necessary actions to address the potential AOCs.
- **November 30, 1989** - The NJDEP conditionally approved the LAW Phase I Sampling Plan dated June 1989. Killam replaced ISCO/LAW as the environmental consultant for Goldman.
- **April 1990 - May 1990** - Killam conducted Phase I field activities.
- **June 1990** - Killam submitted a report titled Results of Phase I Sampling to the NJDEP. A Phase II Sampling Plan was submitted with the report.
- **October 29, 1990** - Killam submitted an Addendum to the Phase II Sampling Plan to the NJDEP.
- **April 1991 - July 1991** - Killam conducted Phase II field activities.

- **August 1991** - Killam submitted the Results of Phase II Sampling to the NJDEP. A Cleanup Plan was submitted with the report.
- **April 1992** - Killam submitted an Addendum to the Cleanup Plan (August 1991) to the NJDEP.
- **June 16, 1992** - The NJDEP issued a letter to AMMCo conditionally approving the Killam Cleanup Plan.
- **July 1992** - BELL was retained by AMMco to implement the Killam prepared and NJDEP conditionally approved Cleanup Plan.
- **October 1992 - June 1993** - BELL conducted field activities in accordance with the Killam Cleanup Plan and the June 1992 NJDEP letter.
- **July 1993** - BELL submitted an Interim ECRA Cleanup Plan Report to the NJDEP. Modifications to the previously approved (June 1992) Cleanup Plan were proposed in the report.
- **February 1994** - The NJDEP issued a letter to AMMCo conditionally approving the proposed Cleanup Plan modifications.
- **June 1993 - April 1995** - BELL completed RI field activities in accordance with the NJDEP-approved modified Cleanup Plan. Field activities as part of the RI are further detailed in Section 3.0.

1.5 PROJECT OBJECTIVES

A RI was conducted at the site from June 1993 to April 1995. Information obtained from previous investigations conducted at the site was utilized in designing the RI. The objectives of the RI were to remediate and further delineate soil and ground water contamination at the site to facilitate the selection of a final remedial action. The specific objectives of the RI included:

- Evaluate the surface and subsurface characteristics of the site;
- Remediate and delineate soil contamination at the site;
- Assess the quality of fill historically placed at the AMMCo site and at other properties in the area of the site;
- Delineate ground water contamination at the site;
- Assess the ground water quality in the area surrounding the site; and
- Identify a viable remedial action for the soil contamination at the site.

2.0 PHYSICAL SETTING

2.1 TOPOGRAPHY AND DRAINAGE

The following subsections discuss the topography and drainage specific to the region surrounding the AMMCo site and the site-specific topography and drainage observed at the AMMCo site.

2.1.1 Regional Topography And Drainage

The AMMCo site is located in the northeast region of New Jersey. This region of New Jersey has been impacted by various glacial episodes and is characterized by low rolling, bedrock topography. Based upon a review of the United States Geological Survey (USGS) Orange and Elizabeth topographic quadrangles of the area, the topography in the area surrounding the AMMCo site ranges in elevation from 5 feet above mean sea level (MSL) to 120 feet above MSL. Regional drainage surrounding the AMMCo site occurs through natural drainage channels and manmade drainage structures (e.g., storm sewers). The western portion of the site borders the Passaic River while the eastern portion of the site is situated approximately 500 feet to the east of the Passaic River.

2.1.2 Site-Specific Topography And Drainage

Based on a review of USGS topographic maps, the AMMCo site is located at approximately 15 feet above MSL. The site slopes gently to the west towards the Passaic River. Surface water runoff from the area of the site located east of Passaic Avenue flows to storm drains, which ultimately discharge to the Passaic River. Surface water runoff from the area of the site located west of Passaic Avenue flows overland to the Passaic River.

2.2 SOILS

The following subsections discuss the soil characteristics of the region surrounding the AMMCo site and provide a description of soil at the site as noted during installation of monitoring wells, soil borings, excavations, and test pits.

2.2.1 Regional Soils

Based on a review of the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) *Soil Survey for Hudson County, New Jersey*, the majority of the soils located in the region surrounding the AMMCo site are described as Udothents soils. This land type has been filled and smoothed, or otherwise extensively disturbed by excavation and filling activities, to a depth of 3 feet or more. The original soil can no

longer be identified. Fill material generally consists of a mixture of stones, boulders, rubble, and soil material. Most areas are presumed to have been deep, very poorly drained organic or mineral soils, which had fill added to raise ground surface elevations to prevent flooding of properties adjacent to the river. These areas require on-site investigations for all uses because of the variability of the soil material in the filling process.

2.2.2 Site-Specific Soils

Fill material was observed at the site from 0 to 4 feet below ground surface (BGS) during the installation of monitoring wells, soil borings and test pits. Fill material consisted primarily of gravel and sand sized particles with miscellaneous debris (i.e., brick and glass fragments, cinders, stones, etc.) intermixed. Underlying the fill materials, black, brown, and reddish-brown gravels, sands, silts, and clays were observed. As indicated on the soil boring logs (Appendix B), sandy subsoils are more predominant along the northeastern and northwestern property boundaries (along Marshall Street and Passaic Avenue), while clayey subsoils are more predominant along the southeastern and southwestern property boundaries (along Clark Avenue and Belgrove Drive).

2.3 GEOLOGY/HYDROGEOLOGY

The following subsections provide a description of the geologic/hydrogeologic characteristics of the region surrounding the AMMCo site and provide a description of the geologic/hydrogeologic characteristics at the site as noted during installation of monitoring wells, soil borings, excavations, and test pits.

2.3.1 Regional Geology/Hydrogeology

The AMMCo site is situated in the Piedmont physiographic province, which comprises the eastern half of northern New Jersey. The site is situated on glacio-fluvial Pleistocene deposits overlying Pleistocene glacial till deposits. The fluvial deposits consist of a stratified, unconsolidated, heterogeneous mixture of well graded sands and gravels, with a lesser percentage of silt and clay, and range from fifteen to twenty-five feet in thickness. The majority of these deposits were formed as a result of stream channel outwash. Included in these deposits are lenses of silts and clays recently deposited by the Passaic River.

Underlying these deposits is a Pleistocene glacial till deposit which consists of an unconsolidated, unstratified mixture of sand, clay and gravel. The thickness of the Pleistocene deposits varies greatly, from less than ten feet thick in the western part of Newark, to 200 feet thick east of Harrison. Underlying the glacial deposits is the red shale

and sandstone bedrock of the Passaic Formation (formerly the Brunswick Formation) of the Newark Group. This Triassic bedrock originated as sand, silt and mud which eroded from older rocks northwest and southeast of the area. The strata have been tilted northwestward with a northeast trend of the beds. The total thickness of the rocks of the Passaic formation is estimated at 6,000 to 7,000 feet.

The AMMCo site is situated in the Lower Passaic River Discharge Basin. Ground water, which occurs under unconfined conditions within the Pleistocene overburden deposits, is discharged regionally to this drainage basin. The bedrock aquifer in the region is the Triassic Age Passaic Shale formation. The storage capacity of the shale bedrock is relatively low, and can only be adequately recharged from the porous, permeable, overlying deposits. The primary porosity of the bedrock is not sufficient enough to allow water movement through the bedrock. A secondary porosity system, created by cracks and fractures, is essentially the only means for this aquifer to yield or transmit water. This system of cracks and fractures intersect to allow water to move directionally according to the orientation of the prevalent fracture system (generally trending northeast to southwest). As greater depths are reached, the weight of the overlying materials increase and tends to close the cracks, thereby reducing the capacity of the formation to store and transmit water.

2.3.2 Site-Specific Geology/Hydrogeology

As indicated on the soil boring logs (Appendix B), fill material is present at the site to a depth of approximately four feet BGS. The fill material consists primarily of gravel and sand sized particles with miscellaneous debris (i.e., brick and glass fragments, cinders and stones) intermixed. Underlying the fill materials are black, brown, and reddish-brown gravels, sands, silts, and clays.

A review of water levels observed within onsite ground water monitoring wells indicate a southwesterly ground water flow direction. The ground water table was noted in December 1994 at an approximate depth of 15 feet BGS in the eastern portion of the site (at Clark Street) to an approximate depth of 8 to 10 feet BGS in the western portion of the site (nearest to the Passaic River). The hydraulic gradient across the site ranged from 0.0013 to 0.0045 feet/foot (depending on tidal conditions and area of the site). The western portion of the site has been observed to be influenced by tidal fluctuations. Ground water flow conditions at the site are discussed further in Section 4.2.1.

2.4 WETLANDS

The AMMCo site, and the properties adjacent to the site, are identified by the National Wetlands Inventory (NWI) as Upland. The portion of the Passaic River that is located to

the west of the site is identified as Estuarine Subtidal Open Water. A Wetlands Area Map for the area surrounding the AMMCo site is presented as Figure 2-1.

2.5 SURROUNDING PROPERTY USES

The AMMCo site is located within an industrial section of Kearny, that is generally viewed as an extension of the Ironbound section of Newark, which is located opposite the Passaic River from the site. The properties surrounding the AMMCo site are described as follows:

- East of the site and across Clark Street is residential housing complex identified as the "General Kearny Apartments";
- To the north of the site, across Marshall Street, is a commercial strip mall which includes a "Shop Rite" grocery store, a laundromat, and retail stores;
- To the west of the site is the Passaic River;
- To the south/southwest of the site are two gasoline service stations; and
- To the northwest and southwest of the site, beyond Passaic Avenue, are the Franklin Chemical Company (formerly known as Franklin Plastics) and the American Strip Steel Company, respectively.

3.0 TECHNICAL OVERVIEW OF REMEDIAL INVESTIGATION ACTIVITIES

Previous investigation reports submitted to the NJDEP include the Killam Results of Sampling Plan dated June 1990, the Killam Results of Phase II Sampling Plan dated August 1991, and the BELL Interim ECRA Cleanup Plan Report dated July 1993. Analytical summary tables for all soil and ground water samples collected prior to June 1993 are included in Appendix C.

NJDEP letters dated February 3, 1994 and February 9, 1995, directed AMMCo to conduct additional investigatory tasks relative to compounds of concern identified in soil and ground water at the site. The following sections summarize the RI activities implemented by AMMCo at the site between June 1993 and April 1995. Table 3-1 summarizes the field activities conducted at the site since June 1993.

3.1 AREAS OF CONCERN (AOCs)

Several AOCs were initially identified at the site in the "Phase I Sampling Plan" submitted to the NJDEP by ISCO/LAW in June 1989 and were modified in the Interim ECRA Cleanup Plan Report submitted to the NJDEP by BELL in July 1993. Each former AOC is shown on the Site Plan (Figure 3-1). Each AOC and the current status relative to NJDEP requirements are further described as follows:

Area 1: Pre-Burn/Smelter Stack Area. **No Further Action was approved for this AOC by the NJDEP on February 3, 1994.**
Area 2: Trash Compactor. **No Further Action was approved for this AOC by the NJDEP on September 17, 1990.**
Area 3: Fuel Oil Underground Storage Tank (UST) Excavation (near Building #24).
Area 4: Transformer Pad. **No Further Action was approved for this AOC by the NJDEP on February 3, 1994.**
Area 5: Loading Dock (near Building #18) . **No Further Action was approved for this AOC by the NJDEP on June 15, 1992.**
Area 6: Sump with Pump (near Loading Dock and Building #18. **No Further Action was approved for this AOC by the NJDEP on June 15, 1992.**
Area 7: Sump in Loading Dock (near Building #18). **No Further Action was approved for this AOC by the NJDEP on June 15, 1992.**
Area 8: Transformers (near Loading Dock and Building #180. **No Further Action was approved for this AOC by the NJDEP on June 15, 1992.**
Area 9: Sump Metals Storage Area.
Area 10: Waste Storage Area.
Area 11: Endre Doczy Building (Building # 9).

Area 12: Loading Dock Sump Discharge Area.
Area 13: Drain/Manhole (near Sharp's Furniture). **No Further Action was approved for this AOC by the NJDEP on February 3, 1994.**
Area 14: Gasoline UST Excavation. **No Further Action was approved for this AOC by the NJDEP on September 17, 1990.**
Area 15: Asbestos Areas (Building #'s 22 and 24). **No Further Action was approved for this AOC by the NJDEP on February 3, 1994.**
Area 16: Processing Building #22. **No Further Action was approved for this AOC by the NJDEP on February 3, 1994.**
Area 17: Drum Storage Area.
Area 18: Asbestos Flue Stacks.
Area 19: Drum Storage Area (near Building #23).
Area 20: Tunnel Area.
Area 21: Loading Dock at Marshall Clark Building.
Area 22: Area Directly Behind Wall of Building #23. **No Further Action was approved for this AOC by the NJDEP on February 3, 1994.**
Area 23: Oil Filter Area (near Endre Doczy Building).

As discussed in the meeting between BELL, AMMCo, and the NJDEP on November 21, 1994, the AOCs that are located east of Passaic Avenue (formerly Areas 1 through 18, 20, and 23) will be evaluated as one AOC (AOC I) relative to the delineation of compounds of concern in soil and selection, if warranted, of remedial actions for soil The AOCs west of Passaic Avenue (formerly Areas 19, 21, and 22) will also be evaluated as one AOC (AOC II) relative to soil issues.

3.2 SOIL INVESTIGATION

AOCs at the AMMCo site requiring additional delineation/remediation of compounds of concern in soil were identified in the NJDEP directive letter dated February 3, 1994. Activities performed relative to soil issues in these AOCs included the excavation and disposal of soil, the installation of exploratory test pits and collection of PE soil samples, and the installation of soil borings and collection of soil samples. The locations of samples collected prior to the RI that contained concentrations of compounds of concern exceeding NJDEP Soil Cleanup Criteria (SCC) are presented in Figure 3-2. Areas of soil excavated during the RI and the locations of the associated post-excavation (PE) soil samples are shown on Figure 3-3.

Soil samples were collected using appropriately decontaminated stainless steel scoop and hand augers, were transferred into laboratory-supplied glassware, and were subsequently placed on ice for shipment to Veritech Environmental and Services Analytical Services, Inc. (Veritech) located in Butler, New Jersey (NJ Certification # 14622).

Soil excavation during the RI was conducted by Rosil Environmental Contracting of Belleville, New Jersey. Excavated soil was transported offsite for use as cover material at the Linden Landfill. The excavations were backfilled, subsequent to obtaining PE samples, with certified clean fill delivered to the AMMCo site by John Almasi Trucking, Inc. of Woodbridge, New Jersey. The clean fill originated from Block # 249, Lot # 1 which is located on Lower Main Street, Township of Sayreville, New Jersey. Certifications for both the soil disposal and clean fill are included as Appendix D.

Additionally, BELL conducted a historical fill investigation during the RI to determine if base neutral (BN) compounds and metals historically detected in soils at the site may be associated with the placement of historical fill at the site. BELL conducted a literature review and reviewed NJDEP files associated with soil investigations at surrounding sites to investigate the quality of historical fill used in the area of the site. The results of the historic fill investigation are presented in Section 4.1.8 of this RIR/RAW.

3.2.1 Area 3 - Fuel Oil Underground Storage Tank (UST) Excavation Adjacent to Former Boiler Room

Former Piping Associated with Former Fuel Oil USTs - The NJDEP has directed AMMCo to collect one soil sample for each 15 linear feet of the piping associated with the former underground storage tanks (USTs), previously located in the area adjacent to the former boiler room (Figure 3-3). The former USTs were located adjacent to Building 14 (Boiler Room). When the USTs were removed, soil was excavated to within 10 feet of Building 14. The piping associated with the USTs was positioned underground until entering the building, where the piping was positioned aboveground until connection with the boilers. The length of piping from the USTs to the point at which it entered the building was less than 15 feet. **No further action is considered warranted relative to the piping, as the "Technical Requirements for Site Remediation" (N.J.A.C. 7:26E) only requires sampling for lengths of piping greater than 15 feet.** A certification from the property owner relative to the piping is provided in Appendix D.

PAHs in Area of Former Killam Samples SS-9B and SS-9C - AMMCo was directed to either remediate or place engineering/institutional controls for soils in the area of former Killam soil samples SS-9B and SS-9C (Figure 3-2). These samples, collected from 0 to 0.5 feet BGS, contained concentrations of polynuclear aromatic hydrocarbons (PAHs) exceeding NJDEP Soil Cleanup Criteria (SCC). AMMCo is submitting a draft Declaration of Environmental Restrictions (DER) with this RIR/RAW to the NJDEP. The DER includes a proposal to place a bituminous concrete cap over the entire site to limit the potential for direct contact with soils containing PAHs and metals at concentrations exceeding NJDEP Residential Direct Contact (RDC) and Non-Residential Direct Contact (NRDC) SCC. **No further action is proposed relative to these soils following installation of the cap.**

to this area. It should be noted that no sump/drain discharge piping was encountered during the investigation of the transformer pad.

3.2.3 Area 9 - Sump Metals Storage Area

The NJDEP directed AMMCo to submit the most recent round of PE soil sampling data for two distinct areas of Area 9 which were addressed during the RI, which included the former sample locations PE-101 through PE-104 and soils surrounding MW-6 (Figure 3-2).

Former Sample Locations PE-101 Through PE-104 - On June 18, 1993, soils in the area of former sample locations PE-101 through PE-104 were excavated. This excavation was completed to address elevated levels of arsenic detected within samples PE-101 through PE-104. The sides and base of the existing excavation were expanded by approximately 1.5 to 2.0 feet, resulting in a triangular excavation with sides of 16.0 feet in length and a base at 6.0 feet BGS. Subsequent to excavating, four PE soil samples (PE-141 through PE-144, Figure 3-3) were collected and were analyzed for arsenic. One sample was collected from the base of each of the three sidewalls and one sample was collected from the center of the excavation. The analytical results for these samples are presented in Section 4.1.1.

Soils Surrounding MW-6 - On June 18, 1993, soils around MW-6 were excavated. This excavation was completed to address elevated PAHs detected within this area (Killam Phase I investigation sample numbers 6013 and 6016). The resulting excavation measured 15.0 feet by 12.0 feet, and extended to a depth of 2.0 feet BGS (Figure 3-3). Five PE soil samples (PE-136 through PE-140, Figure 3-3) were collected and were analyzed for base neutral compounds plus fifteen unknown peaks (BN+15). One sample was collected from the base of each of the four sidewalls and one sample was collected from the center of the base of the excavation. The analytical results for these samples are presented in Section 4.1.1.

3.2.4 Area 10 - Waste Storage Area

The NJDEP directed AMMCo to collect additional PE soil samples at the locations of former samples PE-46 through PE-50 (December 15, 1992, Figure 3-2), PE-36 through PE-40, and PE-105 (December 10, 1992 and January 28, 1993, respectively, Figure 3-2). The additional sampling was required to verify that PAHs that were historically detected in these areas at concentrations exceeding NJDEP RDC and NRDC SCC had been remediated.

Area of Former Samples PE-46 through PE-49 (December 15, 1992) - The NJDEP directed AMMCo to collect additional PE soil samples at the locations of former samples

PE-46 through PE-50 (December 15, 1992, Figure 3-2). The additional sampling was required to verify that PAHs that were historically detected (Killam sample SS-11C collected during their Phase I investigation) in this area from 0 to 0.5 feet BGS and 1.5 to 2.0 feet BGS at concentrations exceeding NJDEP RDC and NRDC SCC had been remediated. The excavation installed in this area in December 15, 1992 extended to a depth of five feet BGS. Samples PE-46 through PE-50 were collected at the base of this excavation (five feet BGS) and contained no compounds at concentrations exceeding NJDEP SCC. The NJDEP letter dated February 3, 1994 required AMMCo to collect samples from the excavation sidewalls from 0 to 2 feet BGS to verify the horizontal clean zones in this area. On April 28, 1994, following reexcavation of this area to the limits of the former excavation (1992), four PE soil samples (PE-165 through PE-168, Figure 3-2) were collected from the center of each of the four sidewalls of the previous excavation from 1.5 to 2.0 feet BGS and were analyzed for BN+15. The analytical results for these samples are presented in Section 4.1.2.

Area of Former Samples PE-36 through PE-40, and PE-105 (December 10, 1992 and January 28, 1993, respectively) - The NJDEP directed AMMCo to collect additional PE soil samples in the area of MW-5 at the locations of former samples PE-36 through PE-40, and PE-105 (December 10, 1992 and January 28, 1993, respectively, Figure 3-2). The additional sampling was required to verify that PAHs that were historically detected in this area from 0 to 2.0 feet BGS at concentrations exceeding NJDEP RDC and NRDC SCC had been remediated. The excavation installed in this area in December 15, 1992 extended to a depth of 6.5 feet BGS. Samples PE-36 through PE-40, and PE-105 were collected at the base of this excavation (6.5 feet BGS) and contained no compounds at concentrations exceeding NJDEP SCC. The NJDEP letter dated February 3, 1994 required AMMCo to collect samples from the excavation sidewalls from 0 to 2 feet BGS to verify the horizontal clean zones in this area. Following reexcavation of this area to the limits of the former excavation (1992), additional PE soil samples were collected in the area of MW-5 on April 28, 1994 from the locations of former samples PE-36 through PE-40, and PE-105. Four PE soil samples (PE-161 through PE-164, Figure 3-3) were collected from each of the excavation sidewalls at a depth of 1.5 feet BGS and were analyzed for BN+15. The analytical results for these samples are presented in Section 4.1.2.

3.2.5 Area 11 - Endre Doczy Building (Building # 9)

PAHs in Areas Surrounding Former Samples PE-107 through PE-109 - The NJDEP directed AMMCo to further delineate the elevated concentrations of PAHs historically detected in the surficial soils at the locations of former PE soil samples PE-107 through PE-109 (January 28, 1993, Figure 3-2). On April 28, 1994, two test pits were installed at varying distances to the northwest from locations of former PE soil samples PE-107

through PE-109 to provide information relative to the distribution of PAHs in this area. Delineation of PAHs was performed via the installation of test pits to the west of former PE soil samples PE-107 through PE-109 only based on the following:

- The former PE sample (PE-106 - Figure 3-3) collected on the east side of the excavation contained PAHs at concentrations below the most stringent of the NJDEP SCC;
- A permanent structure (Sharps Furniture) was located approximately eight feet south of the area of former PE soil samples PE-107 through PE-109; and
- A test pit which is associated with former PE soil samples PE-110 through PE-113 (Figure 3-3), was installed as part of the RI at a location approximately 42 feet north of former PE soil samples PE-107 through PE-109.

The first test pit was excavated to a depth of 0.5 feet BGS at a location approximately 15 feet northwest of the locations of former PE soil samples PE-107 through PE-109 (Figure 3-3). One PE soil sample (PE-169, Figure 3-3) was collected from the base of the test pit and was analyzed for BN+15. The second test pit was excavated to a depth of 2.0 feet at a location approximately 55 feet northwest of the locations of former PE soil samples PE-106 through PE-109 (Figure 3-3). One PE soil sample (PE-170, Figure 3-2) was collected from the base of the test pit and was analyzed for BN+15. The analytical results for these samples are presented in Section 4.1.3.

PAHs and Copper in Areas Surrounding Former Samples PE-110 through PE-113 - AMMCo was directed to further delineate the PAHs historically detected in the surficial soils in the locations of former PE soil samples PE-110, PE-111, and PE-113 and copper in the location of former sample PE-112 (January 28, 1993, Figure 3-2). On April 26, 1994, four test pits were excavated and soil samples collected in the area associated with former PE soil samples PE-110, PE-111, and PE-113 to further delineate the PAHs historically detected in these samples. A test pit was excavated at a distance of approximately 10 feet to the south, north and east of the former sample excavation. An additional test pit was excavated approximately 35 feet southwest of former sample PE-111 to provide additional information relative to the distribution of PAHs in this area. A PE soil sample was collected from the base of each of the test pits (PE-155 through PE-158, Figure 3-3) at 2.0 feet BGS and was analyzed for BN+15. A test pit was installed approximately 10 feet to the west of the former excavation, to delineate elevated concentrations of copper detected in former sample PE-112, which was located on the west side of the former excavation. A PE soil sample (PE-154, Figure 3-3) was collected from this test pit at 3.0 feet BGS and was analyzed for copper, based on the elevated concentrations of copper that were detected in former sample PE-112. The analytical results for these samples are presented in Section 4.1.3.

3.2.6 Area 12 - Loading Dock Sump Discharge Area

The NJDEP directed AMMCo to submit the most recent round of PE soil sampling data for the area associated with former sample locations PE-61 through PE-65 (December 16, 1992, Figure 3-2). On June 17, 1993, soils in the area of former sample locations PE-61 through PE-65 were excavated. The additional excavation and sampling was required to remediate PAHs compounds that were originally detected in former samples PE-61 through PE-64 at concentrations exceeding NJDEP RDC and NRDC SCC from 1.2 to 1.5 feet BGS. The new excavation had the dimensions of 25.0 feet by 30.0 feet, and extended to a depth of 2.0 feet BGS. Subsequent to completion of the new excavation, five PE soil samples (PE-130 through PE-134, Figure 3-2) were collected and were analyzed for BN+15. One sample was collected from the base of each of the four excavation sidewalls and one sample was collected from the center of the base of the excavation. The analytical results for these samples are summarized in Section 4.1.4.

3.2.7 Area 16 - Processing Building #22

Although the NFA proposal was approved for this AOC by the NJDEP in the February 3, 1994 directive letter, the NJDEP expressed concern at the November 21, 1994 meeting that soils in this area may contain TPH concentrations exceeding 10,000 mg/kg. A review of historical soil data indicates that one soil sample (PE-4, Figure 3-2) collected on October 1, 1992 contained TPH at a concentration exceeding the NJDEP SCC for total organics of 10,000 mg/kg (19,000 mg/kg). However, the area associated with PE-4 was re-excavated on February 2, 1993 and a soil sample (PE-123, Figure 3-2) was collected at a depth of 2.0 feet BGS. Review of the analytical data (see Appendix C - Summary of Second Round Post-Excavation Samples) indicates that PE-123 contained TPH at a concentration of 5,800 mg/kg, which is below the NJDEP SCC for total organics. **No further action is proposed for this area.**

3.2.8 Area 19 - Drum Storage Area Adjacent to Building #23

The NJDEP directed AMMCo to further delineate the PAHs and arsenic historically detected in the area of former PE soil samples PE-125 through PE-129 (April 14, 1993, Figure 3-2). On April 28, 1994, a total of four test pits were excavated in the area of the former PE soil samples PE-125 through PE-129 to further delineate the PAHs and arsenic detected in these samples at approximately 4.5 feet BGS. A test pit was excavated at an approximate distance of 10 feet from each of the sidewalls of the former excavation (former samples PE-125 through PE-129 were collected from the sidewalls of the former excavation). A PE soil sample was collected from the center of the base (1.5 to 2.0 feet BGS) of each of the test pits. The PE soil samples (PE-171 through PE-174, Figure 3-3)

were analyzed for BN+15 and arsenic. The analytical results for these samples are summarized in Section 4.1.5.

3.2.9 Area 20 - Tunnel Area

The NJDEP letter directed AMMCo to conduct soil sampling in the area of former samples PE-120 and PE-121 (February 2, 1993, Figure 3-3) based on the historical detection of copper in these locations at concentrations exceeding NJDEP RDC and NRDC SCC at a depth of approximately 3.0 feet BGS. On April 26, 1994, three test pits were excavated to further delineate the elevated levels of copper detected in former samples PE-120 and PE-121. One test pit was installed adjacent to the northern corner of the former excavation, one test pit was installed adjacent to the eastern corner of the former excavation, and one test pit was installed adjacent to the southwest sidewall of the former excavation (Figure 3-3). One PE soil sample (PE-150, PE-152, and PE-153) was collected from the base (3.0 feet BGS) of each of the test pits and was analyzed for copper. The analytical results for these samples are summarized in Section 4.1.6.

3.2.10 Area 21 - Loading Dock at Marshall Clark Building

PAHs in Former Sample Locations PE-56 through PE-60 (December 16, 1992) - The NJDEP directed AMMCo to remediate soils containing elevated concentrations of PAHs to a depth of 3.0 feet BGS in this area. Specifically, AMMCo was directed to remove additional soils from the locations of former PE samples PE-56 through PE-60 (December 16, 1992, Figure 3-2). AMMCo was directed to collect PE samples at 1.5 to 2.0 feet BGS from each of the sidewalls following completion of the new excavation. AMMCo has deferred further soil investigations in this area based upon the November 21, 1994 meeting between BELL, AMMCo, and the NJDEP. Further soil investigation in this area is contingent upon the results of the historical fill investigation (Section 4.1.8).

Discharge Point of Drain - Additionally, the NJDEP required that AMMCo determine the discharge point of the drain located in this area. According to AMMCo personnel, this drain formerly discharged to the Passaic River. **AMMCo has sealed the drain and has backfilled the excavation located adjacent to the drain (which was initially installed to perform piping repairs). Because the drain is no longer in use and has been sealed, AMMCo proposes no further action relative to this area.**

3.2.11 Area 23 - Oil Filter Area Adjacent to Endre Doczy Building

The NJDEP directed AMMCo to remove additional soils and collect additional PE samples in this area to remediate PAHs and metals detected in this area at a depth of approximately 1.5 feet BGS. Specifically, AMMCo was directed to excavate additional

soils at the locations of former samples PE-95 through PE-99 (December 30, 1992, Figure 3-2). On September 15, 1993, soils in the area of former sample locations PE-95 through PE-99 were excavated. The new excavation had the dimensions of 35.0 feet by 15.0 feet, and extended to a depth of 3.5 feet BGS. Five PE soil samples (PE-145 through PE-149, Figure 3-3) were collected from the sidewalls and base of the new excavation. Analytical parameters for each of the PE samples were selected based on the results of former samples PE-95 through PE-99 and are presented in Table 3-1. The analytical results for these samples are summarized in Section 4.1.7.

3.2.12 Soil Boring Installation and Sampling

Between April 5 and 10, 1995, BELL installed seventeen soil borings (SB-1 through SB-17) to a depth of 2.5 feet BGS around the perimeter of AOC I (the area of the site east of Passaic Avenue). These borings were installed to provide information relative to the distribution of BN compounds and selected metals in soils at and adjacent to the site and to assess the potential for historical fill placement at the site to be the source of the BN compounds and selected metals historically detected at the site.

The soil borings were advanced by a qualified BELL geologist using a 2 1/2-inch inner diameter, one-foot long stainless steel hand auger. Upon attaining the base of the first sampling interval (0 to 6 inches BGS), the auger was retracted from the bore hole and the soil was emptied into a appropriately decontaminated stainless steel mixing bowl, where it was homogenized using a stainless steel scoop. A BELL geologist then proceeded to provide a description of the sample, including moisture content, soil type, and evidence of contamination. Soil samples were obtained in accordance with NJDEP protocol and the NJDEP *Field Sampling Procedures Manual* (May 1992). The samples were screened both visually and with a photoionization detector (PID) for evidence of contamination.

The BELL geologist proceeded to excavate to the top of the second sampling interval (2.0 feet BGS) using a stainless steel shovel and a stainless steel pry bar. Upon attaining the top of the second sampling interval, a BELL geologist decontaminated the auger in accordance with NJDEP-approved procedures and subsequently advanced the auger to the base of the second sampling interval (2.0 to 2.5 feet BGS). The auger was then retracted from the bore hole and the sample was screened and collected using the methods described above. Soil samples collected from the soil borings were analyzed for BN+15, arsenic, copper, lead, and zinc. In addition, soil samples collected from 2.0 to 2.5 feet BGS from borings SB-2, SB-3, and SB-17 (the background sample location) were analyzed for aluminum to determine if aluminum concentrations detected in soil samples onsite were also present in fill materials located upgradient of site operations. All equipment was decontaminated between each sample location in accordance with NJDEP-approved procedures.

3.2.13 Historical Fill Investigation and Literature Review

On March 31, 1995 and April 3, 1995, BELL conducted a review of the NJDEP files associated with investigations conducted at sites in the area surrounding the AMMCo site to investigate the regional occurrence of BN compounds and selected metals in soil. This file review was conducted to determine if compounds of concern historically detected at the AMMCo site (PAHs and selected metals) are representative of fill materials historically placed at the site and in the area of the site. Additionally, BELL performed a literature review to investigate the natural occurrence and regional distribution of compounds of concern identified at the AMMCo site (PAHs and selected metals). Literature sources reviewed included *Benzo(a)Pyrene in New Jersey - Results from a Twenty-Seven-Site Study* (Office of Science and Research - NJDEP), *Organic Contaminants in Welsh Soils; Polynuclear Aromatic Hydrocarbons* (Environmental Science Technology, 23, 5: 540-550, 1989), *Element Concentration in Soils and Other Surficial Materials of the Conterminous United States* (USGS, 1984) and the *Soil Chemistry of Hazardous Materials* (Hazardous Materials Control Research Institute). The results of the NJDEP file and literature reviews are presented in Section 4.1.8.

Additionally, BELL reviewed soil boring logs and performed telephone interviews with representatives of the Town of Kearny Engineering and Health Departments, the Essex County Historical Society, and the NJDEP. As the fill material located at the site was deposited prior to 1900, historical aerial photographs or topographic maps showing areas of the site prior to and subsequent to placement of fill materials were not available during the RI.

3.3 GROUND WATER INVESTIGATION

BELL conducted a ground water investigation at the AMMCo site to accomplish the following objectives:

- Further assess the distribution of dissolved phase compounds of concern in ground water at the site;
- Evaluate potential sources of volatile organic (VO) contamination identified in ground water samples collected at the site;
- Establish ground water flow conditions at the site; and
- Evaluate LNAPL distribution at the site.

The RI ground water investigation consisted of the measurement of ground water elevations, the installation of an additional monitoring well, collection of ground water samples from monitoring wells, LNAPL recovery and fingerprint characterization, and a review of the NJDEP files associated with offsite ground water investigations. Analytical

parameters utilized as part of the RI are presented in Table 3-1. Monitoring well logs, which include a description of the soils and subsurface materials, field observations, well materials, and field screening results, are included as Appendix E of this RIR/RAW. Compounds detected in concentrations exceeding NJDEP *Class II-A GWQS* within ground water samples collected at the site are presented in Figure 4-3. The following subsections detail the ground water investigation completed during the RI at the AMMCo site.

3.3.1 Monitoring Well Installation

In order to delineate the LNAPL detected within MW-1 and MW-9 and to provide additional information relative to the distribution of compounds of concern in ground water at the site, one shallow ground water monitoring well (BEC-12S) was installed on April 22, 1994, at a location downgradient of MW-1 (Figure 3-1) and the former UST excavation (former Area 3). Monitoring well installation was performed by SBI Environmental, Inc. (SBI) of Wayne, New Jersey.

The ground water monitoring well (BEC-12S) was installed using air rotary drilling techniques in general accordance with the NJDEP guidelines for monitoring well construction in semi-consolidated and consolidated formations. Split spoon samples were collected continuously until ground water was encountered and were field screened with a PID. Soils were classified using the Burmeister Soil Classification System, with stratigraphic units described using the Unified Soil Classification System. Additionally, observations regarding the color, composition, moisture content, and presence of visible contamination were noted. Appendix F provides the boring log for this well.
At the selected location, air rotary drilling techniques were utilized to advance an eight-inch diameter borehole through the subsurface. A large compressor provided air that was piped into the swivel hose, which is connected to the top of the drill pipe. The air was forced down the drill pipe, escaped through small ports at the bottom of the drill bit, and lifted the cuttings to the surface while cooling the bit. The cuttings were continuously blown out of the top of the borehole by the force of the air and collected at the surface. The borehole was advanced to approximately ten feet below the water table (total depth of approximately 19 feet BGS).

The PVC well materials included fifteen feet of four-inch inside diameter (ID), factory milled, 20-slot (0.020 inch) PVC screen, flush threaded with a PVC well plug, and four-inch ID PVC riser sufficient to extend to the ground surface. The targeted screen interval extended nine feet below and six feet above the static water level observed at the time of installation. Morie #2 sand (utilized as gravel packing material) was introduced within the annular space starting at the bottom of the borehole and extended to two feet above the well screen. A cement slurry composed of bentonite and Portland cement was pressure grouted into the remainder of the annular space and extended to a depth of six inches

BGS. A one-foot long six-inch ID steel casing with cap (flush mount) and locking mechanism was set into the cement slurry. The well was completed with a water-tight flange cap and a designation well tag. Physical data for all monitoring wells are summarized in Table 3-2. The newly installed well was developed with a submersible pump until a turbid-free discharge was obtained, with purged development water containerized in 55-gallon drums.

3.3.2 Monitoring Well Sampling

Ground water samples were collected from onsite and offsite monitoring wells on three occasions: June 7, 1993, May 10, 1994, and November 7, 1994. Information pertaining to the wells sampled on the above-referenced dates and targeted analytical parameters is summarized in the table below.

DATE	WELL DESIGNATION	ANALYTICAL PARAMETERS
June 7, 1993	MW-3	Aluminum
	MW-4	Aluminum
	MW-5	Aluminum
	MW-6	VO+15; Aluminum
	MW-10	VO+15; Aluminum
	BEC-11S	BN+15; Aluminum
May 10, 1994	MW-6	VO+10
	MW-10	VO+10
	BEC-12S	VO+10; BN+15
November 7, 1994	BEC-12S	VO+15; BN+15

Prior to sampling, each monitoring well was inspected by BELL personnel to observe and document the security of the well. Each monitoring well was subsequently opened and screened with a PID to measure accumulated organic vapors, if any, within each well column. The static fluid level within the well was inspected for evidence of free-phase product visually via a clear Teflon bailer, and using an interface probe. Free-phase product (LNAPL) was observed in MW-1, MW-7, MW-8, and MW-9 during the June 7, 1993 sampling event and in MW-7, MW-8 and MW-9 during the May 10, 1994 sampling event. A sheen was noted in MW-1 during the November 7, 1994 sampling event. The monitoring wells which contained free-phase hydrocarbons were not sampled. In addition, BEC-11S was inaccessible (under water) during the May 10, 1994 event, and therefore, could not be gauged or sampled.

The static ground water level in each well was measured using an electronic water level indicator with an accuracy of 1/100 of a foot. An initial sample of ground water was collected from each well and analyzed using field instrumentation for pH, temperature, conductivity, and dissolved oxygen. Subsequently, three to five volumes of the saturated

well column and annular space were purged from each well using a centrifugal pump equipped with a swing valve and flow meter, and dedicated HD-100 PVC piping. Following purging procedures, the ground water in each well was allowed to return to equilibrium and ground water samples were subsequently collected using disposable Teflon bailers. The bailer was slowly lowered into the monitoring well below the water table, avoiding excess agitation/aeration of the ground water, and then retracted.

Laboratory vials for VO+15 analysis, if applicable, were filled with the first bailer of ground water retrieved from each monitoring well. Ground water samples were containerized in laboratory-supplied glassware, which were then sealed and labeled. Once sealed and labeled, the sample vials were placed into a sample cooler maintained at a temperature of four degrees Celsius and transported to the analytical laboratory.

Ground water sampling procedures were performed in accordance with the NJDEP *Field Sampling Procedures Manual* (May 1992). A summary of the analytical results for ground water samples and a comparison with associated NJDEP Class II-A Ground Water Quality Standards (GWQS) is provided in Section 4.2 of this RIR/RAW.

3.3.3 Ground Water Elevation Measurements

BELL collected depth to ground water measurements and computed the elevation of the ground water table at all accessible monitoring well locations. Depth to ground water measurements were collected on June 1, 1993, June 7, 1993, August 2, 1993, May 10, 1994 and December 12, 1994 (Table 3-3). This data was utilized to construct potentiometric contour plots as presented in Figures 3-3 through 3-7, as required in the February 3, 1994 NJDEP letter.

3.3.4 Product Recovery and Fingerprint Analysis

Free product samples were collected for hydrocarbon fingerprint characterization on August 2, 1993 and May 24, 1994. These samples were collected to provide information relative to the source, age, and constituents of the LNAPL identified in onsite and offsite monitoring wells (MW-1, MW-7, MW-8, and MW-9). All four monitoring wells containing LNAPL were sampled on August 2, 1993, while only MW-8 was sampled on May 24, 1994. Samples collected on August 2, 1993 were analyzed for fingerprint characterization by capillary gas chromatography by Veritech, and the sample collected on May 24, 1994 was analyzed by Friedman & Bruya, Inc., located in Seattle, Washington. Results of the fingerprint characterizations are summarized in Section 4.2.3 of this RIR/RAW.

Beginning on March 22, 1994, a LNAPL recovery program was initiated at the AMMCo site. Free-phase product thickness was measured and/or recovered on 14 separate occasions

in 1994 and 1995. The static fluid level within each well was inspected for evidence of free-phase product visually via a clear Teflon bailer and using an interface probe. LNAPL was recovered by hand bailing with a 3.5-inch diameter polyvinylchloride (PVC) bailer, with LNAPL emptied into a properly labeled 55-gallon steel drum. Information pertaining to product thickness noted within onsite wells is summarized in Section 4.2.3

3.3.5 Regional Ground Water Quality Investigation

In order to determine the ground water quality for the region, BELL conducted telephone interviews with various local and State agencies, and reviewed NJDEP files associated with offsite ground water investigations conducted in the area of the site. Results of the regional ground water quality investigation are summarized in Section 4.2.4.

3.4 OTHER OUTSTANDING AOCs

3.4.1 Area 17 - Drum Storage Area

The NJDEP directive letters indicate that photodocumentation of the integrity of the concrete pad in this area will be verified by the NJDEP Case Manager during the final inspection of the facility. AMMCo will clear this area of debris, if necessary, for inspection by the NJDEP, however it should be noted that this area will be covered by the asphalt cap proposed for the site.

3.4.2 Area 18 - Asbestos Flue Stacks

The NJDEP directed AMMCo at the November 21, 1994 meeting to provide certification that asbestos flue stacks were never present at the site. **This certification is included in Appendix D and no further action is proposed relative to this AOC.**

3.5 RELIABILITY OF ANALYTICAL DATA

The following subsections describe procedures that were implemented to evaluate the reliability of analytical data collected during the RI. Included in this section is a summary of the field instrument calibration procedures, quality assurance/quality control (QA/QC) sampling, sample management practices, data qualification, analytical methods, and the reduction/validation of data implemented during the RI.

3.5.1 Field Instrument Calibration

The PID and the combined/conductivity/temperature/dissolved oxygen meter were calibrated daily by the BELL field personnel before use. Calibration procedures and results were recorded in the field log book.

3.5.2 Soil and Ground Water QA/QC Sampling

Quality assurance/quality control (QA/QC) samples were collected as part of the RI. These QA/QC samples were collected in accordance with frequencies specified in the NJDEP *Field Sampling Procedures Manual* (May 1992). QA/QC samples included duplicate samples, field blanks, trip blanks, and matrix spike/matrix spike duplicate samples. QA/QC samples were analyzed for parameters identical to those of environmental samples collected during the field effort, if applicable, with the exception of trip blanks, which were only analyzed for VO+10. Table 3-4 provides a summary of analytical methods and QA/QC sampling implemented during the AMMCo RI.

Duplicate samples were collected to QA field sampling and handling procedures, as well as laboratory analytical procedures, and were collected at a minimum frequency of one duplicate sample for every 20 environmental samples collected.

Field blank samples were collected to evaluate field equipment decontamination procedures, and were prepared by pouring laboratory-supplied deionized water over sampling equipment into laboratory prepared sample containers. Field blank samples accompanied the environmental samples to the laboratory and were collected at a frequency of one field blank sample per day for aqueous samples, and at a frequency of one field blank for every ten soil samples. Field blanks were analyzed for parameters identical to those of ground water samples and field blanks associated with soil samples were analyzed for VO+10.

Trip blank samples were collected during ground water sampling events to evaluate potential VO contamination sources at the site, during transit or at the analytical laboratory not associated with ground water at the AMMCo site. Trip blanks were prepared by the analytical laboratory and consisted of deionized water in 40 milliliter laboratory supplied glassware and accompanied laboratory-supplied glassware and environmental samples collected during shipment to and from the laboratory. Trip blanks were collected only during field activities involving aqueous sample collection, and were collected at a frequency of one trip blank per shipment of environmental samples to the laboratory. All trip blanks were analyzed for VO+10.

Matrix spike/matrix spike duplicate (MS/MSD) samples were analyzed to identify potential interference during analysis due to characteristics of sample matrixes. MS/MSD samples were analyzed at a frequency of one sample per twenty environmental samples collected, and were submitted to the laboratory with environmental samples.

3.5.3 Sample Custody and Shipment

All environmental samples submitted to the analytical laboratory were accompanied by appropriate chain of custody (COC) documentation. COC documentation identified the date, location, and matrix of each sample and ensured that shipment of environmental samples from the AMMCo site to the analytical laboratory was tracked in accordance with NJDEP requirements. Laboratory QA/QC documentation tracked the handling and analysis of environmental samples following receipt by the laboratory.

3.5.4 Analytical Methods

Analytical parameters and methodologies utilized during the AMMCo RI are summarized in Table 3-4. As stated previously, all samples collected at the AMMCo site, with the exception of the LNAPL sample collected on May 24, 1994, were analyzed by Veritech. The LNAPL sample collected on May 24, 1994 from MW-8 was analyzed by Friedman and Bruya, located in Seattle, Washington.

3.5.5 Reduction of Analytical Data

Analytical data packages were received from Veritech laboratories in a hard copy format, copies of which are presented as additional volumes (Appendix E) to this RIR/RAW. The analytical data were reduced into BELL analytical results summary tables. The reduction of data and all data tables were checked against complete analytical packages for accuracy. Non-conformance issues noted by the qualified BELL personnel reducing the data were noted appropriately on the BELL analytical data tables.

4.0 FINDINGS

The following section presents the results of the RI conducted at the AMMCo site. For clarity purposes, results of the soil investigation, with the exception of the results of the soil boring investigation performed on April 5 and 10, 1995 (Section 4.1.9), are presented with reference to former AOCs. However, it should be noted that per the November 1994 meeting between the NJDEP, AMMCo and BELL, the former AOCs that are located east of Passaic Avenue (Areas 1 through 18, 20, and 23) are currently considered as one AOC (AOC I) relative to soil issues and the former AOCs west of Passaic Avenue (Areas 19, 21, and 22) are considered as a separate AOC (AOC II) relative to soil issues. The results of the soil boring investigation performed on April 5 and 10, 1995 will be evaluated (Section 5) relative to the two new AOCs (AOC I and AOC II). Results of the ground water investigation are presented for the site as a whole.

The analytical results for soil and ground water samples are summarized in Tables 4-1 through 4-10. Analytical results for soil samples were compared to the NJDEP *Residential Direct Contact* (RDC) SCC, the NJDEP *Non-Residential Direct Contact* (NRDC) SCC, and the NJDEP *Impact to Ground Water* (IGW) SCC. Analytical results for ground water samples were compared to the NJDEP *Class II-A* GWQS. Unless otherwise stated in the following sections, compounds analyzed for in soil and ground water samples were below the applicable SCC or GWQS. The complete analytical data packages for these samples are presented in Appendix E (Volume II).

4.1 SOIL INVESTIGATION RESULTS

The RI soil investigation consisted of the re-excavation of soils in six locations and collection of associated PE soil samples, the excavation of fourteen test pits and collection of associated PE soil samples, and the installation of 17 soil borings and collection of 34 soil samples. Soil sampling intervals ranged from 0 to 6.0 feet BGS. Analytical parameters, sampling intervals, and methods of sampling are presented in Table 3-1. Soil boring logs, which include field observations and field screening results, are included as Appendix B. Compounds detected in concentrations exceeding NJDEP SCC within PE soil samples collected at the site are presented in Figure 4-1 and compounds detected in concentrations exceeding NJDEP SCC within soil boring soil samples are presented in Figure 4-2.

4.1.1 Area 9 - Sump Metals Storage Area

Four PE soil samples (PE-141 through PE-144) were collected on June 18, 1993, following the excavation of soils in the area associated with former samples PE-101 through PE-104 (Figure 3-2). Analytical results for the PE soil samples, which were analyzed for arsenic,

were compared to the NJDEP SCC (Table 4-1). Comparison with the NJDEP SCC indicated that none of the four soil samples contained concentrations of arsenic in excess of the most stringent of the NJDEP SCC.

Five PE soil samples (PE-136 through PE-140) were collected on June 18, 1993, for BN+15 analysis following excavation of soils in the area surrounding MW-6 (Figure 3-2). Analytical results for the PE soil samples were compared to the NJDEP SCC (Table 4-2). Comparison with the NJDEP SCC indicated that three (PE-136, PE-137, and PE-140) of the five soil samples contained PAHs in excess of both the NJDEP RDC and NRDC SCC. Maximum concentrations of PAHs were within the same order of magnitude as the associated NJDEP RDC and NRDC SCC, with the exception of concentrations of benzo(b)fluoranthene in sample PE-136 and benzo(a)pyrene in sample PE-137, which were 13.3 and 11.6 times greater than the NJDEP RDC SCC, respectively. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-136	2.0	benzo(a)anthracene, 6.5	0.9	4
	2.0	benzo(b)fluoranthene, 12	0.9	4
	2.0	benzo(a)pyrene, 6.7	0.66	0.66
	2.0	indeno(1,2,3-c,d)pyrene, 4.4	0.9	4
PE-137	2.0	benzo(a)anthracene, 2	0.9	4
	2.0	benzo(b)fluoranthene, 2.2	0.9	4
	2.0	benzo(k)fluoranthene, 1.5	0.9	4
	2.0	benzo(a)pyrene, 1.6	0.66	0.66
	2.0	indeno(1,2,3-c,d)pyrene, 1.2	0.9	4
PE-140	2.0	benzo(a)anthracene, 8.8	0.9	4
	2.0	chrysene, 9.9	9	40
	2.0	benzo(b)fluoranthene, 8.5	0.9	4
	2.0	benzo(k)fluoranthene, 7.4	0.9	4
	2.0	benzo(a)pyrene, 7.7	0.66	0.66
	2.0	indeno(1,2,3-c,d)pyrene, 4.7	0.9	4
	2.0	dibenzo(a,h)anthracene, 1.3	0.66	0.66

Note: Shaded values indicate concentration in environmental sample exceeding standard.

4.1.2 Area 10 - Waste Storage Area

Four PE soil samples (PE-165 through PE-168) were collected on April 28, 1994, for BN+15 analysis following the excavation of soils in the area of former PE samples PE-46 through PE-49 (Figure 3-2). Analytical results for the PE soil samples were compared to the NJDEP SCC (Table 4-2). Comparison with the NJDEP SCC indicated that two of the four soil samples (PE-167 and PE-168) contained PAHs in excess of the NJDEP RDC SCC, however, only one of the soil samples (PE-167) contained PAHs in excess of the

NJDEP NRDC SCC. Maximum concentrations of PAHs were within the same order of magnitude as the associated NJDEP RDC and NRDC SCC, with the exception of concentrations of benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene in sample PE-167, which were 13.3, 11.1, 16.6, and 18.2 times greater than the NJDEP RDC SCC, respectively. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-167	1.5 - 2.0	benzo(a)anthracene, 12	0.9	4
		chrysene, 12	9	40
		benzo(b)fluoranthene, 10	0.9	4
		benzo(k)fluoranthene, 15	0.9	4
		benzo(a)pyrene, 12	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 4.1	0.9	4
		dibenzo(a,h)anthracene, 1.9	0.66	0.66
PE-168	1.5 - 2.0	benzo(b)fluoranthene, 1	0.9	4

Note: Shaded values indicate concentration in environmental sample exceeding standard.

Four PE soil samples (PE-161 through PE-164) were collected on April 28, 1994, for BN+15 analysis in the area surrounding MW-5 (Figure 3-2). Analytical results for the PE soil samples were compared to the NJDEP SCC (Table 4-2). Comparison with the NJDEP SCC indicated that two of the four soil samples (PE-161 and PE-162) contained PAHs in excess of both NJDEP RDC and NRDC SCC. Maximum concentrations of PAHs were within the same order of magnitude as the associated NJDEP RDC and NRDC SCC, with the exception of concentrations of benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene in sample PE-162, which were 11.1, 12.2, and 13.1 times greater than the NJDEP RDC SCC, respectively. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-161	1.5	benzo(a)anthracene, 6.2	0.9	4
		benzo(b)fluoranthene, 7.2	0.9	4
		benzo(k)fluoranthene, 5.5	0.9	4
		benzo(a)pyrene, 5.8	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 2	0.9	4
PE-162	1.5	benzo(a)anthracene, 10	0.9	4
		chrysene, 11	9	40
		benzo(b)fluoranthene, 11	0.9	4
		benzo(k)fluoranthene, 8	0.9	4
		benzo(a)pyrene, 8.7	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 3.1	0.9	4
		dibenzo(a,h)anthracene, 1.3	0.66	0.66

Note: Shaded values indicate concentration in environmental sample exceeding standard.

4.1.3 Area 11 - Endre Doczy Building (Building # 9)

Two PE soil samples (PE-169 and PE-170) were collected on April 28, 1994 following installation of two test pits in the area of former samples PE-106 through PE-109 (Figure 3-2). Analytical results for the PE soil samples, which were analyzed for BN+15, were compared to the NJDEP SCC (Table 4-2). Comparison with the NJDEP SCC indicated that both of the soil samples contained PAHs in excess of both NJDEP RDC and NRDC SCC. Maximum concentrations of PAHs were within the same order of magnitude as the associated NJDEP RDC and NRDC SCC, with the exception of concentrations of benzo(a)anthracene, benzo(b)fluoranthene, and benzo(a)pyrene in sample PE-170, which were 15.5, 15.5, and 18.2 times greater than the NJDEP RDC SCC, respectively. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-169	0.5	benzo(b)fluoranthene, 1.7	0.9	4
		benzo(a)pyrene, 0.84	0.66	0.66
PE-170	2.0	benzo(a)anthracene, 14	0.9	4
		chrysene, 14	9	40
		benzo(b)fluoranthene, 14	0.9	4
		benzo(k)fluoranthene, 8.3	0.9	4
		benzo(a)pyrene, 12	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 5.4	0.9	4

Note: Shaded values indicate concentration in environmental sample exceeding standard.

Five PE soil samples (PE-154 through PE-158) were collected on April 26, 1994, following installation of five test pits in the area of former samples PE-110 through PE-113 (Figure 3-2). One PE soil sample (PE-154) was analyzed for copper, while four PE soil samples (PE-155 through PE-158) were analyzed for BN+15. Analytical results for the PE soil samples were compared to the NJDEP SCC (Tables 4-1 and 4-2). Comparison with the NJDEP SCC indicated that PE-154 contained copper in excess of the NJDEP NRDC SCC, and that PE-155 through PE-158 contained PAHs in excess of both NJDEP RDC and NRDC SCC. Maximum concentrations of PAHs and copper were within the same order of magnitude as the associated NJDEP RDC and NRDC SCC. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-154	3.0	copper, 3,200	600	600
PE-155	2.0	benzo(a)anthracene, 1.6	0.9	4
		benzo(b)fluoranthene, 3.5	0.9	4
		benzo(a)pyrene, 1.9	0.66	0.66
PE-156	2.0	benzo(a)anthracene, 3	0.9	4
		benzo(b)fluoranthene, 4.7	0.9	4
		benzo(a)pyrene, 2.9	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 1.6	0.9	4
PE-157	2.0	benzo(a)anthracene, 2.2	0.9	4
		benzo(b)fluoranthene, 3.5	0.9	4
		benzo(a)pyrene, 1.9	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 1.5	0.9	4
PE-158	2.0	benzo(a)anthracene, 2.3	0.9	4
		benzo(b)fluoranthene, 3.6	0.9	4
		benzo(a)pyrene, 2.2	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 1.1	0.9	4

Note: Shaded values indicate concentration in environmental sample exceeding standard.

4.1.4 Area 12 - Loading Dock Sump Discharge Area

Five PE soil samples (PE-130 through PE-134) were collected on June 17, 1993 following re-excavation of the area of former samples PE-61 through PE-65 (Figure 3-2). Analytical results for the PE soil samples, which were analyzed for BN+15, were compared to the NJDEP SCC (Table 4-2). Comparison with the NJDEP SCC indicated that all five of the soil samples contained PAHs in excess of NJDEP RDC and NRDC SCC. Maximum concentrations of PAHs were within the same order of magnitude as the associated NJDEP RDC and NRDC SCC, with the exception of concentrations of benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-c,d)pyrene and benzo(a)pyrene in samples PE-131 and PE-134. Benzo(a)pyrene was detected at concentrations which exhibited the greatest order of magnitude difference when compared to the NJDEP SCC of

0.66 ug/kg. This compound was detected at concentrations 22.7 and 19.6 times the NJDEP RDC SCC in samples PE-131 and PE-134, respectively. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-130	2.0	benzo(b)fluoranthene, 1.1	0.9	0.9
		benzo(a)pyrene, 0.83	0.66	0.66
PE-131	2.0	benzo(a)anthracene, 11	0.9	4
		Chrysene, 13	9	40
		benzo(b)fluoranthene, 16	0.9	4
		benzo(k)fluoranthene, 15	0.9	4
		benzo(a)pyrene, 15	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 11	0.9	4
		dibenzo(a,h)anthracene, 2.8	0.66	0.66
PE-132	2.0	benzo(a)anthracene, 2.2	0.9	4
		benzo(b)fluoranthene, 6.5	0.9	4
		benzo(a)pyrene, 2.8	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 3.2	0.9	4
PE-133	2.0	benzo(a)anthracene, 3.6	0.9	4
		benzo(b)fluoranthene, 4.7	0.9	4
		benzo(k)fluoranthene, 3.9	0.9	4
		benzo(a)pyrene, 4.3	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 3	0.9	4
		dibenzo(a,h)anthracene, 1	0.66	0.66
PE-134	2.0	benzo(a)anthracene, 9.6	0.9	4
		chrysene, 12	9	40
		benzo(b)fluoranthene, 15	0.9	4
		benzo(k)fluoranthene, 11	0.9	4
		benzo(a)pyrene, 13	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 9.5	0.9	4
		dibenzo(a,h)anthracene, 2.4	0.66	0.66

Note: Shaded values indicate concentration in environmental sample exceeding standard.

4.1.5 Area 19 - Drum Storage Area Adjacent to Building #23

Four PE soil samples (PE-171 through PE-174) were collected on April 28, 1994 for BN+15 and arsenic analyses, following installation of four test pits in the area of former samples PE-125 through PE-129 (Figure 3-2). Analytical results for the PE soil samples were compared to the NJDEP SCC (Tables 4-3 and 4-4). Comparison with the NJDEP SCC indicated that PE-171 contained arsenic in excess of the NJDEP RDC and NRDC SCC, and that PE-172 and PE-174 contained PAHs in excess of both NJDEP RDC and NRDC SCC. Maximum concentrations of PAHs and arsenic were within the same order of

magnitude as the associated NJDEP RDC and NRDC SCC. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1 and are summarized below.

PE Soil Sample	Sample Depth (Feet BGS)	Compounds Detected Above NJDEP SCC (mg/kg)	Residential Direct Contact SCC (mg/kg)	Non-Residential Direct Contact SCC (mg/kg)
PE-171	1.5 - 2.0	arsenic, 28	20	20
PE-172	1.5 - 2.0	benzo(a)anthracene, 4.5	0.9	4
		benzo(b)fluoranthene, 4.7	0.9	4
		benzo(k)fluoranthene, 3.8	0.9	4
		benzo(a)pyrene, 4.3	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 1.8	0.9	4
		dibenzo(a,h)anthracene, 0.74	0.66	0.66
PE-174	1.5 - 2.0	benzo(a)anthracene, 2.9	0.9	4
		benzo(b)fluoranthene, 5.1	0.9	4
		benzo(a)pyrene, 2.5	0.66	0.66
		indeno(1,2,3-c,d)pyrene, 1.1	0.9	4

Note: Shaded values indicate concentration in environmental sample exceeding standard.

4.1.6 Area 20 - Tunnel Area

Three PE soil samples (PE-150, PE-152, and PE-153) were collected on April 26, 1994 following installation of three test pits in the area of former samples PE-120 and PE-121 (Figure 3-2). Analytical results for the PE soil samples, which were analyzed for copper, were compared to the NJDEP SCC (Table 4-1). Comparison with the NJDEP SCC indicated that PE-150 and PE-153 contained copper at concentrations of 1,700 mg/kg and 7,600 mg/kg, respectively. These concentrations are in excess of the NJDEP NRDC SCC of 600 mg/kg. PE soil sample results exceeding NJDEP SCC are presented in Figure 4-1.

4.1.7 Area 23 - Oil Filter Area Adjacent to Endre Doczy Building

Five PE soil samples (PE-145 through PE-149) were collected on September 15, 1993 for various analyses (specific analyses are detailed in Table 3-1) following excavation of soils within the area associated with former samples PE-95 through PE-99 (Figure 3-2). Analytical results for the PE soil samples were compared to the NJDEP SCC (Tables 4-1 and 4-2). Comparison with the NJDEP SCC indicated that none of the five soil samples contained arsenic, lead, zinc, or PAHs in excess of the most stringent of the NJDEP SCC. In addition, none of the samples analyzed for total petroleum hydrocarbons (PE-147 and PE-149) exceeded the NJDEP SCC for total organic compounds of 10,000 mg/kg.

4.1.8 Historical Fill Investigation

To investigate the historical placement of fill materials at the AMMCo site and to assess the potential for fill material to be present at the AMMCo site containing elevated concentrations of PAHs and metals, BELL conducted an investigation which included the review of NJDEP files for sites in the area surrounding the AMMCo site, a review of soil boring logs, and telephone interviews with the Town of Kearny Engineering and Health Departments, the Essex County Historical Society, and the NJDEP. As the fill material located at the site was deposited prior to 1900, historical aerial photographs or topographic maps showing areas of the site prior to and subsequent to filling were not available during the RI.

4.1.8.1 Regulatory Agency File Review Results

On March 31, 1995 and April 3, 1995, BELL conducted a review of the NJDEP files for investigations conducted at sites in the area surrounding the AMMCo site to investigate the regional occurrence of BN compounds and selected metals in soil. This file review was conducted to determine if compounds of concern detected at the AMMCo site (PAHs and selected metals) are representative of fill materials historically placed at the site and in the area of the site. The NJDEP files for five sites located in Kearny were reviewed. The properties involved, their location relative to the AMMCo site, and brief descriptions of the findings of each review are summarized below.

1. **Franklin Plastics** - 113 Passaic Avenue. Located adjacent to the Passaic River, immediately north of AMMCo's office facility. Franklin Plastics conducted an investigation of the urban fill material located throughout the site. Based on a review of the monitoring well logs for this site, the fill material (which gradually increased in thickness towards the Passaic River) contained large fragments of glass, brick, cinders, boiler cleanout, and various foreign objects similar to the composition of the fill material identified at the AMMCo site (see AMMCo's boring logs - Appendix B). Franklin Plastics attributed non-aqueous phase liquids (NAPL) found onsite to the presence of fill material based on the following: fingerprint characterization indicated that the NAPL was not indicative of the #6 fuel oil used onsite; the NAPL was extremely weathered and immobile; and the NAPL was not found in the fill material located above the water table.

   The Franklin Plastics investigation indicated that the NAPL was introduced in the early 1900's during landfilling operations conducted in Kearny for development purposes. Franklin Plastics concluded that if the NAPL was introduced after the landfilling operations (by Franklin Plastics), it would also be present in the fill located above the water table.

In addition, the area in question has been encapsulated by an asphalt parking lot since 1947, thus limiting runoff water from infiltrating through the fill material to the aquifer. Elevated concentrations of TPHC, BNs, and metals that were identified in onsite soil were attributed by Franklin Plastics to the presence of the industrial fill at the site. The NJDEP approved Franklin Plastic's proposal to maintain a vegetative cover to stabilize soil and to restrict access with fencing as a remediation measure.

2. **Alpha Metals** - 590 Belleville Turnpike. This site is located approximately 2.25 miles northeast of the AMMCo site. Alpha Metals conducted an investigation of the urban fill material located throughout the site. Based on a review of monitoring well and soil boring logs, the site is underlain by thirteen feet of industrial fill material composed of concrete fragments, rubber, metal, tar, brick, coal, gravel, and asphalt. As a result of the investigation conducted at the site, Alpha Metals concluded that the source of the elevated concentrations of metals, TPH, and BNs found in surficial soils was the fill material located onsite. This conclusion was based on the random distribution and concentrations of the aforementioned contaminants across the site. Alpha Metals submitted all available material safety data sheets (MSDS) for compounds stored at the site to the NJDEP in order to establish that soil contamination was not attributable to onsite hazardous materials storage and was the result of the historical deposition of fill material. The NJDEP has required that Alpha Metals file a DER relative to elevated concentrations of metals, TPH, and BNs found in surficial soils remaining onsite.

3. **AT&T (a.k.a. Western Electric)** - 100 Central Avenue. This site is located at the peninsula where the Passaic and Hackensack Rivers merge, approximately 3.25 miles southeast of the AMMCo site. Metals, VO compounds, PCBs, TPHC, and cyanide were detected in onsite soils. AT&T performed a limited investigation of the historical fill material underlying the site, and concluded that much of the metal contamination detected in onsite soils was the result of historical fill deposition. No information relative to current NJDEP requirements relative to soil issues was available during the file review.

4. **T.P. Industrial (a.k.a. Purex Industries)** - 49 Central Avenue. This site is located approximately 3.27 miles southeast of the AMMCo site. T.P. Industrial performed a limited investigation of the industrial fill material and determined that the fill material located on and offsite was highly contaminated. T.P. Industrial was granted a NFA by the NJDEP relative to ground water at the site based on the following data:

    - Ground water is not used as a resource in the area;
    - The local man-made fill aquifer is highly contaminated;
    - nearby surface water receptors are not threatened; and

- Local land uses have historically been and area expected to continue to be industrial.

No information relative to NJDEP requirements relative to soil issues was available during the file review.

5. **Honeycomb Plastics** - 244 Dukes Street. This site is located approximately one mile southeast of the AMMCo site. Honeycomb Plastics determined that the elevated levels of BNs and metals identified in the onsite soil could be attributed to either the former operations of Interstate Metals (an adjacent property) or fill material located onsite containing tar and fly ash. Honeycomb Plastics was granted a NFA by the NJDEP relative to soil and ground water at the site based on the anticipated non-residential future uses of the property.

Additionally, BELL conducted a literature search and telephone interviews to investigate the historical placement of fill materials at the AMMCo site and at surrounding properties. Agencies contacted included the Town of Kearny Engineering and Health Departments, the Essex County Historical Society, and the NJDEP. Information obtained from the Town of Kearny Engineering Department indicated that the portion of Kearny in which the AMMCo site is located has historically been filled, particularly in the area of the Passaic River. This is consistent with information obtained from the *Soil Survey for Hudson County, New Jersey*, (USGS) which indicates that the majority of the soils located in the region surrounding the AMMCo site are described as Udorthents soils. This land type has been filled and smoothed, or otherwise extensively disturbed, to a depth of 3 feet or more. The original soil can no longer be identified. Fill material generally consists of a mixture of stones, boulders, rubble, and soil material (Section 2.2). Installation of soil borings, monitoring wells and test pits onsite indicate the presence of fill material to depths of up to four feet BGS.

4.1.8.2 Results of Literature Review Relative to Regional Distribution of Contaminants of Concern

BELL performed a literature review to investigate the natural occurrence and regional distribution of compounds of concern identified at the AMMCo site (PAHs and selected metals). The results of this review are summarized below.

Various PAHs were detected in soil samples collected at the AMMCo site at concentrations exceeding the NJDEP RDC and NRDC SCC, but below the NJDEP IGW SCC. These compounds are produced during the combustion of organic materials and have been detected regionally in the air, ground water, soil, fly ash, flue gases, and several food products. Based on a review of the document *Benzo(a)Pyrene in New Jersey - Results*

from a Twenty-Seven Site Study (Office of Science and Research - NJDEP), the highest levels of benzo(a)pyrene (one of the PAH compounds identified at the AMMCo site) occur in the northeastern industrial region of New Jersey. Benzo(a)pyrene concentrations in the air are highest during colder months due to the increase in fossil fuel consumption and reduced photochemical degradation. Approximately 98% of the benzo(a)pyrene emissions in the air during the summer months (non-heating season) are attributed to spark-ignition of motor vehicles. Ambient air concentrations of benzo (a) pyrene have gradually declined as a result of the reduction of coal-combustion, open burning and the control of coke-oven emissions. Additionally, a review of the *Organic Contaminants in Welsh Soils; Polynuclear Aromatic Hydrocarbons* (Environmental Science Technology, 23, 5: 540-550, 1989) indicates that PAHs are found at ambient concentrations as high as 54,600 ug/kg, ambient levels of PAHs have increased over the last two centuries as a result of the use of fossil fuels, and that PAHs are typically found to be associated with imported fill materials.

Based on a review of the documents *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States* (USGS, 1984) and *Soil Chemistry of Hazardous Materials* (Hazardous Materials Control Research Institute), the ambient ranges of concentrations in the eastern United States of the following metals are:

Lead - 10-300 mg/kg (*Element Concentration in Soils and Other Surficial Materials of the Conterminous United States)*, with an estimated arithmetic mean of 17 mg/kg (*Element Concentration in Soils and Other Surficial Materials of the Conterminous United States)* and the extreme limits of naturally occurring concentrations of 0.1. to 3,000 mg/kg (*Soil Chemistry of Hazardous Materials)*. It should be noted that lead is also a combustion product of fossil fuels and is found at elevated levels in soils within areas historically industrialized and/or near to roadways;

Chromium - 5.0-3,000 mg/kg (*Soil Chemistry of Hazardous Materials)*, with an estimated arithmetic mean of 52 mg/kg (*Element Concentration in Soils and Other Surficial Materials of the Conterminous United States)* and the extreme limits of naturally occurring concentrations of 0.5. to 10,000 mg/kg (*Element Concentration in Soils and Other Surficial Materials of the Conterminous United States)*;

Zinc- <5-2,900 mg/kg (*Element Concentration in Soils and Other Surficial Materials of the Conterminous United States)*, with an estimated arithmetic mean of 290 mg/kg (*Element Concentration in Soils and Other Surficial Materials of the Conterminous United States)* and the extreme limits of naturally occurring concentrations of 3.0. to 10,000 mg/kg (*Soil Chemistry of Hazardous Materials)*; and

Aluminum - 10,000-300,000 mg/kg (*Soil Chemistry of Hazardous Materials).*

4.1.9 Soil Boring Sampling Results

Seventeen soil borings (SB-1 through SB-17) were installed to a depth of 2.5 feet BGS at the perimeter of AOC I (Figure 4-2). These soil borings were installed to delineate compounds of concern (PAHs and metals) historically detected within AOC-1. Two soil samples were collected from each boring from depth intervals of 0-0.5 feet BGS and 2.0-2.5 feet BGS. Soil samples were analyzed for BN+15, arsenic, copper, lead, and zinc. In addition, soil samples collected from the depth interval of 2.0-2.5 feet BGS within borings SB-2, SB-3, and SB-17 (the background sampling location) were also analyzed for aluminum. Analytical results for the soil samples were compared to the NJDEP SCC (Table 4-5). Comparison with the NJDEP SCC indicated that several of the soil samples contained PAHs in excess of the NJDEP RDC and NJDEP SCC. Only three metals, arsenic, lead, and zinc, were detected at concentrations exceeding NRDC SCC. Twelve samples (SB-2 [2.0-2.5 feet], SB-3 [2.0-2.5 feet], SB-6 [2.0-2.5 feet], SB-7 [2.0-2.5 feet], SB-8 [0-0.5 and 2.0-2.5 feet], SB-9 [0-0.5 and 2.0-2.5 feet], SB-10 [2.0-2.5 feet], SB-12 [0-0.5 and 2.0-2.5 feet], and SB-14 [2.0-2.5 feet]) did not contain analytes which exceeded the NJDEP SCC. Soil sample results exceeding NJDEP SCC are presented in Figure 4-2 and are summarized below.

- Benzo(a)anthracene exceeded the NJDEP RDC SCC of 900 micrograms per kilogram (ug/kg) in 17 samples at concentrations ranging from 1,000 ug/kg to 130,000 ug/kg. Seven of the 17 samples also exceeded the NRDC SCC of 4,000 ug/kg. No samples exceeded the NJDEP IGW SCC of 500,000 ug/kg.
- Chrysene exceeded the RDC SCC of 9,000 ug/kg in five samples at concentrations ranging from 9,500 ug/kg to 120,000 ug/kg. One of the five samples (0-0.5 feet BGS in boring SB-5) also exceeded the NRDC SCC of 40,000 ug/kg. No samples exceeded the IGW SCC of 500,000 ug/kg.
- Benzo(b)fluoranthene exceeded the RDC SCC of 900 ug/kg in twenty-three samples at concentrations ranging from 940 ug/kg to 130,000 ug/kg. Eleven of the twenty-three samples also exceeded the NRDC SCC of 4,000 ug/kg while one of the samples (0-0.5 feet BGS in boring SB-5) exceeded the IGW SCC of 50,000 ug/kg.
- Benzo(k)fluoranthene exceeded the RDC SCC of 900 ug/kg in fourteen samples at concentrations ranging from 1,100 ug/kg to 43,000 ug/kg. Five of the fourteen samples also exceeded the NRDC SCC of 4,000 ug/kg. No samples exceeded the IGW SCC of 500,000 ug/kg.
- Benzo(a)pyrene exceeded both the RDC and NRDC SCC of 660 ug/kg in twenty-one samples at concentrations ranging from 760 ug/kg to 110,000 ug/kg. One sample (0-0.5 feet BGS in boring SB-5) also exceeded the IGW SCC of 100,000 ug/kg.
- Ideno(1,2,3-cd)pyrene exceeded the RDC SCC of 900 ug/kg in fourteen samples at concentrations ranging from 950 ug/kg to 59,000 ug/kg. Five of the fourteen samples

also exceeded the NRDC SCC of 4,000 ug/kg. No samples exceeded the IGW SCC of 500,000 ug/kg.

- Dibenzo(a,h)anthracene exceeded both the RDC and NRDC SCC of 660 ug/kg in five samples at concentrations ranging from 1,200 ug/kg to 16,000 ug/kg. No samples exceeded the IGW SCC of 100,000 ug/kg.
- Fluoranthene exceeded the IGW SCC of 100,000 ug/kg in one sample (0-0.5 feet BGS in boring SB-5) at a concentration of 300,000 ug/kg. No samples exceeded either the RDC or NRDC SCC of 2,300,000 ug/kg and 10,000,000 ug/kg, respectively.
- Pyrene exceeded the IGW SCC of 100,000 ug/kg in one sample (0-0.5 feet BGS in boring SB-5) at a concentration of 240,000 ug/kg. No samples exceeded either the RDC or NRDC SCC of 1,700,000 ug/kg and 10,000,000 ug/kg, respectively.
- Lead exceeded the RDC SCC of 400 mg/kg in five samples at concentrations ranging from 510 mg/kg to 1,200 mg/kg. Four of the five samples also exceed the NRDC SCC of 600 mg/kg. There is no IGW SCC for metals.
- Zinc exceeded both the RDC and NRDC SCC of 1,500 mg/kg in one sample (2.0-2.5 feet BGS in boring SB-16) at a concentration of 3,600 mg/kg.
- Arsenic exceeded both the RDC and NRDC SCC of 20 mg/kg in one sample (0-0.5 feet BGS in boring SB-5) at a concentration of 98 mg/kg.

Only one sample (0-0.5 feet BGS in SB-5) contained concentrations of contaminants in excess of IGW SCC. As the depth to ground water in the vicinity of SB-5 is approximately 14.5 feet BGS, the potential for these contaminants to impact ground water is low. In general, the concentrations of PAHs and metals decreased with depth from the first interval to the second interval.

Based on the following information, it is likely that PAHs and metals detected in soil at the AMMCo site is attributable to historical fill placement at the site and that the concentrations of these compounds may have been increased by the airborne deposition of these contaminants as a result of the historical industrial use of the area surrounding the AMMCo site.

1. Information (i.e., boring logs, information obtained via interviews and a literature search) obtained during the RI indicated that the portion of Kearny in which the AMMCo site is located has historically been filled, particularly in the area of the Passaic River. Installation of soil borings, monitoring wells and test pits onsite indicate the presence of fill material at the site to depths ranging from two to four feet BGS. Additionally, the NJDEP file review for sites in the surrounding area indicated that historical fill containing PAHs and metals were deposited at these sites. This is consistent with information obtained from the *Soil Survey for Hudson County, New Jersey*, (USGS) which indicates that the majority of the soils located in the region surrounding the

AMMCo site have been filled and smoothed, or otherwise extensively disturbed by excavation and filling activities, to a depth of 3 feet or more.

2. Soil samples collected from fill materials at Franklin Plastics from 0 to 2.5 feet BGS contained concentrations of BN compounds and metals similar to those observed in samples collected from the same interval during the soil boring investigation at the AMMCo site. Arsenic, copper, lead and zinc were detected at average concentrations of 2.6, 154, 254 and 253 mg/kg, respectively, at Franklin Plastics; while these same metals were detected at average concentrations of 9.2, 68.4, 261 and 421 mg/kg, respectively, at the AMMCo site. Furthermore, the average concentration of BN compounds detected at Franklin Plastics is an order of magnitude higher than the average concentration of BN compounds detected at the AMMCo site during the soil boring investigation. Since the soils at Franklin Plastics may be representative of fill materials similar to those observed at the AMMCo site, this data strongly suggests that the contaminants at the AMMCo site are associated with regional fill deposition and area not associated with site activities. It should be noted that the NJDEP has granted NFA determinations for other sites in the area of the AMMCo site with fill materials containing concentrations of PAHs and metals exceeding NJDEP SCC (see Section 4.1.8.1).

3. Concentrations of PAHs and metals of the same order of magnitude as those observed in samples collected from areas of the site which were destroyed by the explosion/fire were observed at locations behind AMMCo Building # 22 (SB-3, SB-4 and SB-17, Figure 4-2) which is topographically higher than AMMCo operational areas. As the building would have shielded this area from the airborne distribution of contaminants during the fire and it is likely that PAHs and metals would not have migrated to these areas from operational areas via surface water leaching or other transport mechanisms, the presence of these contaminants in these samples further indicates that the detected PAHs and metals are associated with fill deposition at the site.

4. A soil boring (SB-17) was installed and two background samples (0-0.5 feet BGS and 2.0-2.5 feet BGS) were collected from a residential site located to the east of the AMMCo site (Figure 4-2). These samples were collected to determine background conditions in the area of the AMMCo site. One of the background soil samples (SB-17, 2.0-2.5 feet BGS) contained the highest concentration (13,000 mg/kg) of aluminum detected in all soil boring samples. As the potential for this soil sample to have been impacted by operations or the 1986 explosion/fire at the AMMCo site (the property is located behind AMMCo Building #22 at an elevation above the AMMCo site and the sample is a subsurface sample collected from 2.0 to 2.5 feet BGS) is extremely low, this data strongly suggests that fill material containing elevated concentrations of aluminum and other metals to be present at locations in the area of the AMMCo site.

5. Deposition of airborne contaminants (i.e., combustion products from automobiles and factories) may have contributed to concentrations of PAHs and selected metals in surface soils at the site. PAHs are produced during the combustion of organic materials and have been detected regionally in the air, ground water, soil, fly ash, flue gases, and several food products (see Section 4.1.8.2). Based on a review of the document *Benzo(a)Pyrene in New Jersey - Results from a Twenty-Seven Site Study* (Office of Science and Research - NJDEP), the highest levels of benzo(a)pyrene (one of the PAH compounds identified at the AMMCo site) occur in the northeastern industrial region of New Jersey. Additionally, ambient levels of PAHs have increased over the last two centuries as a result of the use of fossil fuels, and PAHs are typically found to be associated with imported fill materials. Concentrations of PAHs and metals detected in soil samples collected at the site decreased with depth, which is consistent with the deposition of airborne contaminants.

   Automobile traffic is heavy in the area and numerous industrial facilities are located in the vicinity of the site. It should be noted that lead is also a combustion product of fossil fuels and is found at elevated levels in soils within areas historically industrialized and/or near to roadways.

6. Based on a review of the documents *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States* (USGS, 1984) and *Soil Chemistry of Hazardous Materials* (Hazardous Materials Control Research Institute), concentrations of metals detected at the AMMCo site are within the ambient concentrations of these metals in the eastern United States (see Section 4.1.8.2).

4.2 GROUND WATER INVESTIGATION RESULTS

The RI ground water investigation consisted of the measurement of ground water elevations, the installation of an additional monitoring well, collection of ground water samples from monitoring wells, LNAPL recovery and fingerprint characterization, and a review of the NJDEP files associated with offsite ground water investigations. Analytical parameters and sampling methodologies are presented in Table 3-4. Monitoring well logs, which include a description of the soils and subsurface materials, field observations, well materials, and field screening results, are included as Appendix F of this RIR/RAW. Compounds detected in concentrations exceeding NJDEP *Class II-A GWQS* within ground water samples collected at the site are presented in Figure 4-3.

4.2.1 Ground Water Flow Conditions

In order to determine ground water flow conditions at the AMMCo site, ground water elevations were obtained from onsite and offsite monitoring wells on June 1 and 7, 1993; August 2, 1993; May 10, 1994; and December 12, 1994. Interpreted Ground Water Elevation Maps for the five monitoring events are presented as Figures 3-4 through 3-8. Based on an assessment of ground water elevation data and a review of soil boring and monitoring well logs for the site, shallow ground water occurs within an unconfined, unconsolidated aquifer system composed of gravely sand deposits.

The AMMCo site is located on the eastern flood plain terrace of the Passaic River, with local topography sloping gently westward towards the river. The expected direction of ground water flow is towards the southwest, based on topography and flow direction of the Passaic River. Based on a review of ground water elevation data for all ground water monitoring wells located east of Passaic Avenue, the ground water flow direction in this portion of the AMMCo site is towards the west/southwest. Ground water flow direction in the area of the site located west of Passaic Avenue cannot be calculated due the limited number of monitoring wells in this area (one), however, it is likely that the flow direction in this area is also towards the southwest, based on topography in this area and the flow direction of the Passaic River. BELL contacted the United States Coast Guard for information regarding the tidal patterns of the Passaic River, however, this area is not a designated Coast Guard monitoring location and no information was available.

4.2.2 Ground Water Sampling Results

Ground water samples were collected from monitoring wells on June 7, 1993, May 10, 1994, and November 7, 1994. Ground water sample analytical results were compared to the NJDEP *Class II-A* GWQS and are presented in Tables 4-6 through 4-10. The complete analytical data packages for these samples are presented in Appendix E (Volume II).

4.2.2.1 June 7, 1993 Results

On June 7, 1993, ground water samples were collected from six monitoring wells (MW-3 through MW-6, MW-10, and BEC-11S). All samples were analyzed for aluminum. The samples collected from MW-6 and MW-10 were also analyzed for VO+15 to investigate an offsite source for the BTEX previously detected in MW-6. In addition, the sample collected from BEC-11S was analyzed for BN+15. A summary of the analytical results for the June 7, 1993 ground water samples is presented in Tables 4-6 through 4-7. Review of the analytical data indicated that aluminum was present in all samples at concentrations exceeding the NJDEP *Class II-A* GWQS of 0.2 milligrams per liter (mg/l). Detected

concentrations of aluminum ranged from 1.0 (MW-4) to 47 mg/l (MW-5) (Figure 4-3). The observed concentrations of aluminum did not show a distribution pattern indicating a source area at the site. It should be noted that samples collected from one upgradient offsite well (MW-10) and one onsite well (MW-6) located at the upgradient property boundary of the AMMCo site contained concentrations of aluminum exceeding the NJDEP *Class II-A* GWQS, suggesting an offsite upgradient source. The detected concentrations of aluminum in onsite wells are similar to those detected in MW-6 and MW-10 (1 to 10 mg/l), with the exception of the concentration detected in MW-5 (47 mg/l), which is an order of magnitude higher than the other detected results.

Additionally, the background soil sample (SB-17, 2.0-2.5 feet BGS) contained the highest concentration (13,000 mg/kg) of aluminum detected in all soil boring samples. As the potential for this soil sample to have been impacted by operations or the 1986 explosion/fire at the AMMCo site (the property is located behind AMMCo Building #22 at an elevation above the AMMCo site and the sample is a subsurface sample collected from 2.0 to 2.5 feet BGS) is extremely low, this data strongly suggests that fill materials containing elevated concentrations of aluminum and other metals are present in the area of the AMMCo site. It is likely that these fill materials containing aluminum have contributed to concentrations of aluminum detected in ground water at the site. Additionally, the concentrations of aluminum detected in ground water at the AMMCo site are within the range of natural concentrations of aluminum in ground water (1-1,000 ug/l) found within the eastern United States (*Soil Chemistry of Hazardous Materials,* Dragun).

Benzene and xylenes were present in the samples collected from MW-6 and MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS. Additionally, toluene and ethylbenzene were detected in the sample collected from MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS. Methylene chloride was also detected in the samples collected from MW-6 and MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS, however, it is likely that the presence of this compound is representative of laboratory contamination as methylene chloride is a common laboratory remnant. No BN compounds were detected in the samples (BEC-12S and BEC-12S Duplicate) collected from BEC-12S.

A decrease in VO compound concentrations was noted to occur between MW-10 to MW-6, with the exception of the detected concentrations of benzene, which were higher in MW-6. MW-6 is located downgradient of MW-10, suggesting that a source area is present to the east and upgradient of the AMMCo site. The higher concentration of benzene noted in MW-6 as compared to MW-10 may be due to the results of the higher solubility of benzene as compared to other BTEX compounds, which may have resulted in benzene reaching areas downgradient of the source area in a shorter time period.

4.2.2.2 May 10, 1994 Results

On May 10, 1994, samples were collected from three ground water monitoring wells (MW-6, MW-10, and BEC-12S) and were analyzed for VO+10. The samples collected from MW-6 and MW-10 were analyzed for VO+10 to confirm that the BTEX in MW-6 is attributable to an offsite source. The sample collected from BEC-12S was collected to delineate the product previously detected in MW-1 and MW-9 and was also analyzed for BN+15. A summary of the analytical results for the May 10, 1994 ground water samples are presented in Tables 4-8 and 4-9.

Review of the analytical data indicated that all samples contained VO compounds in excess of the NJDEP *Class II-A GWQS*. No BN compounds were detected in the samples collected from BEC-12S at concentrations exceeding GWQS. The VO compounds detected at concentrations exceeding GWQS are summarized in the table below.

Monitoring Well Designation	Compounds Detected Above NJDEP Class II-A GWQS (ppb)	NJDEP Class II-A Ground Water Quality Standard (ppb)
MW-6	methylene chloride*, 94 benzene, 1,400 total xylenes, 170	2 0.2 40
MW-10	methylene chloride*, 140 benzene, 310 toluene, 2,300 ethylbenzene, 3,100 total xylenes, 11,400	2 0.2 1,000 700 40
BEC-12S	vinyl chloride, 460 methylene chloride*, 23 trichloroethene, 24 total xylenes, 44	0.08 2 1 40
BEC-12S (DUP)	vinyl chloride, 490 methylene chloride*, 36 trichloroethene, 23	0.08 2 1

* Compound is likely present due to laboratory contamination, and is not considered representative of site conditions.

Benzene and xylenes were present in the samples collected from MW-6 and MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS. Additionally, toluene and ethylbenzene were detected in the sample collected from MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS. Methylene chloride was also detected at concentrations exceeding the NJDEP *Class II-A* GWQS, however, it is likely that the presence of this compound is representative of laboratory contamination as methylene chloride is a common laboratory remnant. Comparison of the May 1994 results to the June 1993 results indicate that benzene concentrations detected in MW-10 decreased since 1993, while ethylbenzene and xylene concentrations detected in MW-10 increased since

1993. These results are consistent with a source area to the east of the site, which would result in the more soluble benzene migrating to MW-10 in 1993, while compounds of lower solubility (ethylbenzene and xylene) are migrating to MW-10 in 1994.

Vinyl chloride and trichloroethene were present in the samples collected from BEC-12S at concentrations exceeding the NJDEP *Class II-A* GWQS. As previously stated, BEC-12S was sampled to delineate the product previously detected in MW-1 and MW-9. It should be noted that no hazardous materials have historically been stored at the site at locations upgradient of BEC-12S and there has been no documented spills of hazardous materials in this area. Two USTs (removed in 1989) formerly utilized to store heating oil were located upgradient of BEC-12S, however the presence of chlorinated VO compounds in BEC-12S is not considered attributable to these USTs as these compounds are not typical of heating oils.

4.2.2.3 November 7, 1994 Results

On November 7, 1994, ground water samples were collected from BEC-12S and were analyzed for BN+15 and V0+15. A summary of the analytical results for the November 7, 1994 ground water samples is presented in Table 4-10.

Review of the analytical data indicated that vinyl chloride, methylene chloride, and trichloroethene were present in the samples collected from BEC-12S at concentrations in excess of the NJDEP *Class II-A GWQS*. BN compounds were not detected in the sample. The compounds detected at concentrations exceeding GWQS are summarized in the table below.

Monitoring Well Designation	Compounds Detected Above NJDEP Class II-A GWQS (ppb)	NJDEP Class II-A Ground Water Quality Standard (ppb)
BEC-12S	vinyl chloride, 400 methylene chloride*, 32 trichloroethene, 7.8	0.08 2 1
BEC-12S (DUP)	vinyl chloride, 300 methylene chloride, 32 trichloroethene, 4.9	0.08 2 1

* Compound is likely present due to laboratory contamination, and is not considered representative of site conditions.

Vinyl chloride and trichloroethene were present in the samples collected from BEC-12S at concentrations exceeding the NJDEP *Class II-A* GWQS. Comparison of the November 7, 1994 results to the May 10, 1994 results indicate that the concentrations of vinyl chloride and trichloroethene are decreasing within BEC-12S. It should be noted that no hazardous materials have historically been stored at the site at locations upgradient of BEC-12S and

there has been no documented spills of hazardous materials in this area. Two USTs (removed in 1989) formerly utilized to store heating oil were located upgradient of BEC-12S, however the presence of chlorinated VO compounds in BEC-12S is not considered attributable to these USTs as these compounds are not typical of heating oils. Methylene chloride was also detected at concentrations exceeding the NJDEP *Class II-A* GWQS, however, it is likely that the presence of this compound is representative of laboratory contamination as methylene chloride is a common laboratory remnant.

4.2.3 Product Recovery and Fingerprinting Results

LNAPL has been detected in several onsite ground water monitoring wells (MW-1, MW-8, MW-9) at thicknesses ranging from non-detect (ND) to 0.50 feet. Additionally, LNAPL has historically been detected in an upgradient offsite well (MW-7) at thicknesses ranging from 0.25 feet to 0.50 feet. LNAPL samples were collected for fingerprint characterization from MW-1, MW-7, MW-8, and MW-9 on August 8, 1993. An additional sample was collected from MW-8 on May 24, 1994. Review of the analytical results for the August 8, 1993 sampling event indicates the following:

- The LNAPL samples collected from MW-1 and MW-9 consist of a mixture of kerosene and lubricating oil;
- The LNAPL sample collected from MW-7 consists of a combination of diesel fuel and #2 fuel oil; and
- The LNAPL sample collected from MW-8 consists entirely of lubricating oil.

Review of the analytical results for the May 24, 1994 sampling event indicates that the sample collected from MW-8 consists of a petroleum product combined with motor oil or another lubricating fluid (possibly synthetic). Copies of the Veritech and Friedman & Bruya analytical data packages are provided in Volume II, Appendix E.

Additionally, fingerprint analysis of a LNAPL sample collected from an upgradient offsite well (MW-7) indicated that LNAPL in this upgradient well consists of a combination of diesel fuel and #2 fuel oil (Section 4.2.3). The NJDEP and AMMCo have historically determined that LNAPL detected in MW-7 is not attributable to AMMCo, as this well is located upgradient of the AMMCo site.

Beginning on March 22, 1994, a LNAPL recovery program was initiated at the AMMCo site. Free-phase product thickness was measured and/or recovered on 14 separate occasions in 1994 and 1995. The static fluid level within each well was inspected for evidence of free-phase product visually via a clear Teflon bailer and using an interface probe. LNAPL was recovered by hand bailing with a 3.5-inch diameter polyvinylchloride (PVC) bailer with LNAPL emptied into a properly labeled 55-gallon steel drum. However, due to the limited

amount of product present within the wells, recovery of product has not been efficient and measurement of recovered product/water within the aforementioned 55-gallon drums indicates that the majority of the contents of these drums is water. Based on this observation, product recovery was discontinued on July 3, 1995. As of July 3, 1995, MW-1 had only a product sheen, MW-8 contained 0.10 feet of product, MW-9 contained 0.05 feet of product, and BEC-12S contained no product. Information pertaining to product thickness noted within onsite wells is summarized in Table 4-11.

4.2.4 Regional Ground Water Quality Investigation

As previously stated, BELL conducted telephone interviews and a review of the NJDEP files associated with offsite ground water investigations in order to assess ground water quality for the Kearny area. Ground water for the Town of Kearny is classified as GW-III, which has a total dissolved solids (TDS) concentration of 500 to 100,000 mg/kg and is not suitable for consumption or other human uses. According to the NJDEP Bureau of Water Allocation, all wells located in Kearny are either used for monitoring or industrial purposes. The Town of Kearny obtains all potable water from the Wanaque Reservoir.

On March 31, 1995 and April 3, 1995, BELL conducted a review of the NJDEP files associated with previous offsite investigations. The NJDEP files for four sites located in various sections of Kearny were reviewed in order to determine the extent and type of contamination present. Information regarding concentrations of aluminum in ground water was not available, since aluminum analysis was not required for any of the sites reviewed. The properties for which NJDEP files were reviewed, their location relative to the AMMCo site, and brief descriptions of the findings of each review are summarized below.

1. **Franklin Plastics** - 113 Passaic Avenue. This site is located adjacent to the Passaic River, immediately north of AMMCo's office facilities. Franklin Plastics installed ten monitoring wells and six piezometers in various locations onsite (which were later abandoned in August 1993) in order to determine ground water quality conditions. LNAPL was detected within MW-1, which as previously stated in Section 5.1.1, Franklin Plastics attributed to the presence of historical fill. Low levels of VO compounds, BN compounds, phthalates, and several metals were detected in all wells. Franklin Plastics concluded that since the ground water velocity at the site is 0.15 ft/day, it would take 7.3 years for the contaminants in the ground water to reach the Passaic River. The NJDEP issued a NFA determination for the site.

2. **Alpha Metals** - 590 Belleville Turnpike. This site is located approximately 2.25 miles northeast of the AMMCo site. Alpha Metals installed three monitoring wells and one piezometer onsite. Alpha Metals attributed elevated levels of VO

compounds, BNs, and metals detected in ground water samples collected at the site to the historical fill materials present onsite.

3. **BASF** - 50 Central Avenue. This site is located 3.27 miles southeast of the AMMCo site. Information regarding ground water contamination/remediation at this site was not available at the NJDEP. However, BASF indicated that active ground water remediation at the site was not warranted as the ground water for the Town of Kearny was classified as GW-III and will never be used for human consumption. Operations at the BASF facility ceased in 1990.

4. **T.P. Industrial** (aka Purex Industries) - 49 Central Avenue. This site is located approximately 3.27 miles southeast of the AMMCo site. Widespread ground water contamination, primarily by chlorinated VO compounds, was present in the shallow aquifer T.P. Industrial determined that the ground water flow beneath the site is controlled mainly by the distribution of fill and silt underlying the facility and that the silty clay acts as an aquitard relative to the shallow aquifer, and causes the ground water flow to be diverted towards the north (away from the Passaic and Hackensack Rivers). The NJDEP granted NFA in regards to ground water at the site based on the following:

   1) ground water is not used as a resource in the area;
   2) the local man-made shallow aquifer is highly contaminated;
   3) nearby surface water receptors are not threatened;
   4) local land uses have been and are expected to continue to be industrial; and
   5) other local sources of ground water contamination have not been identified.

   The NJDEP subsequently recommended that T.P. Industrial seal all onsite monitoring wells and rescinded the NJPDES Discharge to Ground Water Permit application submitted to the NJDEP.

5.0 EVALUATION OF CURRENT ENVIRONMENTAL CONDITIONS

5.1 SOIL

5.1.1 Distribution of PAHs and Metals

A review of the analytical results of the PE soil samples and the soil boring soil samples indicate that PAHs and selected metals are present in concentrations exceeding the most stringent NJDEP SCC (NRDC for the particular compounds detected at the AMMCo site) in various locations onsite. The PAHs identified at concentrations exceeding the NRDC SCC include benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, ideno(1,2,3-cd)pyrene, and dibenzo(a,h) anthracene. Additionally, lead exceeded the NRDC SCC in four samples, while arsenic and zinc exceeded the NRDC SCC in one sample each. Only one sample (0-0.5 feet BGS in boring SB-5) contained concentrations of contaminants in excess of IGW SCC. Furthermore, a review of the analytical data for the soil boring investigation indicates that the concentrations of PAHs and metals decrease with depth at the AMMCo site.

PAHs and metals detected in soil at the AMMCo site are primarily attributable to historical fill placement at the site and the deposition of airborne contaminants resulting from the historical industrial use of the area surrounding the AMMCo site. This conclusion is supported by the following data:

1. Information obtained during the RI indicated that the portion of Kearny in which the AMMCo site is located has historically been filled, particularly in the area of the Passaic River. Additionally, the NJDEP file review for sites in the area surrounding the AMMCo site indicated that historical fill containing PAHs and metals were deposited at these sites. Installation of soil borings, monitoring wells and test pits onsite indicate the presence of fill material at the site to depths ranging from two to four feet BGS.

2. Soil samples collected from fill materials at Franklin Plastics from 0 to 2.5 feet BGS contained concentrations of BN compounds and metals similar to those observed in samples collected from the same interval during the soil boring investigation at the AMMCo site. Since the soils at Franklin Plastics may be representative of fill materials similar to those observed at the AMMCo site, this data strongly suggests that the contaminants at the AMMCo site are associated with fill deposition. It should be noted that the NJDEP has granted NFA determinations for other sites in the area of the AMMCo site with fill materials containing concentrations of PAHs and metals exceeding NJDEP SCC (see Section 4.1.8.1).

3. Concentrations of PAHs and metals of the same order of magnitude as those observed in samples collected from areas of the site which were destroyed by the explosion/fire were observed within an area behind AMMCo Building # 22 (SB-3, SB-4 and SB-17, Figure 4-2) which is at a higher elevation than the AMMCo operational areas. As the building would have shielded this area from the airborne distribution of contaminants during the fire, it is likely that PAHs and metals would not have migrated to these areas from operational areas via surface water leaching or other transport mechanisms.

4. A background soil sample (SB-17, 2.0-2.5 feet BGS) contained the highest concentration (13,000 mg/kg) of aluminum detected in all soil boring samples. As the potential for this soil sample to have been impacted by operations or the 1986 explosion/fire at the AMMCo site (the property is located behind AMMCo Building #22 at an elevation above the AMMCo site and the sample is a subsurface sample collected from 2.0 to 2.5 feet BGS) is extremely low, this data strongly suggests that fill material containing elevated concentrations of aluminum and other metals to be present at locations in the area of the AMMCo site.

   Deposition of airborne contaminants (i.e., combustion products from automobiles and factories) may have contributed to concentrations of PAHs and selected metals in surface soils at the site. Additionally, ambient levels of PAHs have increased over the last two centuries as a result of the use of fossil fuels, and PAHs are typically found to be associated with imported fill materials. Automobile traffic is heavy in the area and numerous industrial facilities are located in the vicinity of the site. It should be noted that lead is also a combustion product of fossil fuels and is found at elevated levels in soils within areas historically industrialized and/or near to roadways.

5. Based on a review of the documents *Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States* (USGS, 1984) and *Soil Chemistry of Hazardous Materials* (Hazardous Materials Control Research Institute), concentrations of metals detected at the AMMCo site are within the ambient concentrations of these metals in the eastern United States (see Section 4.1.8.2).

5.1.2 Historic Placement of Fill Material at the Site

BELL conducted a review of the NJDEP files associated with investigations conducted at sites in the area surrounding the AMMCo site to investigate the regional deposition of fill materials and the regional occurrence of BN compounds and selected metals in soil. This file review was conducted to determine if compounds of concern detected at the site (PAHs and selected metals) were representative of fill materials used at the site and in the area of the site. Additionally, BELL conducted a literature search and telephone interviews to investigate the historical placement of fill materials at the AMMCo site and at surrounding

properties. The NJDEP defines historical fill material as *"...generally large volumes of non-indigenous material, used to raise the topographic elevation of a site, which were contaminated prior to emplacement and are in no way connected with the operations at the location of emplacement and which include, but are not limited to, construction debris, dredge spoils, incinerator residue, demolition debris, fly ash, and non-hazardous solid waste."* (S1070, Section 35.h1).

Information obtained during this investigation indicated that the portion of Kearny in which the AMMCo site is located has historically been filled, particularly in the area of the Passaic River. Additionally, the NJDEP file review for sites in the surrounding area indicated that historical fill containing PAHs and metals were deposited at these sites. This is consistent with information obtained from the *Soil Survey for Hudson County, New Jersey*, (USGS) which indicates that the majority of the soils located in the region surrounding the AMMCo site are described as Udothents soils. This land type has been filled and smoothed, or otherwise extensively disturbed by excavation and filling activities, to a depth of 3 feet or more. The original soil can no longer be identified. Fill material generally consists of a mixture of stones, boulders, rubble, and soil material.(Section 2.2). Installation of soil borings, monitoring wells and test pits onsite indicate the presence of fill material at the site to depths ranging from two to four feet BGS.

It should be noted that fill material containing PAHs and metals has been identified at several sites in the area of the AMMCo site (Section 4.1.8.1).

5.2 GROUND WATER

To further characterize ground water quality at the AMMCo site, ground water samples were collected from monitoring wells on June 7, 1993, May 10, 1994, and November 7, 1994.

5.2.1 Aluminum Concentrations

Review of the June 7, 1993 analytical data indicated that aluminum was present in samples collected from monitoring wells MW-3 through MW-6, and MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS of 0.2 milligrams per liter (mg/l). Detected concentrations of aluminum ranged from 1.0 (MW-4) to 47 mg/l (MW-5) (Figure 4-3). The observed concentrations of aluminum did not show a distribution pattern indicating a source area at the site. It should be noted that samples collected from one upgradient offsite well (MW-10) and one onsite well (MW-6) located at the upgradient property boundary of the AMMCo site contained concentrations of aluminum exceeding the NJDEP *Class II-A* GWQS, suggesting an offsite upgradient source.

Additionally, the background soil sample (SB-17, 2.0-2.5 feet BGS) contained the highest concentration (13,000 mg/kg) of aluminum detected in all soil boring samples. As the potential for this soil sample to have been impacted by operations or the 1986 explosion/fire at the AMMCo site (the property is located behind AMMCo Building #22 at an elevation above the AMMCo site and the sample is a subsurface sample collected from 2.0 to 2.5 feet BGS) is extremely low, the potential exists for fill material containing elevated concentrations of aluminum to be present at locations upgradient of the AMMCo site. It is likely that these fill materials containing aluminum have contributed to concentrations of aluminum detected in ground water at the site. Additionally, the concentrations of aluminum detected in ground water at the AMMCo site are within the range of natural concentrations of aluminum in ground water (1-1,000 ug/l) found within the eastern United States (*Soil Chemistry of Hazardous Materials,* Dragun).

5.2.2 BTEX Compounds Detected in MW-6 and MW-10

Benzene and xylenes were present in the samples collected from MW-6 and MW-10 on June 7, 1993 and May 10, 1994 at concentrations exceeding the NJDEP *Class II-A* GWQS. Additionally, toluene and ethylbenzene were detected in the sample collected from MW-10 at concentrations exceeding the NJDEP *Class II-A* GWQS. Comparison of the May 1994 results to the June 1993 results indicate that benzene concentrations detected in MW-10 decreased since 1993, while ethylbenzene and xylene concentrations detected in MW-10 increased since 1993. These results are consistent with a source area to the east of the site, which would result in the more soluble benzene migrating to MW-10 in 1993, while compounds of lower solubility (ethylbenzene and xylene) are migrating to MW-10 in 1994.

5.2.3 Chlorinated VO Compounds Detected in BEC-12S

Review of the May 10 and November 7, 1994 analytical data indicated that vinyl chloride and trichloroethene were present in samples collected from BEC-12S at concentrations exceeding the NJDEP *Class II-A* GWQS. These are the only two sampling dates for BEC-12S. Comparison of the November 7, 1994 results to the May 10, 1994 results indicate that the concentrations of vinyl chloride and trichloroethene are decreasing within BEC-12S. It should be noted that no hazardous materials have historically been stored at the site at locations upgradient of BEC-12S and there has been no documented spills of hazardous materials in this area. Two USTs (removed in 1989) formerly utilized to store heating oil were located upgradient of BEC-12S, however the presence of chlorinated VO compounds in BEC-12S is not considered attributable to these USTs as these compounds are not typical of heating oils.

5.2.4 LNAPL Distribution

LNAPL has been detected in several onsite ground water monitoring wells (MW-1, MW-8, MW-9) in thicknesses ranging from non-detect (ND) to 0.10 feet. Additionally, LNAPL has historically been detected in an upgradient offsite well (MW-7) at thicknesses ranging from 0.25 feet to 0.5 feet. LNAPL samples were collected for fingerprint characterization from MW-1, MW-7, MW-8, and MW-9 on August 8, 1993. An additional sample was collected from MW-8 on May 24, 1994. Review of the analytical results for the August 8, 1993 sampling event indicates the following:

- The LNAPL samples collected from MW-1 and MW-9 consist of a mixture of kerosene and lubricating oil;
- The LNAPL sample collected from MW-7 consists of a combination of diesel fuel and #2 fuel oil; and
- The LNAPL sample collected from MW-8 consists entirely of lubricating oil.

Review of the analytical results for the May 24, 1994 sampling event indicates that the sample collected from MW-8 consists of a petroleum product combined with motor oil or another lubricating fluid (possibly synthetic). Copies of the Veritech and Friedman & Bruya analytical data packages are provided in Volume II, Appendix E.

As stated in Section 4.2.3, due to the limited amount of product present within the wells, attempts to recover product were not efficient and measurement of recovered product/water within the 55-gallon drums used to store recovered product indicates that the majority of the contents of these drums is water. Based on this observation, product recovery was discontinued on July 3, 1995. As of July 3, 1995, MW-1 had only a product sheen, MW-8 contained 0.10 feet of product, MW-9 contained 0.05 feet of product, and BEC-12S contained no product.

6.0 SUMMARY OF PROPOSED REMEDIAL ACTIONS

Based on the evaluation of data obtained during the remedial investigation, contaminant compounds are present in soil and ground water at the AMMCo site at concentrations exceeding NJDEP SCC and GWQS. Based upon the findings from the RI, AMMCo proposes to utilize the engineering controls/capping technique for soils and proposes the no further action alternative for ground water. A detailed summary of the proposed remedial actions to be undertaken at the AMMCo facility is presented below.

6.1 SOIL

The compounds of concern identified in soils at the site at concentrations exceeding NJDEP SCC include selected BN compounds (PAHs), aluminum, cadmium and lead. As presented in Sections 4 and 5, based on the results of soil investigations historically conducted at the site and a review of soil data for sites in the area surrounding the AMMCo site, the presence of these compounds is most likely related to the historical placement of fill material and not site operations. As per New Jersey statutes (S1070, Section 35.h1), remediation of soil contaminants which are present due to the historical deposition of fill material is not required. However, AMMCo intends to place engineering controls (capping) at the property as part of the redevelopment of the site. Additionally, a DER has been prepared for the site by AMMCo and is being submitted to the NJDEP concurrently with this RIR/RAW.

A bituminous concrete cover shall be placed to cover all portions of the site with the exception of those area currently covered by existing buildings. The construction of this cap will be in accordance with NJDOT standards and designed to provide an impervious cover subject to minimal cracking and to support vehicular traffic. The existing soil surface will be compacted and used as the subgrade. Grading necessary to prepare a uniform subgrade for pavement surfacing will be accomplished using onsite cut and fill or by the placement of clean fill meeting NJDOT specifications for Select Fill. The compacted subgrade will be covered with four inches of Dense Graded Aggregate Base Course.

This dense graded aggregate layer will then be covered with a two inch layer of Bituminous Stabilized Base Course, Mix I-2. This layer will be subsequently covered with a one inch layer of bituminous Concrete Surface Course, Mix I-5.

7.0 REMEDIAL COST ESTIMATE

BELL has estimated costs for the remedial activities to be performed at the AMMCo site proposed in Section 8 of this RAW. The remedial costs are based on the installation of a bituminous asphalt cap. The costs for the above-mentioned tasks are as follows:

Installation of Bituminous Asphalt Cap	$175,000.00
TOTAL COSTS OF PROPOSED REMEDIAL ACTIONS:	**$175,000.00**

It should be noted that the estimated cost of soil excavation and disposal, based on the quantity of fill material expected to be present, would be an order of magnitude (10X) higher than the costs proposed above.

6.2 GROUND WATER

AMMCo proposes no further action relative to ground water at the site based on the following data:

1. LNAPL has historically been detected within onsite wells MW-1, MW-8 and MW-9. Due to the limited amount of product present within the wells, attempts to recover product were not efficient and measurement of recovered product/water within the 55-gallon drums used to store recovered product indicates that the majority of the contents of these drums is water. Based on this observation, product recovery was discontinued on July 3, 1995. As of July 3, 1995, MW-1 had only a product sheen, MW-8 contained 0.10 feet of product, MW-9 contained 0.05 feet of product, and BEC-12S contained no product.

2. Evaluation of the laboratory data associated with ground water samples collected at the site indicated that samples from two wells contained BTEX (MW-6 and MW-10) at concentrations exceeding NJDEP *Class II-A* GWQS. Results of the RI indicate that the presence of BTEX is due to an upgradient offsite source (Section 5.2).

3. Evaluation of the laboratory data associated with ground water samples collected at the site indicated that samples from several wells contained aluminum (MW-3, MW-4, MW-5, MW-6, MW-10, and MW-11S) at concentrations exceeding NJDEP *Class II-A* GWQS. It is likely that fill materials in the area of the site containing aluminum have contributed to concentrations of aluminum detected in ground water at the site. Additionally, the concentrations of aluminum detected in ground water at the AMMCo site are within the range of natural concentrations of aluminum in ground water (1-1,000 ug/l) found within the eastern United States (Section 5.2).

4. One well (BEC-12S) contained vinyl chloride and TCE at concentrations exceeding NJDEP *Class II-A* GWQS. Based on the results of the RI, these compounds are restricted to the northeast portion of the site, where BEC-12S is located. It should be noted that no hazardous materials have historically been stored at the site at locations upgradient of BEC-12S and there has been no documented spills of hazardous materials in this area. As such, no information is available relative to the source of the chlorinated VO compounds detected in BEC-12S. The potential exists for these compounds to be originating from an upgradient offsite source, however, the onsite wells (MW-1, MW-8 and MW-9) located upgradient of BEC-12S have historically contained product and therefore could not be sampled to assess the potential for an offsite source of chlorinated VO compounds.

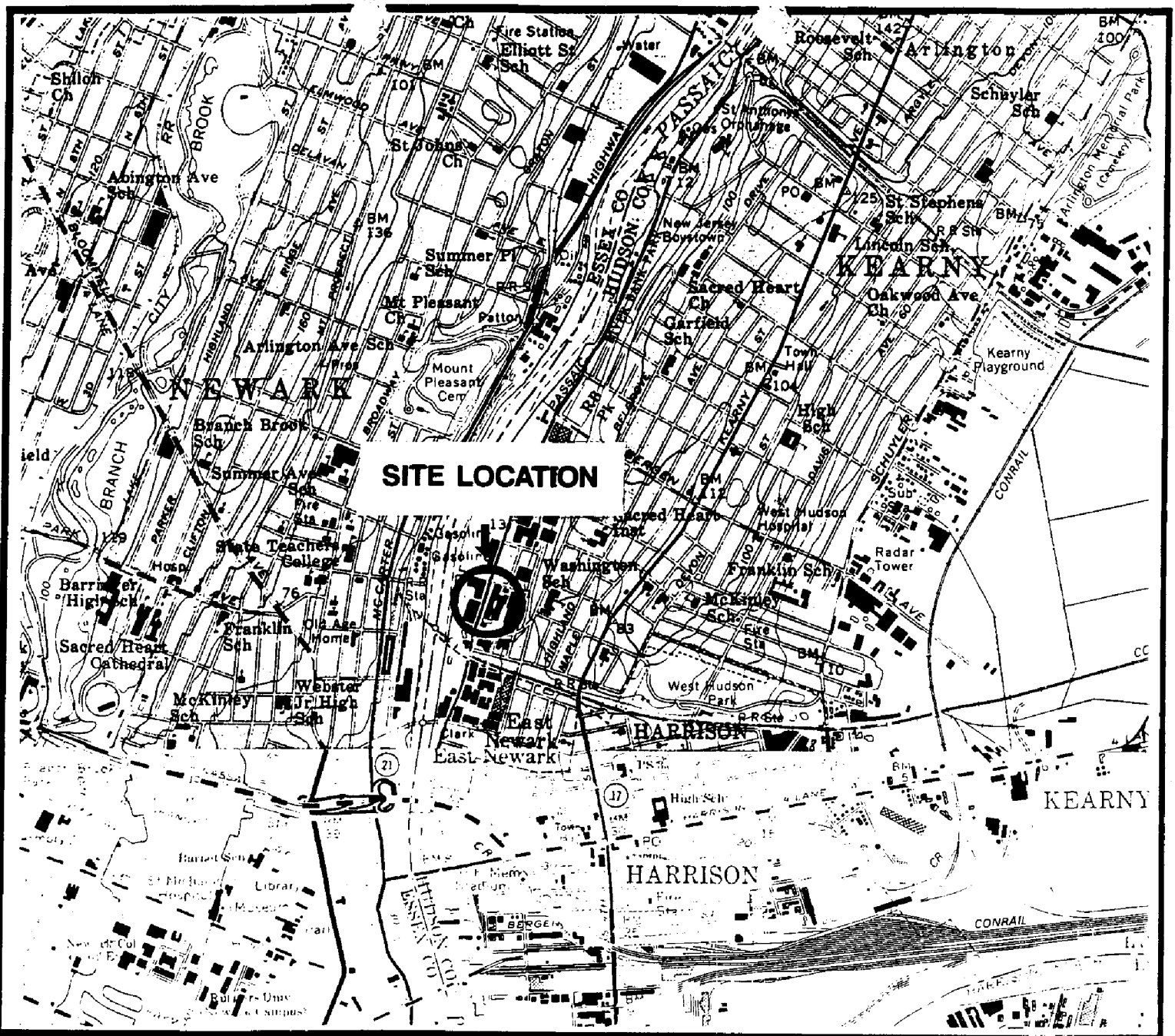
8.0 IMPLEMENTATION SCHEDULE AND REPORTING

AMMCo will notify the NJDEP following installation of the asphalt cap, including the submission of as-built drawings depicting the cap. It is anticipated that the cap will be completed within one year of the NJDEP approval of the DER.

9.0 SUMMARY AND LIMITATIONS

The Remedial Investigation Report/Remedial Action Workplan (RIR/RAW) presented herein provides for documentation and investigation of current environmental concerns pertinent to the subject site. This RIR/RAW has been carefully and methodically developed, in accordance with generally accepted environmental practices, for specific application to the American Modern Metals Corporation facility located in Kearny, New Jersey. The RIR/RAW was prepared with specific reference to prior site activities and is based upon current available data as set forth within the introduction. The RIR/RAW presents BELL's professional opinion and judgment relative to the resolution of current environmental concerns at the site as currently known. No other warranty, expressed or implied, is made.

FIGURES



SITE LOCATION MAP

American Modern Metals Corporation
65 Passaic Avenue

Kearny **Hudson County** **New Jersey**

QUAD LOCATION

USGS 7.5 MINUTE ORANGE QUADRANGLE

SCALE 1:24,000

1 1/2 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 0.5 0 1 Kilometer

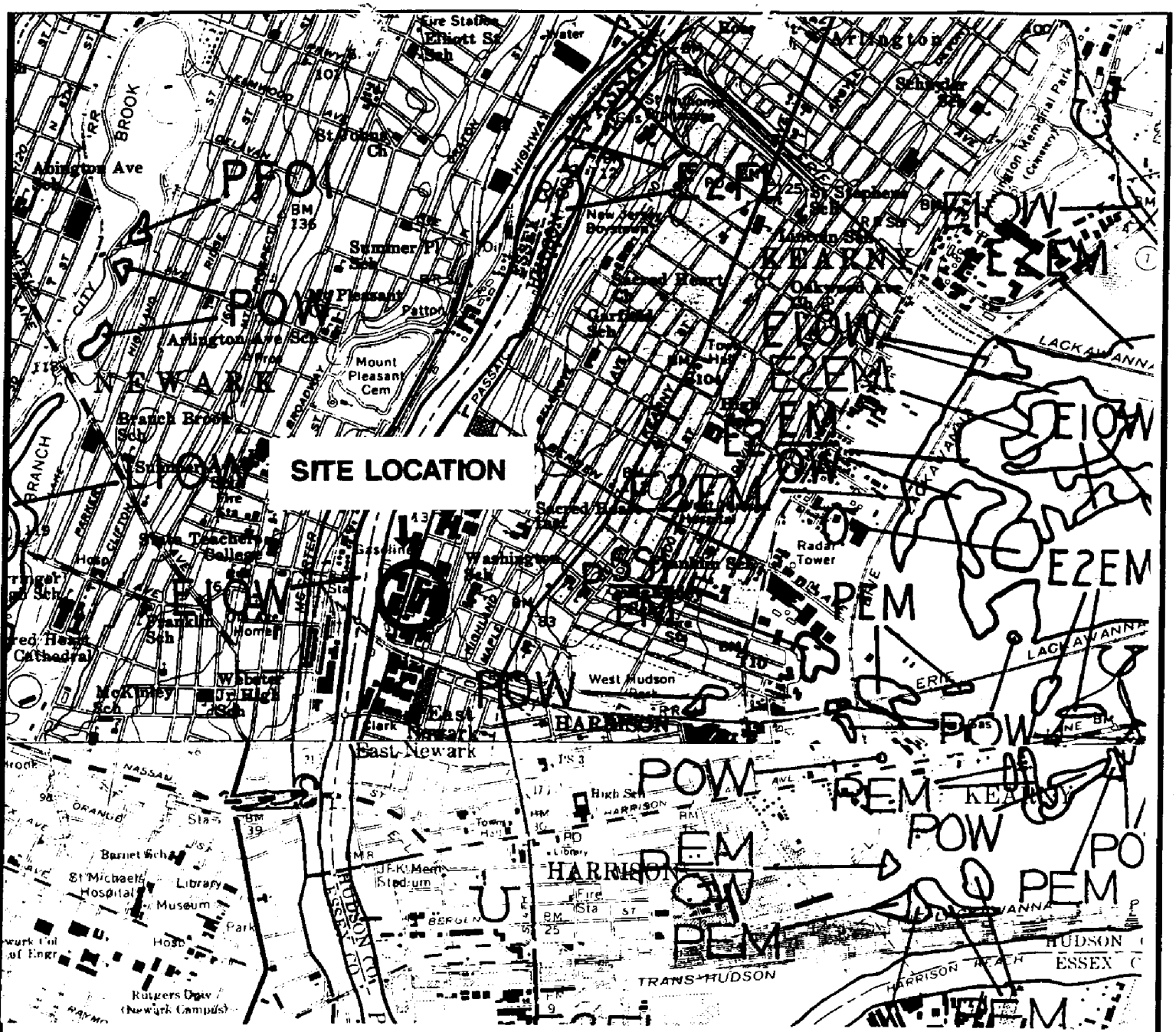
CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

N

FIGURE # 1-1

BELL PROJECT # EOG01-90059-02

TIERRA-B-008711



WETLANDS AREA MAP

American Modern Metals Corporation
65 Passaic Avenue

Kearny **Hudson County** **New Jersey**

QUAD LOCATION

USGS 7.5 MINUTE
ORANGE
QUADRANGLE

SCALE 1:24,000

1 1/2 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 0.5 0 1 Kilometer

CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

N

FIGURE # 2-1

BELL PROJECT #EOG01-90059-02

TABLES

TABLE 3-1

SUMMARY OF SAMPLING ACTIVITIES CONDUCTED SINCE JUNE 1993
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Location	Date	Former AOC/ New AOC	Matrix	Sample Depth (feet BGS)	Analytical Parameter(s)	Sampling Method
MW-3	6/7/93	N/A	Water	WT	Aluminum	Teflon Bailer
MW-4		N/A	Water	WT	Aluminum	Teflon Bailer
MW-5		N/A	Water	WT	Aluminum	Teflon Bailer
MW-6		N/A	Water	WT	Aluminum, VO + 15	Teflon Bailer
MW-10		N/A	Water	WT	Aluminum, VO + 15	Teflon Bailer
MW-11		N/A	Water	WT	Aluminum, BN + 15	Teflon Bailer
PE-130	6/17/93	12/I	Soil	2.0	BN + 15	Trowel
PE-131		12/I	Soil	2.0	BN + 15	Trowel
PE-132		12/I	Soil	2.0	BN + 15	Trowel
PE-133		12/I	Soil	2.0	BN + 15	Trowel
PE-134		12/I	Soil	2.0	BN + 15	Trowel
PE-136	6/18/93	9/I	Soil	2.0	BN + 15	Trowel
PE-137		9/I	Soil	2.0	BN + 15	Trowel
PE-138		9/I	Soil	2.0	BN + 15	Trowel
PE-139		9/I	Soil	2.0	BN + 15	Trowel
PE-140		9/I	Soil	2.0	BN + 15	Trowel
PE-141		9/I	Soil	6.0	Arsenic	Trowel
PE-142		9/I	Soil	6.0	Arsenic	Trowel
PE-143		9/I	Soil	6.0	Arsenic	Trowel
PE-144		9/I	Soil	6.0	Arsenic	Trowel
MW-1	8/2/93	N/A	Product	WT	TPH Fingerprinting	Teflon Bailer
MW-7		N/A	Product	WT	TPH Fingerprinting	Teflon Bailer
MW-8		N/A	Product	WT	TPH Fingerprinting	Teflon Bailer
MW-9		N/A	Product	WT	TPH Fingerprinting	Teflon Bailer
PE-145	9/15/93	23/I	Soil	3.5	Arsenic	Trowel
PE-146		23/I	Soil	3.5	Arsenic, Lead and Zinc	Trowel
PE-147		23/I	Soil	3.5	BN + 15 and TPH	Trowel
PE-148		23/I	Soil	3.5	Arsenic	Trowel
PE-149		23/I	Soil	3.5	Arsenic, BN + 15 and TPH	Trowel
PE-150	4/26/94	20/I	Soil	3.0	Copper	Trowel
PE-152		20/I	Soil	3.0	Copper	Trowel
PE-153		20/I	Soil	3.0	Copper	Trowel
PE-154		11/I	Soil	3.0	Copper	Trowel
PE-155		11/I	Soil	2.0	BN + 15	Trowel
PE-156		11/I	Soil	2.0	BN + 15	Trowel
PE-157		11/I	Soil	2.0	BN + 15	Trowel
PE-158		11/I	Soil	2.0	BN + 15	Trowel

Notes:

VO + 10 - Volatile organic compounds with a forward library search for ten tentatively identified compounds
BN + 15 - Base neutral compounds with a forward library search for fifteen tentatively identified compounds
TPH - Total petroleum hydrocarbons
WT - Ground water table
N/A - These wells are not associated with a specific AOC.
BGS - Below ground surface
-- - Not applicable

TABLE 3-1

SUMMARY OF SAMPLING ACTIVITIES CONDUCTED SINCE JUNE 1993
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Location	Date	Former AOC/ New AOC	Matrix	Sample Depth (feet BGS)	Analytical Parameter(s)	Sampling Method
PE-161	4/28/94	10/I	Soil	1.5	BN + 15	Trowel
PE-162		10/I	Soil	1.5	BN + 15	Trowel
PE-163		10/I	Soil	1.5	BN + 15	Trowel
PE-164		10/I	Soil	1.5	BN + 15	Trowel
PE-165		10/I	Soil	1.5-2.0	BN + 15	Trowel
PE-166		10/I	Soil	1.5-2.0	BN + 15	Trowel
PE-167		10/I	Soil	1.5-2.0	BN + 15	Trowel
PE-168		10/I	Soil	1.5-2.0	BN + 15	Trowel
PE-169		11/I	Soil	0.5	BN + 15	Trowel
PE-170		11/I	Soil	2.0	BN + 15	Trowel
PE-171		19/II	Soil	1.5-2.0	Arsenic and BN + 15	Trowel
PE-172		19/II	Soil	1.5-2.0	Arsenic and BN + 15	Trowel
PE-173		19/II	Soil	1.5-2.0	Arsenic and BN + 15	Trowel
PE-174		19/II	Soil	1.5-2.0	Arsenic and BN + 15	Trowel
MW-6	5/10/94	N/A	Water	WT	VO + 15	Teflon Bailer
MW-10		N/A	Water	WT	VO + 15	Teflon Bailer
BEC-12S		N/A	Water	WT	BN + 15 and VO + 15	Teflon Bailer
MW-8	5/24/94	N/A	Product	WT	TPH Fingerprinting	Teflon Bailer
BEC-12S	11/7/94	N/A	Water	WT	BN + 15 and VO + 15	Teflon Bailer
SS-12A	4/5/95	AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-12B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-13A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-13B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-14A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-14B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-15A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-15B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-16A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-16B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-1A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-1B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-2A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-2B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, Zinc, and Aluminum	Trowel
SS-3A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-3B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, Zinc, and Aluminum	Trowel

Notes:

VO + 10 - Volatile organic compounds with a forward library search for ten tentatively identified compounds
BN + 15 - Base neutral compounds with a forward library search for fifteen tentatively identified compounds
TPH - Total petroleum hydrocarbons
WT - Ground water table
N/A - These wells are not associated with a specific AOC.
BGS - Below ground surface
-- - Not applicable

TABLE 3-1

SUMMARY OF SAMPLING ACTIVITIES CONDUCTED SINCE JUNE 1993
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Location	Date	Former AOC/ New AOC	Matrix	Sample Depth (feet BGS)	Analytical Parameter(s)	Sampling Method
SS-4A	4/10/95	AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-4B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-5A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-5B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-6A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-6B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-7A		AOC I	Soil	0.3-0.8	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-7B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-8A		AOC I	Soil	0.3-0.8	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-8B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-9A		AOC I	Soil	0.3-0.8	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-9B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-10A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-10B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-11A		AOC I	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-11B		AOC I	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, and Zinc	Trowel
SS-17A (Background)		--	Soil	0-0.5	BN+15, Arsenic, Copper, Lead, Zinc, and Aluminum	Trowel
SS-17B (Background)		--	Soil	2.0-2.5	BN+15, Arsenic, Copper, Lead, Zinc, and Aluminum	Trowel

Notes:

VO + 10 - Volatile organic compounds with a forward library search for ten tentatively identified compounds
BN + 15 - Base neutral compounds with a forward library search for fifteen tentatively identified compounds
TPH - Total petroleum hydrocarbons
WT - Ground water table
N/A - These wells are not associated with a specific AOC.
BGS - Below ground surface
-- - Not applicable

TABLE 3-2

SUMMARY OF GROUND WATER MONITORING WELL PHYSICAL DATA
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Well Number	Bottom of Well (ft below PVC)	Bottom of Well Elev (MSL)	Ground Elevation (MSL)	Top PVC Elevation (MSL)	Depth to Top of Screen (ft below PVC)	Top of Screen Elevation (MSL)	Length of Screen (ft)
MW-1	#	#	11.85	13.49	#	#	10
MW-2	20.18	-6.17	13.08	14.01	10.18	3.83	10
MW-3	20.18	-4.33	14.18	15.85	10.18	5.67	10
MW-4	16.89	-7.48	7.74	9.41	6.89	2.52	10
MW-5	21.00	-6.42	12.88	14.58	11.00	3.58	10
MW-6	22.47	-4.86	16.17	17.61	12.47	5.14	10
MW-7	35.31	-12.39	23.31	22.92	25.31	-2.39	10
MW-8	18.00	-5.14	13.27	12.86	7.71	5.15	10
MW-9	16.24	-4.44	12.41	11.80	6.24	5.56	10
MW-10	25.03	-4.32	21.07	20.71	10.03	10.68	15
BEC-11S	14.51	-3.74	11.17	10.77	4.51	6.26	10
BEC-12S	19.00	-8.06	--	10.94	4.00	6.94	15

Notes:
-- - Information not available.
- Information not available as boring logs for this well could not be obtained from the previous consultant
MSL - Above mean sea level
ft - feet

TABLE 3-3

SUMMARY OF GROUND WATER ELEVATION DATA - JUNE 1, 1993 - DECEMBER 12, 1994
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

June 1, 1993

WELL NUMBER	DEPTH TO WATER (FT)	TOP PVC ELEVATION (MSL)	GROUND WATER ELEVATION (MSL)
MW-1	12.18	13.49	0.04' LNAPL
MW-2	12.73	14.01	1.28
MW-3	14.56	15.85	1.29
MW-4	7.37	9.41	2.04
MW-5	13.33	14.58	1.25
MW-6	14.10	17.61	3.51
MW-7	13.56	22.92	0.28' LNAPL
MW-8	11.21	12.86	0.12' LNAPL
MW-9	10.46	11.80	0.01' LNAPL
BEC-11S	9.46	10.77	1.31

June 7, 1993

WELL NUMBER	DEPTH TO WATER (FT)	TOP PVC ELEVATION (MSL)	GROUND WATER ELEVATION (MSL)
MW-1	12.26	13.49	0.01' LNAPL
MW-2	12.81	14.01	1.20
MW-3	14.63	15.85	1.22
MW-4	7.99	9.41	1.42
MW-5	13.43	14.58	1.15
MW-6	14.21	17.61	3.40
MW-7	14.00	22.92	0.55' LNAPL
MW-8	11.31	12.86	0.14' LNAPL
MW-9	10.61	11.80	0.02' LNAPL
MW-10	15.96	20.71	4.73
BEC-11S	9.57	10.77	1.20

August 2, 1993

WELL NUMBER	DEPTH TO WATER (FT)	TOP PVC ELEVATION (MSL)	GROUND WATER ELEVATION (MSL)
MW-1	12.24	13.49	0.02' LNAPL
MW-2	12.92	14.01	1.09
MW-3	14.98	15.85	0.87
MW-4	7.96	9.41	1.45
MW-5	13.68	14.58	0.90
MW-6	14.43	17.61	3.18
MW-7	14.02	22.92	0.54' LNAPL
MW-8	11.19	12.86	0.02' LNAPL
MW-9	10.60	11.80	0.02' LNAPL
MW-10	15.49	20.71	5.22

May 10, 1994

WELL NUMBER	DEPTH TO WATER (FT)	TOP PVC ELEVATION (MSL)	GROUND WATER ELEVATION (MSL)
MW-1	14.60	13.49	-1.11
MW-2	12.22	14.01	1.79
MW-3	14.20	15.85	1.65
MW-4	8.10	9.41	1.31
MW-6	14.20	17.61	3.41
MW-8	10.80	12.86	0.50' LNAPL
MW-9	10.80	11.80	0.10' LNAPL
MW-10	15.45	20.71	5.26
BEC-12	10.90	10.94	0.04

December 12, 1994

WELL NUMBER	DEPTH TO WATER (FT)	TOP PVC ELEVATION (MSL)	GROUND WATER ELEVATION (MSL)
MW-1	12.50	13.49	0.02' LNAPL
MW-2	13.00	14.01	1.01
MW-3	14.84	15.85	1.01
MW-5	13.62	14.58	0.96
MW-6	14.45	17.61	3.16
MW-7	13.60	22.92	0.25' LNAPL
MW-8	11.30	12.86	0.12' LNAPL
MW-10	16.13	20.71	4.58
BEC-12	11.49	10.94	-0.55

Notes:
MSL - Mean sea level
LNAPL - Light non-aqueous phase liquid
FT - Feet

TABLE 3-4

SUMMARY OF ANALYTICAL METHODS AND QUALITY ASSURANCE/QUALITY CONTROL SAMPLING
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Type of Sample	Matrix Type	Number of Samples	Number of Field Blanks	Number of Trip Blanks	Number of Duplicate Samples	Analytical Parameters	Sample Preservation Method	Analytical Method	Sample Container Volume	Sample Holding Time (max)
Post Excavation Soil Samples	Soil	30	3	0	5	BN+15	4C	SW-846, Methods 3550 & 8270	16 oz.	14 days
		12	2	0	3	Arsenic	4C, HNO_3	SW-846, Method 7060	4 oz.	6 months
		4	0	0	1	Copper	4C, HNO_3	SW-846, Method 6010	4 oz.	6 months
		2	1	0	1	TPH	4C	EPA-600/4-79-020, Method 418.1	4 oz.	7 days
		1	1	0	1	Lead	4C, HNO_3	SW-846, Method 6010	4 oz.	6 months
		1	1	0	1	Zinc	4C, HNO_3	SW-846, Method 6010	4 oz.	6 months
Product Samples	Product	5	0	0	0	TPH Fingerprinting	–	Capillary Gas Chromatography	4 oz.	–
Monitoring Well Samples	Water	4	2	2	2	VO+15	4C, HCl	40 CFR Part 136, Method 624	40 ml.	14 days
		2	2	0	2	BN+15	4C	40 CFR Part 136, Method 625	32 oz.	14 days
Soil Boring Samples	Soil	34	0	0	2	BN+15	4C	SW-846, Methods 3550 & 8270	4 oz.	14 days
		34	0	0	2	Arsenic	4C	SW-846, Method 7060	4 oz.	6 months
		34	0	0	2	Copper	4C	SW-846, Method 7060	4 oz.	6 months
		34	0	0	2	Lead	4C	SW-846, Method 7060	4 oz.	6 months
		34	0	0	2	Zinc	4C	SW-846, Method 7060	4 oz.	6 months
		3	0	0	1	Aluminum	4C	SW-846, Method 7060	4 oz.	6 months

Notes:
VO+15 - Volatile Organic Compounds with a Forward Library Search for Fifteen Tentatively Identified Compounds.
BN+15 - Base Neutral Compounds with a Forward Library Search for Fifteen Tentatively Identified Compounds.
TPH - Total Petroleum Hydrocarbons

TABLE 4-1

SUMMARY OF TOTAL PETROLEUM HYDROCARBONS, ZINC, LEAD, ARSENIC, AND COPPER ANALYTICAL RESULTS FOR 20 POST EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 18, 1993 AND APRIL 26, 1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation	Sample Designation	BELL Sample Number	Laboratory Sample Number	Date Sampled	Depth of Sample (Feet)	Total Petroleum Hydrocarbons (mg/kg)	Zinc (mg/kg)	Lead (mg/kg)	Arsenic (mg/kg)	Copper (mg/kg)
9	PE-141	90059-6913	AA16935	6/18/93	6.0	NT	NT	NT	1.3	NT
9	PE-142	90059-6914	AA16936	6/18/93	6.0	NT	NT	NT	10	NT
9	PE-143	90059-6915	AA16937	6/18/93	6.0	NT	NT	NT	8.5	NT
9	PE-144	90059-6916	AA16938	6/18/93	6.0	NT	NT	NT	8	NT
9	PE-144 (Dup)	90059-6917	AA16939	6/18/93	6.0	NT	NT	NT	4.8	NT
9	Field Blank	90059-1902	AA16940	6/18/93	---	NT	NT	NT	ND	NT
23	PE-145	90059-6919	AA18723	9/15/93	3.5	NT	NT	NT	1.9	NT
23	PE-146	90059-6920	AA18724	9/15/93	3.5	NT	44	27	2	NT
23	PE-146 (Dup)	90059-6925	AA18728	9/15/93	3.5	NT	34	18	1.5	NT
23	PE-147	90059-6921	AA18725	9/15/93	3.5	29	NT	NT	NT	NT
23	PE-148	90059-6922	AA18726	9/15/93	3.5	NT	NT	NT	1.3	NT
23	PE-149	90059-6923	AA18727	9/15/93	3.5	150	NT	NT	2.5	NT
23	PE-149 (Dup)	90059-6927	AA18729	9/15/93	3.5	990	NT	NT	NT	NT
23	Field Blank	90059-1501	AA18730	9/15/93	---	ND	NT	NT	NT	NT
23	Field Blank	90059-1502	AA18731	9/15/93	---	NT	ND	ND	ND	NT
20	PE-150	90059-6928	AA22874	4/26/94	3.0	NT	NT	NT	NT	1,700
20	PE-152	90059-6930	AA22876	4/26/94	3.0	NT	NT	NT	NT	11
20	PE-152 (Dup)	90059-6931	AA22877	4/26/94	3.0	NT	NT	NT	NT	8.6
20	PE-153	90059-6932	AA22878	4/26/94	3.0	NT	NT	NT	NT	7,600
11	PE-154	90059-6933	AA22879	4/26/94	3.0	NT	NT	NT	NT	3,200
			Residential Direct Contact Soil Cleanup Criteria (mg/kg)			10,000[1]	1,500	100	20	600
			Non-Residential Direct Contact Soil Cleanup Criteria (mg/kg)			10,000[1]	1,500	600	20	600
			Impact to Ground Water Soil Cleanup Criteria (mg/kg)			10,000[1]	NC	NC	NC	NC

Notes:
NT - Not Tested
ND - Not Detected
(mg/kg) - Milligrams per kilogram
NC - No soil cleanup criteria has been established by the NJDEP
[1] - Cleanup criteria for total organics

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation:	Area 12			Area 12			Area 12			Area 12			Area 12			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	PE-130			PE-131			PE-132			PE-133			PE-134					
BELL Sample Number:	90059-6901			90059-6902			90059-6903			90059-6904			90059-6905					
Laboratory Sample Number:	AA16922			AA16923			AA16924			AA16925			AA16926					
Sample Depth:	2.0'			2.0'			2.0'			2.0'			2.0'					
Date Sampled:	6/17/93			6/17/93			6/17/93			6/17/93			6/17/93					
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q			
Dilution Factor:		33			667			667			333			667		—	—	—
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(2-Chloroisopropyl)ether	0.22	ND		3.7	ND		3.7	ND		1.9	ND		4.1	ND		0.66	3	10
Naphthalene	0.22	0.12	J	3.7	1.1	J	3.7	ND		1.9	0.58	J	4.1	ND		230	4,200	100
2-Methylnaphthalene	0.22	0.059	J	3.7	ND		3.7	ND		1.9	ND		4.1	ND		NC	NC	NC
Acenaphthylene	0.22	ND		3.7	ND		3.7	ND		1.9	ND		4.1	ND		NC	NC	NC
Acenaphthene	0.22	0.13	J	3.7	2.3	J	3.7	ND		1.9	0.55	J	4.1	1.5	J	3,400	10,000	100
Dibenzofuran	0.22	0.12	J	3.7	ND		3.7	ND		1.9	ND		4.1	ND		NC	NC	NC
Fluorene	0.22	0.18	J	3.7	0.8	J	3.7	ND		1.9	ND		4.1	ND		2,300	10,000	100
Phenanthrene	0.22	2		3.7	7.9		3.7	2	J	1.9	3.2		4.1	6.9		NC	NC	NC
Anthracene	0.22	0.32		3.7	2.2	J	3.7	ND		1.9	0.67	J	4.1	1.9	J	10,000	10,000	100
Di-n-Butylphthalate	0.22	0.076	JB	3.7	ND		3.7	ND		1.9	ND		4.1	ND		5,700	10,000	100
Fluoranthene	0.22	2.1		3.7	17		3.7	5		1.9	7		4.1	17		2,300	10,000	100
Pyrene	0.22	1.7		3.7	20		3.7	5.7		1.9	7		4.1	19		1,700	10,000	100
Benzo(a)Anthracene	0.22	0.86		3.7	11		3.7	2.2	J	1.9	3.6		4.1	9.6		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	0.22	0.27		3.7	1.8	J	3.7	2.6	J	1.9	0.58	J	4.1	2.4	J	49	210	100
Chrysene	0.22	0.96		3.7	13		3.7	3.1	J	1.9	4.2		4.1	12		9	40	500
Benzo(b)fluoranthene	0.22	1.1		3.7	16		3.7	6.5		1.9	4.7		4.1	15		0.90	4	50
Benzo(k)fluoranthene	0.22	0.71		3.7	15		3.7	ND		1.9	3.9		4.1	11		0.90	4	500
Benzo(a)Pyrene	0.22	0.83		3.7	15		3.7	2.8	J	1.9	4.3		4.1	13		0.66	0.66	100
Indeno(1,2,3-c,d)Pyrene	0.22	0.42		3.7	11		3.7	3.2	J	1.9	3		4.1	9.5		0.90	4	500
Dibenzo(a,h)Anthracene	0.22	ND		3.7	2.8	J	3.7	ND		1.9	1	J	4.1	2.4	J	0.66	0.66	100
Benzo(g,h,i)Perylene	0.22	0.39		3.7	9.3		3.7	3.1	J	1.9	2.5		4.1	8.3		NC	NC	NC
Total Targeted BNs: *		12.269			146.2			36.2			46.78			129.5		--	--	--
Total Non-Targeted BNs:		57.596			109.682			112.414			128.278			177.865		--	--	--

Notes:
MDL - Method Detection Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Former Area Designation:	Area 12			Area 12			Area 9			Area 9			Area 9			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	PE-134 (Dup)			Field Blank			PE-136			PE-137			PE-138					
BELL Sample Number:	90059-6906			90059-1901			90059-6907			90059-6908			90059-6909					
Laboratory Sample Number:	AA16927			AA16928			AA16929			AA16930			AA16931					
Sample Depth:	2.0'			---			2.0'			2.0'			2.0'					
Date Sampled:	6/17/93			6/17/93			6/18/93			6/18/93			6/18/93					
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q			
Dilution Factor:		667			1			667			100			33		---	---	---
COMPOUNDS (units)		(mg/kg)			(mg/l)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(2-Chloroisopropyl)ether	3.6	ND		5	ND		3.6	ND		0.63	ND		0.21	ND		0.66	3	10
Naphthalene	3.6	0.75	J	5	ND		3.6	ND		0.63	0.3	J	0.21	ND		230	4,200	100
2-Methylnaphthalene	3.6	ND		5	ND		3.6	ND		0.63	0.15	J	0.21	ND		NC	NC	NC
Acenaphthylene	3.6	ND		5	ND		3.6	ND		0.6	ND		0.21	ND		NC	NC	NC
Acenaphthene	3.6	1.3	J	5	ND		3.6	0.98	J	0.63	0.74		0.21	0.043		3,400	10,000	100
Dibenzofuran	3.6	ND		5	ND		3.6	ND		0.63	0.5	J	0.21	ND		NC	NC	NC
Fluorene	3.6	0.73	J	5	ND		3.6	0.96	J	0.63	0.91		0.21	ND		2,300	10,000	100
Phenanthrene	3.6	7.1		5	ND		3.6	11		0.63	5.8		0.21	0.58		NC	NC	NC
Anthracene	3.6	2	J	5	ND		3.6	2.2	J	0.63	1.3		0.21	0.12	J	10,000	10,000	100
Di-n-Butylphthalate	3.6	ND		5	ND		3.6	ND		0.63	ND		0.21	0.049	JB	5,700	10,000	100
Fluoranthene	3.6	16		5	ND		3.6	17		0.63	5.3		0.21	0.93		2,300	10,000	100
Pyrene	3.6	17		5	ND		3.6	15		0.63	3.9		0.21	0.77		1,700	10,000	100
Benzo(a)Anthracene	3.6	8.8		5	ND		3.6	6.5		0.63	2		0.21	0.43		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	3.6	ND		5	ND		3.6	ND		0.63	ND		0.21	0.11	J	49	210	100
Chrysene	3.6	9.9		5	ND		3.6	7.4		0.63	2.2		0.21	0.51		9	40	500
Benzo(b)fluoranthene	3.6	13		5	ND		3.6	12		0.63	2.2		0.21	0.66		0.90	4	50
Benzo(k)fluoranthene	3.6	9		5	ND		3.6	ND		0.63	1.5		0.21	0.36		0.90	4	500
Benzo(a)Pyrene	3.6	11		5	ND		3.6	6.7		0.63	1.6		0.21	0.46		0.66	0.66	100
Indeno(1,2,3-c,d)Pyrene	3.6	7.7		5	ND		3.6	4.4		0.63	1.2		0.21	0.26		0.90	4	500
Dibenzo(a,h)Anthracene	3.6	2.8	J	5	ND		3.6	ND		0.63	0.52	J	0.21	ND		0.66	0.66	100
Benzo(g,h,i)Perylene	3.6	6.5		5	ND		3.6	3.9		0.63	0.97		0.21	0.2	J	NC	NC	NC
Total Targeted BNs: *		113.58			0			88.04			31.09			5.433		--	--	--
Total Non-Targeted BNs:		131.246			0			131.963			66.831			31.558		--	--	--

Notes:
MDL - Method Detection Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/l) - Milligrams per liter
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation:	Area 9			Area 9			Area 9			Area 9			Area 23			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	PE-139			PE-140			PE-140 (Dup)			Field Blank			PE-147					
BELL Sample Number:	90059-6910			90059-6911			90059-6912			90059-1902			90059-6921					
Laboratory Sample Number:	AA16932			AA16933			AA16934			AA16940			AA18725					
Sample Depth:	2.0'			2.0'			2.0'			---			3.5'					
Date Sampled:	6/18/93			6/18/93			6/18/93			6/18/93			9/15/93					
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q			
Dilution Factor:		33			333			333			1			33		--	--	--
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/l)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(2-Chloroisopropyl)ether	0.17	ND		2	ND		2.2	ND		5	ND		0.19	ND		0.66	3	10
Naphthalene	0.17	ND		2	0.55	J	2.2	0.66	J	5	ND		0.19	ND		230	4,200	100
2-Methylnaphthalene	0.17	ND		2	ND		2.2	ND		5	ND		0.19	ND		NC	NC	NC
Acenaphthylene	0.17	ND		2	ND		2.2	ND		5	ND		0.19	ND		NC	NC	NC
Acenaphthene	0.17	ND		2	2.1		2.2	1.5	J	5	ND		0.19	ND		3,400	10,000	100
Dibenzofuran	0.17	ND		2	1.3	J	2.2	0.75	J	5	ND		0.19	ND		NC	NC	NC
Fluorene	0.17	0.04	J	2	2.5		2.2	1.1	J	5	ND		0.19	ND		2,300	10,000	100
Phenanthrene	0.17	0.4		2	20		2.2	14		5	ND		0.19	ND		NC	NC	NC
Anthracene	0.17	0.081	J	2	4.4		2.2	2.8		5	ND		0.19	ND		10,000	10,000	100
Di-n-Butylphthalate	0.17	ND		2	ND		2.2	ND		5	ND		0.19	0.093	J	5,700	10,000	100
Fluoranthene	0.17	0.75		2	22		2.2	18		5	ND		0.19	ND		2,300	10,000	100
Pyrene	0.17	0.58		2	17		2.2	14		5	ND		0.19	ND		1,700	10,000	100
Benzo(a)Anthracene	0.17	0.32		2	8.8		2.2	7		5	ND		0.19	ND		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	0.17	0.078	J	2	ND		2.2	ND		5	ND		0.19	ND		49	210	100
Chrysene	0.17	0.4		2	9.9		2.2	7.5		5	ND		0.19	ND		9	40	500
Benzo(b)fluoranthene	0.17	0.46		2	8.5		2.2	7.7		5	ND		0.19	ND		0.90	4	50
Benzo(k)fluoranthene	0.17	0.35		2	7.4		2.2	5.6		5	ND		0.077	ND		0.90	4	500
Benzo(a)Pyrene	0.17	0.33		2	7.7		2.2	6.4		5	ND		0.19	ND		0.66	0.66	100
Indeno(1,2,3-c,d)Pyrene	0.17	0.2		2	4.7		2.2	4.3		5	ND		0.19	ND		0.90	4	500
Dibenzo(a,h)Anthracene	0.17	ND		2	1.3	J	2.2	ND		5	ND		0.19	ND		0.66	0.66	100
Benzo(g,h,i)Perylene	0.17	0.16	J	2	3.8		2.2	3.5		5	ND		0.19	ND		NC	NC	NC
Total Targeted BNs: *		4.149			121.95			94.81			0			0.093		--	--	--
Total Non-Targeted BNs:		36.602			186.556			92.546			0			0		--	--	--

Notes:
MDL - Method Detection Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/l) - Milligrams per liter
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation: Sample Designation: BELL Sample Number: Laboratory Sample Number: Sample Depth: Date Sampled:	Area 23 PE-149 90059-6923 AA18727 3.5' 9/15/93			Area 23 PE-149 (Dup) 90059-6927 AA18729 3.5' 9/15/93			Area 23 Field Blank 90059-1501 AA18730 --- 9/15/93			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q			
Dilution Factor:		33			330			1		--	--	--
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/l)		(mg/kg)	(mg/kg)	(mg/kg)
bis(2-Chloroisopropyl)ether	0.19	0.22		2.1	ND		5	ND		0.66	3	10
Naphthalene	0.19	ND		2.1	ND		5	ND		230	4,200	100
2-Methylnaphthalene	0.19	ND		2.1	ND		5	ND		NC	NC	NC
Acenaphthylene	0.19	ND		2.1	ND		5	ND		NC	NC	NC
Acenaphthene	0.19	ND		2.1	ND		5	ND		3,400	10,000	100
Dibenzofuran	0.19	ND		2.1	ND		5	ND		NC	NC	NC
Fluorene	0.19	ND		2.1	ND		5	ND		2,300	10,000	100
Phenanthrene	0.19	0.15	J	2.1	ND		5	ND		NC	NC	NC
Anthracene	0.19	ND		2.1	ND		5	ND		10,000	10,000	100
Di-n-Butylphthalate	0.19	0.041	J	2.1	ND		5	ND		5,700	10,000	100
Fluoranthene	0.19	0.52		2.1	ND		5	ND		2,300	10,000	100
Pyrene	0.19	0.62		2.1	ND		5	ND		1,700	10,000	100
Benzo(a)Anthracene	0.19	0.31		2.1	ND		5	ND		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	0.19	0.18	J	2.1	ND		5	ND		49	210	100
Chrysene	0.19	0.37		2.1	ND		5	ND		9	40	500
Benzo(b)fluoranthene	0.19	0.79		2.1	ND		5	ND		0.90	4	50
Benzo(k)fluoranthene	0.075	ND		0.86	ND		5	ND		0.90	4	500
Benzo(a)Pyrene	0.19	0.39		2.1	ND		5	ND		0.66	0.66	100
Indeno(1,2,3-c,d)Pyrene	0.19	0.26		2.1	ND		5	ND		0.90	4	500
Dibenzo(a,h)Anthracene	0.19	ND		2.1	ND		5	ND		0.66	0.66	100
Benzo(g,h,i)Perylene	0.19	0.24		2.1	ND		5	ND		NC	NC	NC
Total Targeted BNs: *		4.091			0			0		--	--	--
Total Non-Targeted BNs:		0			0			0		--	--	--

Notes:
MDL - Method Detection Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
(mg/l) - Milligrams per liter
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are in at least one sample.

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation: Sample Designation: BELL Sample Number: Laboratory Sample Number: Date Sampled: Sample Depth:	Area 11 PE-155 90059-6934 AA22880 04/26/94 2'			Area 11 PE-156 90059-6935 AA22881 04/26/94 2'			Area 11 PE-157 90059-6936 AA22882 04/26/94 2'			Area 11 PE-157 (Dup) 90059-6937 AA22883 04/26/94 2'			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factor		100			333			333			333		--	--	--
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(-2-Chloroethyl)Ether	0.81	ND		2.1	ND		1.8	ND		1.9	ND		0.66	3	10
Naphthalene	0.81	ND		2.1	ND		1.8	ND		1.9	ND		230	4,200	100
2-Methylnaphthene	0.81	ND		2.1	ND		1.8	ND		1.9	ND		NC	NC	NC
Acenaphthylene	0.81	ND		2.1	ND		1.8	ND		1.9	ND		NC	NC	NC
Acenaphthene	0.81	ND		2.1	ND		1.8	ND		1.9	ND		3,400	10,000	100
Dibenzofuran	0.81	ND		2.1	ND		1.8	ND		1.9	ND		NC	NC	NC
Fluorene	0.81	ND		2.1	ND		1.8	ND		1.9	ND		2,300	10,000	100
Phenanthrene	0.81	1.7		2.1	3.4		1.8	1.7	J	1.9	1.3	J	NC	NC	NC
Anthracene	0.81	0.36	J	2.1	0.68	J	1.8	ND		1.9	ND		10,000	10,000	100
Fluoranthene	0.81	3		2.1	6.3		1.8	4		1.9	3.9		2,300	10,000	100
Pyrene	0.81	2.8		2.1	4.8		1.8	2.9		1.9	3.1		1,700	10,000	100
Benzo(a)Anthracene	0.81	1.6		2.1	3		1.8	2.2		1.9	2.7		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	0.81	0.24	J	2.1	ND		1.8	ND		1.9	ND		49	210	100
Chrysene	0.81	1.6		2.1	3		1.8	2.3		1.9	2.9		9	40	500
Benzo(b)Fluoranthene	0.81	3.5		2.1	4.7		1.8	3.5		1.9	4.2		0.90	4	50
Benzo(k)Fluoranthene	0.32	ND		0.82	ND		0.72	ND		0.77	ND		0.90	4	500
Benzo(a)Pyrene	0.81	1.9		2.1	2.9		1.8	1.9		1.9	2.2		0.66	0.66	100
Indeno(1,2,3-cd)Pyrene	0.81	0.68	J	2.1	1.6	J	1.8	1.5	J	1.9	1.7	J	0.90	4	500
Dibenzo(a,h)Anthracene	0.81	0.29	J	2.1	0.62	J	1.8	0.49	J	1.9	0.51	J	0.66	0.66	100
Benzo(g,h,i)Perylene	0.81	0.68	J	2.1	1.7	J	1.8	1.6	J	1.9	1.8	J	NC	NC	NC
TOTAL TARGETED BNs *		18.35			32.7			22.09			24.31		--	--	--
TOTAL NON-TARGETED BNs		30.802			13.566			9.772			11.481		--	--	--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation	Area 11			Area 10			Area 10			Area 10			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation	PE-158			PE-161			PE-161 (Dup)			PE-162					
BELL Sample Number	90059-6938			90059-6943			90059-6944			90059-6945					
Laboratory Sample Number	AA22884			AA22952			AA22953			AA22954					
Date Sampled	04/26/94			4/28/94			4/28/94			4/28/94					
Sample Depth	2'			1.5'			1.5'			1.5'					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factor		333			167			167			333		--	--	--
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(-2-Chloroethyl)Ether	1	ND		1	ND		1	ND		1.9	ND		0.66	3	10
Naphthalene	2	ND		1	0.24	J	1	0.38	J	1.9	2.4		230	4,200	100
2-Methylnaphthalene	2	ND		1	0.25	J	1	0.4	J	1.9	1.5	J	NC	NC	NC
Acenaphthylene	2	ND		1	0.27	J	1	0.38	J	1.9	3.8		NC	NC	NC
Acenaphthene	2	ND		1	0.79	J	1	0.8	J	1.9	0.86	J	3,400	10,000	100
Dibenzofuran	2	ND		1	0.37	J	1	0.39	J	1.9	3.2		NC	NC	NC
Fluorene	2	ND		1	0.77	J	1	0.76	J	1.9	4.6		2,300	10,000	100
Phenanthrene	2	3.7		1	8.8		1	10		1.9	33		NC	NC	NC
Anthracene	2	0.77	J	1	1.6		1	1.7		1.9	3.9		10,000	10,000	100
Fluoranthene	2	5.3		1	14		1	15		1.9	31		2,300	10,000	100
Pyrene	2	4.1		1	11		1	14		1.9	22		1,700	10,000	100
Benzo(a)Anthracene	2	2.3		1	6.2		1	7.2		1.9	10		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	2	ND		1	ND		1	ND		1.9	ND		49	210	100
Chrysene	2	2.4		1	6.6		1	8		1.9	11		9	40	500
Benzo(b)Fluoranthene	2	3.6		1	7.2		1	8.6		1.9	11		0.90	4	50
Benzo(k)Fluoranthene	0.8	ND		0.4	5.5		0.42	6.4		0.74	8		0.90	4	500
Benzo(a)Pyrene	2	2.2		1	5.8		1	6.7		1.9	8.7		0.66	0.66	100
Indeno(1,2,3-cd)Pyrene	2	1.1	J	1	2		1	2.1		1.9	3.1		0.90	4	500
Dibenzo(a,h)Anthracene	2	ND		1	0.65	J	1	0.72	J	1.9	1.3	J	0.66	0.66	100
Benzo(g,h,i)Perylene	2	1.2	J	1	1.8		1	2		1.9	2.4		NC	NC	NC
TOTAL TARGETED BNs *		25.9			73.84			85.53			161.76		--	--	--
TOTAL NON-TARGETED BNs		12.838			45.067			51.348			68.45		--	--	--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC 1
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation: Sample Designation: BELL Sample Number: Laboratory Sample Number: Date Sampled: Sample Depth:	Area 10 PE-163 90059-6946 AA22955 4/28/94 1.5'			Area 10 PE-164 90059-6947 AA22956 4/28/94 1.5'			Area 10 PE-165 90059-6948 AA22957 4/28/94 1.5'-2.0'			Area 10 PE-166 90059-6949 AA22958 4/28/94 1.5'-2.0'			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factor:		33			33			33			167		---	---	---
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(-2-Chloroethyl)Ether	0.19	ND		0.19	ND		0.19	ND		0.99	ND		0.66	3	10
Naphthalene	0.19	ND		0.19	ND		0.19	ND		0.99	ND		230	4,200	100
2-Methylnaphthalene	0.19	ND		0.19	ND		0.19	ND		0.99	ND		NC	NC	NC
Acenaphthylene	0.19	ND		0.19	ND		0.19	ND		0.99	ND		NC	NC	NC
Acenaphthene	0.19	0.064	J	0.19	ND		0.19	ND		0.99	ND		3,400	10,000	100
Dibenzofuran	0.19	0.055	J	0.19	ND		0.19	ND		0.99	ND		NC	NC	NC
Fluorene	0.19	ND		0.19	ND		0.19	ND		0.99	ND		2,300	10,000	100
Phenanthrene	0.19	1.1		0.19	0.47		0.19	0.16	J	0.99	0.67	J	NC	NC	NC
Anthracene	0.19	0.17	J	0.19	0.076	J	0.19	ND		0.99	ND		10,000	10,000	100
Fluoranthene	0.19	1.5		0.19	0.83		0.19	0.28		0.99	1		2,300	10,000	100
Pyrene	0.19	1.1		0.19	0.72		0.19	0.23		0.99	0.81	J	1,700	10,000	100
Benzo(a)Anthracene	0.19	0.52		0.19	0.37		0.19	0.11	J	0.99	0.39	J	0.90	4	500
Bis(2-Ethylhexyl)Phthalate	0.19	ND		0.19	0.049	J	0.19	ND		0.99	ND		49	210	100
Chrysene	0.19	0.61		0.19	0.44		0.19	0.15	J	0.99	0.43	J	9	40	500
Benzo(b)Fluoranthene	0.19	0.68		0.19	0.79		0.19	0.14	J	0.99	0.54	J	0.90	4	50
Benzo(k)Fluoranthene	0.078	0.52		0.075	ND		0.076	0.12		0.4	0.39	J	0.90	4	500
Benzo(a)Pyrene	0.19	0.51		0.19	0.4		0.19	0.11	J	0.99	0.42	J	0.66	0.66	100
Indeno(1,2,3-cd)Pyrene	0.19	0.26		0.19	0.19		0.19	0.055	J	0.99	ND		0.90	4	500
Dibenzo(a,h)Anthracene	0.19	0.11	J	0.19	0.094	J	0.19	ND		0.99	ND		0.66	0.66	100
Benzo(g,h,i)Perylene	0.19	0.26		0.19	0.19	J	0.19	0.054	J	0.99	ND		NC	NC	NC
TOTAL TARGETED BNs: *		7.459			4.619			1.409			4.65		--	--	--
TOTAL NON-TARGETED BNs:		25.424			22.385			24.046			57.054		--	--	--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample

TABLE 4-2

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 34 POST-EXCAVATION SOIL SAMPLES COLLECTED BETWEEN JUNE 17, 1993 AND APRIL 28,1994 WITHIN AOC I
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation: Sample Designation: BELL Sample Number: Laboratory Sample Number: Date Sampled: Sample Depth:	Area 10 PE-167 90059-6950 AA22959 4/28/94 1.5'-2.0'			Area 10 PE-168 90059-6951 AA22960 4/28/94 1.5'-2.0'			Area 11 PE-169 90059-6952 AA22961 4/28/94 0.5'			Area 11 PE-170 90059-6953 AA22962 4/28/94 2.0'			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factor:		33.3			67			133			333		---	---	---
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
bis(-2-Chloroethyl)Ether	1.9	ND		0.4	ND		0.69	ND		1.8	ND		0.66	3	10
Naphthalene	1.9	0.64	J	0.4	ND		0.69	ND		1.8	1.6	J	230	4,200	100
2-Methylnaphthalene	1.9	ND		0.4	ND		0.69	ND		1.8	0.59	J	NC	NC	NC
Acenaphthylene	1.9	ND		0.4	ND		0.69	ND		1.8	0.4	J	NC	NC	NC
Acenaphthene	1.9	1.9		0.4	ND		0.69	ND		1.8	2.6		3,400	10,000	100
Dibenzofuran	1.9	0.75	J	0.4	ND		0.69	ND		1.8	1.7	J	NC	NC	NC
Fluorene	1.9	1.6	J	0.4	ND		0.69	ND		1.8	3.1		2,300	10,000	100
Phenanthrene	1.9	16		0.4	0.66		0.69	0.63	J	1.8	25		NC	NC	NC
Anthracene	1.9	3.8		0.4	0.11	J	0.69	ND		1.8	5.8		10,000	10,000	100
Fluoranthene	1.9	27		0.4	1.1		0.69	1.5		1.8	32		2,300	10,000	100
Pyrene	1.9	22		0.4	1		0.69	1.2		1.8	24		1,700	10,000	100
Benzo(a)Anthracene	1.9	12		0.4	0.51		0.69	0.71		1.8	14		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	1.9	ND		0.4	ND		0.69	0.32	JB	1.8	ND		49	210	100
Chrysene	1.9	12		0.4	0.59		0.69	0.82		1.8	14		9	40	500
Benzo(b)Fluoranthene	1.9	10		0.4	1		0.69	1.7		1.8	14		0.90	4	50
Benzo(k)Fluoranthene	0.74	15		0.16	ND		0.28	ND		0.72	8.3		0.90	4	500
Benzo(a)Pyrene	1.9	12		0.4	0.55		0.69	0.84		1.8	12		0.66	0.66	100
Indeno(1,2,3-cd)Pyrene	1.9	4.1		0.4	0.35	J	0.69	0.48	J	1.8	5.4		0.90	4	500
Dibenzo(a,h)Anthracene	1.9	1.9		0.4	ND		0.69	ND		1.8	ND		0.66	0.66	100
Benzo(g,h,i)Perylene	1.9	3.8		0.4	0.39	J	0.69	0.51	J	1.8	4.9		NC	NC	NC
TOTAL TARGETED BNs: *		144.49			6.26			8.39			169.39		--	--	--
TOTAL NON-TARGETED BNs:		56.24			25.264			ND			ND		--	--	--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-3

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 4 POST-EXCAVATION SOIL SAMPLES COLLECTED ON APRIL 28, 1994 WITHIN AOC II
AMMCO-KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation:	Area 19			Area 19			Area 19			Area 19			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	PE-171			PE-172			PE-173			PE-174					
BELL Sample Number:	90059-6954			90059-6955			90059-6957			90059-6959					
Laboratory Sample Number:	AA22963			AA22964			AA22965			AA22967					
Date Sampled:	4/28/94			4/28/94			4/28/94			4/28/94					
Sample Depth:	1.5'-2.0'			1.5'-2.0'			1.5'-2.0'			1.5'-2.0'					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factor:		33			133			33			67		—	—	—
COMPOUNDS (units)		(mg/kg)			(mg/kg)			(mg/kg)			(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Naphthalene	0.19	ND		0.77	0.19	J	0.24	ND		0.37	0.11	J	230	4,200	100
Acenaphthene	0.19	ND		0.77	0.48	J	0.24	ND		0.37	0.35	J	3,400	10,000	100
Phenanthrene	0.19	0.09	J	0.77	2.6		0.24	0.2	J	0.37	2.8		NC	NC	NC
Anthracene	0.19	ND		0.77	0.62	J	0.24	ND		0.37	0.51		10,000	10,000	100
Fluoranthene	0.19	0.12	J	0.77	8.2		0.24	0.43		0.37	5.8		2,300	10,000	100
Pyrene	0.19	0.1	J	0.77	6.7		0.24	0.35		0.37	4.6		1,700	10,000	100
Benzo(a)Anthracene	0.19	0.057	J	0.77	4.5		0.24	0.21	J	0.37	2.9		0.90	4	500
Bis(2-Ethylhexyl)Phthalate	0.19	ND		0.77	ND		0.24	0.058	JB	0.37	ND		49	210	100
Chrysene	0.19	0.11	J	0.77	4		0.24	0.21	J	0.37	2.7		9	40	500
Benzo(b)Fluoranthene	0.19	0.17	J	0.77	4.7		0.24	0.41		0.37	5.1		0.90	4	50
Benzo(k)Fluoranthene	0.075	ND		0.31	3.8		0.094	ND		0.15	ND		0.90	4	500
Benzo(a)Pyrene	0.19	0.055	J	0.77	4.3		0.24	0.22	J	0.37	2.5		0.66	0.66	100
Indeno(1,2,3-cd)Pyrene	0.19	ND		0.77	1.8		0.24	0.1	J	0.37	1.1		0.90	4	500
Dibenzo(a,h)Anthracene	0.19	ND		0.77	0.74	J	0.24	ND		0.37	0.42		0.66	0.66	100
Benzo(g,h,i)Perylene	0.19	ND		0.77	1.6		0.24	0.094	J	0.37	0.93		NC	NC	NC
TOTAL TARGETED BNs: *		0.702			44.23			2.224			29.82		--	--	--
TOTAL NON-TARGETED BNs:		ND			ND			ND			ND		--	--	--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(mg/kg) - Milligrams per kilogram
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-4

SUMMARY OF ARSENIC ANALYTICAL RESULTS FOR 5 POST EXCAVATION SOIL SAMPLES COLLECTED ON APRIL 28, 1994 WITHIN AOC II
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Area Designation	Sample Designation	BELL Sample Number	Laboratory Sample Number	Date Sampled	Depth of Sample (Feet)	Arsenic (mg/kg)
19	PE-171	90059-6954	AA22963	4/28/94	1.5-2.0	28
19	PE-172	90059-6955	AA22964	4/28/94	1.5-2.0	6.2
19	PE-173	90059-6957	AA22965	4/28/94	1.5-2.0	6.6
19	PE-173 (Dup)	90059-6958	AA22966	4/28/94	1.5-2.0	6.3
19	PE-174	90059-6959	AA22967	4/28/94	1.5-2.0	13
		Residential Direct Contact Soil Cleanup Criteria				20
		Non-Residential Direct Contact Soil Cleanup Criteria				20
		Impact to Ground Water Soil Cleanup Criteria				NC

Notes:
NT - Not Tested
ND - Not Detected
(mg/kg) - Milligrams per kilogram
NC - No soil cleanup criteria has been established by the NJDEP

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-1			SB-1			SB-2			SB-2			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-1A			SS-1B			SS-2A			SS-2A					
BELL Sample Number:	90059-6001A			90059-6001B			90059-6002A			90059-6002B					
Laboratory Sample Number:	AA29899			AA29900			AA29901			AA29902					
Depth (Feet BGS):	0'-0.5'			2.0'-2.5'			0'-0.5'			2.0'-2.5'					
Date Sampled:	4/5/95			4/5/95			4/5/95			4/5/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		500			100			300			33.3		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	2,900	970	J	570	220	J	1,700	570	J	190	ND		230,000	4,200,000	100,000
2-Methylnaphthalene	2,900	ND		570	ND		1,700	ND		190	ND		NC	NC	NC
Acenaphthylene	2,900	1,100	J	570	390	J	1,700	460	J	190	ND		NC	NC	NC
Acenaphthene	2,900	2,200	J	570	480	J	1,700	1,800		190	ND		3,400,000	10,000,000	100,000
Dibenzofuran	2,900	1,200	J	570	350	J	1,700	980	J	190	ND		NC	NC	NC
Diethylphthalate	2,900	ND		570	ND		1,700	ND		190	ND		10,000,000	10,000,000	50,000
Fluorene	2,900	ND		570	ND		1,700	1,500	J	190	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	2,900	ND		570	ND		1,700	ND		190	ND		NC	NC	NC
Phenanthrene	2,900	33,000		570	6,300		1,700	17,000		190	570		NC	NC	NC
Anthracene	2,900	6,100		570	1,100		1,700	3,900		190	110	J	10,000,000	10,000,000	100,000
Di-n-Butylphthalate	2,900	ND		570	ND		1,700	ND		190	ND		5,700,000	10,000,000	100,000
Fluoranthene	2,900	36,000		570	8,600		1,700	18,000		190	1,100		2,300,000	10,000,000	100,000
Pyrene	2,900	35,000		570	7,700		1,700	16,000		190	860		1,700,000	10,000,000	100,000
Butylbenzylphthalate	2,900	ND		570	ND		1,700	ND		190	ND		NC	NC	NC
Benzo(a)Anthracene	2,900	17,000		570	3,300		1,700	7,300		190	560		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	2,900	ND		570	ND		1,700	ND		190	45	J	49,000	210,000	100,000
Chrysene	2,900	17,000		570	3,700		1,700	6,400		190	590		9,000	40,000	500,000
Benzo(b)Fluoranthene	2,900	19,000		570	5,500		1,700	7,100		190	860		900	4,000	50,000
Benzo(k)Fluoranthene	5,800	5,300		230	1,700		670	2,400		77	270		900	4,000	500,000
Benzo(a)Pyrene	2,900	15,000		570	3,600		1,700	5,900		190	620		660	660	100,000
Indeno(1,2,3-cd)Pyrene	2,900	6,800		570	1,100		1,700	2,400		190	220		900	4,000	500,000
Dibenzo(a,h)Anthracene	2,900	1,500	J	570	320	J	1,700	590	J	190	65	J	660	660	100,000
Benzo(g,h,i)Perylene	2,900	7,600		570	1,100		1,700	2,500		190	210		NC	NC	NC
TOTAL TARGETED BNs *		204,770			45,660			94,800			6,160		--	--	--
TOTAL NON-TARGETED BNs		63,954			9,545			14,831			3,330		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	1.2	14		0.57	2.6		0.56	3.6		0.58	3.2		20	20	NC
Copper	2.9	250		2.8	15		2.8	31		2.9	18		600	600	NC
Lead	12	510		11	73		11	89		12	51		400	600	NC
Zinc	23	3600		5.7	230		5.6	60		5.8	45		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		230	7,500		NC	NC	NC

Notes
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-3			SB-3			SB-3			SB-3			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-3A			SS-3B(DUP)			SS-3A			SS-3B(DUP)					
BELL Sample Number:	90059-6003A			90059-6017A			90059-6003B			90059-6017B					
Laboratory Sample Number:	AA29903			AA29905			AA29904			AA29906					
Depth (Feet BGS):	0'-0.5'			0'-0.5			2.0'-2.5'			2.0'-2.5'					
Date Sampled:	4/5/95			4/5/95			4/5/95			4/5/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		100			100			33.3			33.3		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	540	ND		540	150	J	190	ND		200	ND		230,000	4,200,000	100,000
2-Methylnaphthalene	540	ND		540	ND		190	ND		200	ND		NC	NC	NC
Acenaphthylene	540	ND		540	220	J	190	ND		200	ND		NC	NC	NC
Acenaphthene	540	360	J	540	470	J	190	ND		200	ND		3,400,000	10,000,000	100,000
Dibenzofuran	540	160	J	540	280	J	190	ND		200	ND		NC	NC	NC
Diethylphthalate	540	ND		540	ND		190	ND		200	ND		10,000,000	10,000,000	50,000
Fluorene	540	ND		540	ND		190	ND		200	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	540	ND		540	ND		190	ND		200	ND		NC	NC	NC
Phenanthrene	540	4,500		540	5,800		190	ND		200	53	J	NC	NC	NC
Anthracene	540	930		540	1,400		190	ND		200	ND		10,000,000	10,000,000	100,000
Di-n-Butylphthalate	540	ND		540	ND		190	ND		200	ND		5,700,000	10,000,000	100,000
Fluoranthene	540	6,000		540	8,400		190	ND		200	81	J	2,300,000	10,000,000	100,000
Pyrene	540	5,300		540	7,000		190	49	J	200	73	J	1,700,000	10,000,000	100,000
Butylbenzylphthalate	540	ND		540	ND		190	ND		200	ND		NC	NC	NC
Benzo(a)Anthracene	540	2,800		540	3,600		190	ND		200	ND		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	540	ND		540	ND		190	ND		200	ND		49,000	210,000	100,000
Chrysene	540	2,700		540	3,500		190	ND		200	ND		9,000	40,000	500,000
Benzo(b)Fluoranthene	540	2,900		540	4,200		190	ND		200	ND		900	4,000	50,000
Benzo(k)Fluoranthene	220	1,100		220	1,200		77	ND		78	ND		900	4,000	500,000
Benzo(a)Pyrene	540	2,300		540	3,200		190	ND		200	ND		660	660	100,000
Indeno(1,2,3-cd)Pyrene	540	1,100		540	1,400		190	ND		200	ND		900	4,000	500,000
Dibenzo(a,h)Anthracene	540	270	J	540	320	J	190	ND		200	ND		660	660	100,000
Benzo(g,h,i)Perylene	540	1,100		540	1,300		190	ND		200	ND		NC	NC	NC
TOTAL TARGETED BNs: *		31,520			42,420			49			207		--	--	--
TOTAL NON-TARGETED BNs		7,064			8,818			3,525			2,038		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	0.54	6.9		0.54	5.4		0.54	6.5		0.59	4.7		20	20	NC
Copper	2.7	93		2.7	99		2.9	22		2.9	21		600	600	NC
Lead	11	370		11	270		12	36		12	45		400	600	NC
Zinc	5.4	390		5.4	360		5.8	21		5.9	13		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		93	2,400		94	1,900		NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES
COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-4			SB-4			SB-5			SB-5			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-4A			SS-4B			SS-5A			SS-5B					
BELL Sample Number:	90059-6004A			90059-6004B			90059-6005A			90059-6005B					
Laboratory Sample Number:	AA29907			AA29908			AA29909			AA29910					
Depth (Feet BGS):	0'-0.5'			2.0'-2.5'			0'-0.5'			2.0'-2.5'					
Date Sampled:	4/10/95			4/10/95			4/10/95			4/10/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		300			33.3			3,000			100		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	1,700	1,000	J	200	ND		16,000	8,600	J	540	220	J	230,000	4,200,000	100,000
2-Methylnaphthalene	1,700	780	J	200	ND		16,000	ND		540	ND		NC	NC	NC
Acenaphthylene	1,700	1,800		200	56	J	16,000	6,100	J	540	260	J	NC	NC	NC
Acenaphthene	1,700	3,900		200	140	J	16,000	25,000		540	810		3,400,000	10,000,000	100,000
Dibenzofuran	1,700	1,900		200	68	J	16,000	14,000	J	540	450	J	NC	NC	NC
Diethylphthalate	1,700	ND		200	ND		16,000	ND		540	ND		10,000,000	10,000,000	50,000
Fluorene	1,700	3,100		200	ND		16,000	19,000		540	590		2,300,000	10,000,000	100,000
4-Nitroaniline	1,700	ND		200	ND		16,000	ND		540	ND		NC	NC	NC
Phenanthrene	1,700	35,000		200	1,400		16,000	250,000		540	8,100		NC	NC	NC
Anthracene	1,700	8,600		200	330		16,000	57,000		540	1,800		10,000,000	10,000,000	100,000
Di-n-Butylphthalate	1,700	ND		200	ND		16,000	ND		540	ND		5,700,000	10,000,000	100,000
Fluoranthene	1,700	51,000		200	2,200		16,000	300,000		540	11,000		2,300,000	10,000,000	100,000
Pyrene	1,700	45,000		200	1,900		16,000	240,000		540	8,800		1,700,000	10,000,000	100,000
Butylbenzylphthalate	1,700	ND		200	ND		16,000	ND		540	ND		NC	NC	NC
Benzo(a)Anthracene	1,700	24,000		200	1,000		16,000	130,000		540	4,600		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	1,700	ND		200	ND		16,000	ND		540	ND		49,000	210,000	100,000
Chrysene	1,700	21,000		200	980		16,000	120,000		540	4,400		9,000	40,000	500,000
Benzo(b)Fluoranthene	1,700	36,000		200	1,100		16,000	130,000		540	5,000		900	4,000	50,000
Benzo(k)Fluoranthene	680	10,000		78	390		6,500	43,000		220	1,800		900	4,000	500,000
Benzo(a)Pyrene	1,700	22,000		200	920		16,000	110,000		540	4,000		660	660	100,000
Indeno(1,2,3-cd)Pyrene	1,700	6,000		200	480		16,000	59,000		540	2,200		900	4,000	500,000
Dibenzo(a,h)Anthracene	1,700	1,500	J	200	110	J	16,000	16,000	J	540	550		660	660	100,000
Benzo(g,h,i)Perylene	1,700	5,500		200	520		16,000	62,000		540	2,300		NC	NC	NC
TOTAL TARGETED BNs: *		278,080			11,594			1,589,700			56,880		--	--	--
TOTAL NON-TARGETED BNs		55,569			2,038			270,651			11,721		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	0.57	5.5		0.59	6.5		2.7	51		0.54	6.7		20	20	NC
Copper	2.8	45		2.9	17		2.7	54		2.7	24		600	600	NC
Lead	11	310		12	27		22	1,200		11	98		400	600	NC
Zinc	5.7	230		5.9	62		5.4	120		5.4	340		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		NA	NA		NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES
COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-6			SB-6			SB-7			SB-7			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-6A			SS-6B			SS-7A			SS-7B					
BELL Sample Number:	90059-6006A			90059-6006B			90059-6007A			90059-6007B					
Laboratory Sample Number:	AA29911			AA29912			AA29913			AA29914					
Depth (Feet BGS):	0'-0.5'			2.0'-2.5'			0.3'-0.8'			2.0'-2.5'					
Date Sampled:	4/10/95			4/10/95			4/10/95			4/10/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		33.3			33.3			33.3			33.3		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	180	60	J	190	ND		190	48	J	190	ND		230,000	4,200,000	100,000
2-Methylnaphthalene	180	75	J	190	ND		190	91	J	190	ND		NC	NC	NC
Acenaphthylene	180	120	J	190	ND		190	130	J	190	ND		NC	NC	NC
Acenaphthene	180	270		190	ND		190	180	J	190	ND		3,400,000	10,000,000	100,000
Dibenzofuran	180	110	J	190	ND		190	60	J	190	ND		NC	NC	NC
Diethylphthalate	180	ND		190	ND		190	ND		190	ND		10,000,000	10,000,000	50,000
Fluorene	180	ND		190	ND		190	200		190	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	180	ND		190	ND		190	ND		190	ND		NC	NC	NC
Phenanthrene	180	3,400		190	120	J	190	2,100		190	ND		NC	NC	NC
Anthracene	180	660		190	ND		190	350		190	ND		10,000,000	10,000,000	100,000
Di-n-Butylphthalate	180	ND		190	ND		190	90	J	190	ND		5,700,000	10,000,000	100,000
Fluoranthene	180	5,100		190	170	J	190	2,900		190	ND		2,300,000	10,000,000	100,000
Pyrene	180	5,100		190	150	J	190	4,000		190	ND		1,700,000	10,000,000	100,000
Butylbenzylphthalate	180	70	J	190	ND		190	310		190	ND		NC	NC	NC
Benzo(a)Anthracene	180	2,600		190	84	J	190	1,500		190	ND		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	180	160	J	190	ND		190	550		190	ND		49,000	210,000	100,000
Chrysene	180	2,600		190	84	J	190	1,700		190	ND		9,000	40,000	500,000
Benzo(b)Fluoranthene	180	4,300		190	100	J	190	2,700		190	ND		900	4,000	50,000
Benzo(k)Fluoranthene	72	1,300		77	ND		74	840		75	ND		900	4,000	500,000
Benzo(a)Pyrene	180	2,400		190	75	J	190	1,500		190	ND		660	660	100,000
Indeno(1,2,3-cd)Pyrene	180	680		190	44	J	190	420		190	ND		900	4,000	500,000
Dibenzo(a,h)Anthracene	180	170	J	190	ND		190	140	J	190	ND		660	660	100,000
Benzo(g,h,i)Perylene	180	600		190	51	J	190	420		190	ND		NC	NC	NC
TOTAL TARGETED BNs: *		29,775			878			20,229			0		--	--	--
TOTAL NON-TARGETED BNs		6,624			387			9,176			2,355		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	5.4	98		0.58	3.1		0.56	6.9		0.56	1.7		20	20	NC
Copper	2.7	30		2.9	12		2.8	64		2.8	16		600	600	NC
Lead	11	130		12	21		11	320		11	36		400	600	NC
Zinc	5.4	180		5.8	35		5.6	350		5.6	46		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		NA	NA		NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES
COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-8			SB-8			SB-9			SB-9			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-8A			SS-8B			SS-9A			SS-9B					
BELL Sample Number:	90059-6008A			90059-6008B			90059-6009A			90059-6009B					
Laboratory Sample Number:	AA29915			AA29916			AA29917			AA29918					
Depth (Feet BGS):	0.3'-0.8'			2.0'-2.5'			0.3'-0.8'			2.0'-2.5'					
Date Sampled:	4/10/95			4/10/95			4/10/95			4/10/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		33.3			33.3			33.3			33.3		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	190	ND		190	ND		190	ND		200	ND		230,000	4,200,000	100,000
2-Methylnaphthalene	190	ND		190	ND		190	ND		200	ND		NC	NC	NC
Acenaphthylene	190	ND		190	ND		190	ND		200	ND		NC	NC	NC
Acenaphthene	190	ND		190	ND		190	ND		200	ND		3,400,000	10,000,000	100,000
Dibenzofuran	190	ND		190	ND		190	ND		200	ND		NC	NC	NC
Diethylphthalate	190	ND		190	ND		190	ND		200	240		10,000,000	10,000,000	50,000
Fluorene	190	ND		190	ND		190	ND		200	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	190	ND		190	ND		190	ND		200	ND		NC	NC	NC
Phenanthrene	190	180	J	190	280		190	340		200	100	J	NC	NC	NC
Anthracene	190	ND		190	52	J	190	59	J	200	ND		10,000,000	10,000,000	100,000
Di-n-Butylphthalate	190	ND		190	ND		190	ND		200	ND		5,700,000	10,000,000	100,000
Fluoranthene	190	420		190	660		190	610		200	200	J	2,300,000	10,000,000	100,000
Pyrene	190	350		190	550		190	520		200	160	J	1,700,000	10,000,000	100,000
Butylbenzylphthalate	190	88	J	190	ND		190	77	J	200	ND		NC	NC	NC
Benzo(a)Anthracene	190	190		190	310		190	280		200	91	J	900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	190	61	J	190	ND		190	160	J	200	100	J	49,000	210,000	100,000
Chrysene	190	240		190	370		190	340		200	110	J	9,000	40,000	500,000
Benzo(b)Fluoranthene	190	330		190	490		190	460		200	160	J	900	4,000	50,000
Benzo(k)Fluoranthene	74	120		76	200		75	170		80	54	J	900	4,000	500,000
Benzo(a)Pyrene	190	210		190	330		190	290		200	89	J	660	660	100,000
Indeno(1,2,3-cd)Pyrene	190	91	J	190	130	J	190	110	J	200	ND		900	4,000	500,000
Dibenzo(a,h)Anthracene	190	ND		190	ND		190	ND		200	ND		660	660	100,000
Benzo(g,h,i)Perylene	190	89	J	190	120	J	190	100	J	200	ND		NC	NC	NC
TOTAL TARGETED BNs: *		2,349			3,492			3,516			1,304		--	--	--
TOTAL NON-TARGETED BNs		518			2,645			2,169			3,410		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	0.56	3.6		0.57	3.4		0.56	4.2		0.6	2.2		20	20	NC
Copper	2.8	45		2.8	35		2.8	48		3	22		600	600	NC
Lead	11	160		11	180		11	210		12	79		400	600	NC
Zinc	5.6	210		5.7	280		5.6	450		6	130		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		NA	NA		NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-10			SB-10			SB-11			SB-11			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-10A			SS-10B			SS-11A			SS-11B					
BELL Sample Number:	90059-6010A			90059-6010B			90059-6011A			90059-6011B					
Laboratory Sample Number:	AA29919			AA29920			AA29921			AA29922					
Depth (Feet BGS):	0'-0.5'			2.0'-2.5'			0'-0.5'			2.0'-2.5'					
Date Sampled:	4/10/95			4/10/95			4/10/95			4/10/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		33.3			33.3			33.3			33.3		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	210	80	J	190	ND		200	ND		190	78	J	230,000	4,200,000	100,000
2-Methylnaphthalene	210	ND		190	ND		200	ND		190	ND		NC	NC	NC
Acenaphthylene	210	180	J	190	41	J	200	43	J	190	56	J	NC	NC	NC
Acenaphthene	210	150	J	190	ND		200	66	J	190	150	J	3,400,000	10,000,000	100,000
Dibenzofuran	210	86	J	190	ND		200	ND		190	80	J	NC	NC	NC
Diethylphthalate	210	97	J	190	79	J	200	200		190	180	J	10,000,000	10,000,000	50,000
Fluorene	210	180	J	190	ND		200	ND		190	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	210	ND		190	ND		200	ND		190	ND		NC	NC	NC
Phenanthrene	210	1,900		190	350		200	770		190	1,200		NC	NC	NC
Anthracene	210	340		190	66	J	200	160	J	190	280		10,000,000	10,000,000	100,000
Di-n-Butylphthalate	210	190	J	190	58	J	200	60	J	190	56	J	5,700,000	10,000,000	100,000
Fluoranthene	210	3,500		190	860		200	1,700		190	1,700		2,300,000	10,000,000	100,000
Pyrene	210	4,900		190	750		200	1,900		190	1,700		1,700,000	10,000,000	100,000
Butylbenzylphthalate	210	1,100		190	54	J	200	420		190	300		NC	NC	NC
Benzo(a)Anthracene	210	1,800		190	410		200	1,000		190	800		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	210	1,200		190	140	J	200	470		190	320		49,000	210,000	100,000
Chrysene	210	2,200		190	480		200	1,000		190	820		9,000	40,000	500,000
Benzo(b)Fluoranthene	210	3,600		190	600		200	1,500		190	1,200		900	4,000	50,000
Benzo(k)Fluoranthene	85	1,200		77	220		80	590		76	500		900	4,000	500,000
Benzo(a)Pyrene	210	1,900		190	400		200	950		190	760		660	660	100,000
Indeno(1,2,3-cd)Pyrene	210	730		190	170	J	200	290		190	250		900	4,000	500,000
Dibenzo(a,h)Anthracene	210	170	J	190	51	J	200	91	J	190	75	J	660	660	100,000
Benzo(g,h,i)Perylene	210	720		190	160	J	200	280		190	240		NC	NC	NC
TOTAL TARGETED BNs *		26,203			4,889			11,490			10,725		--	--	--
TOTAL NON-TARGETED BNs		7,557			3,100			10,272			4,162		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	0.64	7.8		0.57	2.4		0.6	10		0.57	7.6		20	20	NC
Copper	3.2	120		2.9	40		3	81		2.8	84		600	600	NC
Lead	13	930		11	140		12	320		11	300		400	600	NC
Zinc	6.4	500		5.7	160		6	200		5.7	190		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		NA	NA		NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES
COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-12		SB-12		SB-13		SB-13		Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-12A		SS-12B		SS-13A		SS-13B				
BELL Sample Number:	90059-6012A		90059-6012B		90059-6013A		90059-6013B				
Laboratory Sample Number:	AA29889		AA29890		AA29891		AA29892				
Depth (Feet BGS):	0'-0.5'		2.0'-2.5'		0'-0.5'		2.0'-2.5'				
Date Sampled:	4/5/95		4/5/95		4/5/95		4/5/95				
	PQL	CONC Q	PQL	CONC Q	PQL	CONC Q	PQL	CONC Q			
Dilution Factors:		33.3		33.3		100		1,000	–	–	–
COMPOUNDS (units)		(ug/kg)		(ug/kg)		(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	190	ND	210	ND	620	ND	5,400	ND	230,000	4,200,000	100,000
2-Methylnaphthalene	190	ND	210	ND	620	ND	5,400	ND	NC	NC	NC
Acenaphthylene	190	ND	210	ND	620	220 J	5,400	2,500 J	NC	NC	NC
Acenaphthene	190	ND	210	ND	620	380 J	5,400	ND	3,400,000	10,000,000	100,000
Dibenzofuran	190	ND	210	ND	620	230 J	5,400	ND	NC	NC	NC
Diethylphthalate	190	ND	210	ND	620	ND	5,400	ND	10,000,000	10,000,000	50,000
Fluorene	190	ND	210	ND	620	ND	5,400	ND	2,300,000	10,000,000	100,000
4-Nitroaniline	190	ND	210	ND	620	ND	5,400	ND	NC	NC	NC
Phenanthrene	190	ND	210	ND	620	5,100	5,400	36,000	NC	NC	NC
Anthracene	190	ND	210	ND	620	970	5,400	6,100	10,000,000	10,000,000	100,000
Di-n-Butylphthalate	190	ND	210	ND	620	ND	5,400	ND	5,700,000	10,000,000	100,000
Fluoranthene	190	55 J	210	ND	620	7,500	5,400	55,000	2,300,000	10,000,000	100,000
Pyrene	190	ND	210	ND	620	6,400	5,400	45,000	1,700,000	10,000,000	100,000
Butylbenzylphthalate	190	ND	210	ND	620	270 J	5,400	ND	NC	NC	NC
Benzo(a)Anthracene	190	ND	210	ND	620	3,700	5,400	24,000	900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	190	ND	210	ND	620	330 J	5,400	ND	49,000	210,000	100,000
Chrysene	190	ND	210	ND	620	3,500	5,400	20,000	9,000	40,000	500,000
Benzo(b)Fluoranthene	190	38 J	210	ND	620	4,300	5,400	24,000	900	4,000	50,000
Benzo(k)Fluoranthene	75	ND	85	ND	250	1,300	2,200	8,400	900	4,000	500,000
Benzo(a)Pyrene	190	ND	210	ND	620	3,400	5,400	19,000	660	660	100,000
Indeno(1,2,3-cd)Pyrene	190	ND	210	ND	620	1,600	5,400	10,000	900	4,000	500,000
Dibenzo(a,h)Anthracene	190	ND	210	ND	620	420 J	5,400	2,300 J	660	660	100,000
Benzo(g,h,i)Perylene	190	ND	210	ND	620	1,900	5,400	11,000	NC	NC	NC
TOTAL TARGETED BNs *		93		0		41,720		263,300	–	–	–
TOTAL NON-TARGETED BNs		3,218		640		7,902		26,088	–	–	–
COMPOUNDS (units)	MDL	(mg/kg)	MDL	(mg/kg)	MDL	(mg/kg)	MDL	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	0.56	1.4	0.64	1.8	0.62	8.5	0.54	8.1	20	20	NC
Copper	2.8	18	3.2	13	3.1	250	2.7	63	600	600	NC
Lead	11	34	13	ND	12	610	11	130	400	600	NC
Zinc	5.6	32	6.4	25	6.2	550	5.4	240	1,500	1,500	NC
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
– - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES
COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-14			SS-14			SS-15			SB-15			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-14A			SS-14B			SS-15A			SS-15B					
BELL Sample Number:	90059-6014A			90059-6014B			90059-6015A			90059-6015B					
Laboratory Sample Number:	AA29893			AA29894			AA29895			AA29896					
Depth (Feet BGS):	0'-0.5'			2.0'-2.5'			0'-0.5'			2.0'-2.5'					
Date Sampled:	4/5/95			4/5/95			4/5/95			4/5/95					
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		300			33.3			100			33.3		--	--	--
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	1,700	850	J	210	ND		540	170	J	190	86	J	230,000	4,200,000	100,000
2-Methylnaphthalene	1,700	ND		210	ND		540	ND		190	ND		NC	NC	NC
Acenaphthylene	1,700	570	J	210	ND		540	200	J	190	ND		NC	NC	NC
Acenaphthene	1,700	2,000		210	88	J	540	340	J	190	210		3,400,000	10,000,000	100,000
Dibenzofuran	1,700	1,000	J	210	ND		540	180	J	190	120	J	NC	NC	NC
Diethylphthalate	1,700	ND		210	ND		540	ND		190	ND		10,000,000	10,000,000	50,000
Fluorene	1,700	1,700	J	210	ND		540	ND		190	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	1,700	ND		210	ND		540	ND		190	ND		NC	NC	NC
Phenanthrene	1,700	18,000		210	750		540	3,400		190	1,800		NC	NC	NC
Anthracene	1,700	3,900		210	150	J	540	710		190	380		10,000,000	10,000,000	100,000
Di-n-Butylphthalate	1,700	ND		210	ND		540	ND		190	ND		5,700,000	10,000,000	100,000
Fluoranthene	1,700	23,000		210	1,000		540	5,600		190	1,900		2,300,000	10,000,000	100,000
Pyrene	1,700	19,000		210	810		540	4,400		190	1,600		1,700,000	10,000,000	100,000
Butylbenzylphthalate	1,700	ND		210	ND		540	280	J	190	ND		NC	NC	NC
Benzo(a)Anthracene	1,700	10,000		210	400		540	2,600		190	720		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	1,700	650	J	210	85	J	540	660		190	49	J	49,000	210,000	100,000
Chrysene	1,700	9,500		210	420		540	2,500		190	700		9,000	40,000	500,000
Benzo(b)Fluoranthene	1,700	11,000		210	450		540	3,400		190	940		900	4,000	50,000
Benzo(k)Fluoranthene	680	4,100		84	200		220	1,300		76	340		900	4,000	500,000
Benzo(a)Pyrene	1,700	9,100		210	390		540	2,500		190	660		660	660	100,000
Indeno(1,2,3-cd)Pyrene	1,700	4,800		210	220		540	950		190	190	J	900	4,000	500,000
Dibenzo(a,h)Anthracene	1,700	1,200	J	210	62	J	540	220	J	190	ND		660	660	100,000
Benzo(g,h,i)Perylene	1,700	4,900		210	230		540	890		190	180	J	NC	NC	NC
TOTAL TARGETED BNs: *		125,270			5,255			30,300			9,875		--	--	--
TOTAL NON-TARGETED BNs		24,886			3,246			6,881			3,519		--	--	--
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	1.1	9.4		0.63	2.1		0.54	3.9		0.57	5.6		20	20	NC
Copper	2.8	110		3.2	12		2.7	69		2.8	26		600	600	NC
Lead	11	290		13	34		11	160		11	120		400	600	NC
Zinc	5.7	510		6.3	52		5.4	270		5.7	68		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		NA	NA		NC	NC	NC

Notes
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligram per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-5

SUMMARY OF BASE NEUTRAL AND METAL ANALYTICAL RESULTS OF 36 SOIL BORING SAMPLES
COLLECTED ON APRIL 5 & 10, 1995
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Soil Boring Designation:	SB-16			SB-16			SB-17 Background A			SB-17 Background B			Residential Direct Contact Soil Cleanup Criteria	Non-Residential Direct Contact Soil Cleanup Criteria	Impact to Ground Water Soil Cleanup Criteria
Sample Designation:	SS-16A			SS-16B			90059-5018A			90059-5018B					
BELL Sample Number:	90059-5016A			90059-5016B			AA29923			AA29924					
Laboratory Sample Number:	AA29897			AA29898			0'-0.5'			2.0'-2.5'					
Depth (Feet BGS):	0'-0.5'			2.0'-2.5'			4/10/95			4/10/95					
Date Sampled:	4/5/95			4/5/95											
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q			
Dilution Factors:		100			33.3			33.3			33.3		–	–	–
COMPOUNDS (units)		(ug/kg)			(ug/kg)			(ug/kg)			(ug/kg)		(ug/kg)	(ug/kg)	(ug/kg)
Naphthalene	580	ND		190	ND		180	47	J	190	ND		230,000	4,200,000	100,000
2-Methylnaphthalene	580	ND		190	ND		180	ND		190	ND		NC	NC	NC
Acenaphthylene	580	ND		190	61	J	180	ND		190	ND		NC	NC	NC
Acenaphthene	580	ND		190	ND		180	230		190	97	J	3,400,000	10,000,000	100,000
Dibenzofuran	580	ND		190	ND		180	100	J	190	ND		NC	NC	NC
Diethylphthalate	580	ND		190	ND		180	ND		190	ND		10,000,000	10,000,000	50,000
Fluorene	580	NO		190	ND		180	200		190	ND		2,300,000	10,000,000	100,000
4-Nitroaniline	580	ND		190	420		180	ND		190	ND		NC	NC	NC
Phenanthrene	580	1,500		190	710		180	1,800		190	840		NC	NC	NC
Anthracene	580	320	J	190	180	J	180	440		190	180	J	10,000,000	10,000,000	100,000
Di-n-Butylphthalate	580	3,100		190	330		180	45	J	190	ND		5,700,000	10,000,000	100,000
Fluoranthene	580	2,300		190	1,500		180	2,700		190	1,300		2,300,000	10,000,000	100,000
Pyrene	580	1,700		190	1,300		180	3,100		190	1,400		1,700,000	10,000,000	100,000
Butylbenzylphthalate	580	330	J	190	69	J	180	1,400		190	480		NC	NC	NC
Benzo(a)Anthracene	580	1,000		190	790		180	1,400		190	630		900	4,000	500,000
Bis(2-Ethylhexyl)Phthalate	580	600		190	280		180	1,700		190	720		49,000	210,000	100,000
Chrysene	580	1,100		190	850		180	1,400		190	630		9,000	40,000	500,000
Benzo(b)Fluoranthene	580	1,500		190	1,400		180	2,100		190	960		900	4,000	50,000
Benzo(k)Fluoranthene	230	670		76	440		72	740		77	300		900	4,000	500,000
Benzo(a)Pyrene	580	1,100		190	840		180	1,300		190	580		660	660	100,000
Indeno(1,2,3-cd)Pyrene	580	360	J	190	270		180	420		190	170	J	900	4,000	500,000
Dibenzo(a,h)Anthracene	580	ND		190	90	J	180	110	J	190	ND		660	660	100,000
Benzo(g,h,i)Perylene	580	310	J	190	260		180	380		190	160	J	NC	NC	NC
TOTAL TARGETED BNs: *		15,890			9,790			19,612			8,447		–	–	–
TOTAL NON-TARGETED BNs:		2,326			7,833			4,546			5,052		–	–	–
COMPOUNDS (units)	MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		MDL	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)
Arsenic	0.58	4.5		0.57	5.5		0.54	4.2		0.57	3.2		20	20	NC
Copper	2.9	43		2.8	300		2.7	41		2.9	26		600	600	NC
Lead	12	210		11	860		11	220		11	90		400	600	NC
Zinc	5.8	570		23	2,700		5.4	180		5.7	96		1,500	1,500	NC
Aluminum	NA	NA		NA	NA		NA	NA		460	13,000		NC	NC	NC

Notes:
ND - Not Detected
NA - Not Analyzed
Q - Qualifier
PQL - Practical Quantitative Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
– - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/kg) - Micrograms per kilogram
(mg/kg) - Milligrams per kilogram
BGS - Below ground surface

Presented above are those compounds which are present in at least one sample

TABLE 4-6

SUMMARY OF ALUMINUM ANALYTICAL RESULTS FOR 6 GROUND WATER SAMPLES
COLLECTED ON JUNE 7, 1993
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Sample Designation BELL Sample Number Laboratory Sample Number Date Sampled	MW-3 90059-2103 AA16568 6/7/93			MW-4 90059-2104 AA16569 6/7/93			MW-5 90059-2105 AA16570 6/7/93			MW-6 90059-2106 AA16571 6/7/93			MW-6(Dup) 90059-2107 AA16572 6/7/93			MW-10 90059-2112 AA16573 6/7/93			BEC-11S 90059-2113 AA16574 6/7/93			Field Blank 90059-1011 AA16577 6/7/93			Class II-A Ground Water Quality Standards
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	
METAL COMPOUND (units)		(mg/l)			(mg/l)			(mg/l)			(mg/l)			(mg/l)			(mg/l)			(mg/l)			(mg/l)		(mg/l)
Aluminum	0.20	2.4		0.20	1		0.20	47		0.20	5.6		0.20	6.4		0.20	2.2		0.20	4.9		0.20	ND		0.2

Notes:
ND - Not Detected
Q- Qualifier
MDL - Method Detection Limit
(mg/l) - Milligrams per liter

TABLE 4-7

SUMMARY OF VOLATILE ORGANIC ANALYTICAL RESULTS FOR 2 GROUND WATER SAMPLES
COLLECTED ON JUNE 7, 1993
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # EOG01-90059-02

Bell Environmental Consultants, Inc.

Sample Designation: BELL Sample Number: Laboratory Sample Number: Date Sampled:	MW-6 90059-2106 AA16571 6/7/93			MW-6(Dup) 90059-2107 AA16572 6/7/93			MW-10 90059-2112 AA16573 6/7/93			Trip Blank 90059-1010 AA16576 6/7/93			Field Blank 90059-1011 AA16577 6/7/93			Class II-A Ground Water Quality Standards
	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	MDL	CONC	Q	
Dilution Factor:		25			25			100			1			1		--
COMPOUNDS (units)		(ug/l)			(ug/l)			(ug/l)			(ug/l)			(ug/l)		(ug/l)
Methylene Chloride	250	61	JB	250	56	JB	1,000	210	JB	10	1	JB	10	5	JB	2
Chloroform	130	ND		130	ND		500	ND		5	1	J	5	ND		6
Benzene	130	1,600		130	1,600		500	990		5	ND		5	ND		0.2
Toluene	130	220		130	210		500	3,200		5	ND		5	ND		1000
Ethylbenzene	130	160		130	140		500	2,800		5	ND		5	ND		700
m&p-Xylenes	130	220		130	210		500	4,300		5	ND		5	ND		40
o-Xylene	130	75	J	130	66	J	500	2,300		5	ND		5	ND		(with above)
TOTAL TARGETED VOs: *		2,275			2,226			13,590			1			5		--
TOTAL NON-TARGETED VOs:		1,850			1,675			8,200			0			0		--

Notes:
ND - Not Detected
MDL - Method Detection Limit
J - Compound detected below minimum detection limit
B - Compound detected in blank as well as sample
NC - No criteria has been established for this compound
-- - Not applicable
* - Total includes "J" results but excludes "B" results
(ug/l) - Micrograms per liter

Presented above are those compounds which are present in at least one sample.

TABLE 4-8

SUMMARY OF VOLATILE ORGANIC ANALYTICAL RESULTS FOR 3 GROUND WATER SAMPLES
COLLECTED ON MAY 10, 1994
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Sample Designation: / BELL Sample Number: / Laboratory Sample Number: / Date Sampled:	MW-10 90059-2201 AA23389 5/10/94			BEC-12S 90059-2202 AA23390 5/10/94			BEC-12S (Dup) 90059-2203 AA23391 5/10/94			MW-6 90059-2204 AA23393 5/10/94			Field Blank 90059-1201 AA23392 5/10/94			Trip Blank 90059-1202 AA23394 5/10/94			Class II-A Ground Water Quality Standards
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	
Dilution Factor:		100			10			5			50			1			1		--
COMPOUNDS (units)		(ug/l)			(ug/l)			(ug/l)			(ug/l)			(ug/l)			(ug/l)		(ug/l)
Vinyl Chloride	500	ND		50	460		25	490		250	ND		5	ND		5	ND		0.08
Methylene Chloride	200	140	JB	20	23	B	10	36	B	100	94	JB	2	22	B	2	8	B	2
Acetone	2,000	ND		200	ND		100	30	J	1,000	ND		20	47		20	37		700
1,1-Dichloroethane	500	ND		50	36	J	25	31		250	ND		5	ND		5	ND		70
Chloroform	500	ND		50	ND		25	ND		250	ND		5	ND		5	2	J	6
Trichloroethene	100	ND		10	24		5	23		50	ND		1	ND		1	ND		1
Benzene	100	310		10	ND		5	ND		50	1,400		1	ND		1	ND		0.2
Toluene	500	2,300		50	290		25	240		250	78	J	5	ND		5	ND		1,000
Ethylbenzene	500	3,100		50	15	J	25	13	J	250	130	J	5	ND		5	ND		700
m&p-Xylenes	500	8,900		50	21	J	25	16	J	250	170	J	5	ND		5	ND		40
o-Xylene	500	2,500		50	23	J	25	18	J	250	ND		5	ND		5	ND		(with above)
1,4-Dichlorobenzene	500	ND		50	10	J	25	ND		250	52	J	5	ND		5	ND		75
TOTAL TARGETED VOs: *		17,250			902			897			1,924			69			47		--
TOTAL NON-TARGETED VOs:		9,800			1,470			1,475			1,600			12			10		--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(ug/l) - Micrograms per liter
* - Total includes "J" results but excludes "B" results
-- - Not Applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-9

SUMMARY OF BASE NEUTRAL ANALYTICAL RESULTS FOR 1 GROUND WATER SAMPLE
COLLECTED ON MAY 10, 1994
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Sample Designation: BELL Sample Number: Laboratory Sample Number: Date Sampled:	BEC-12S 90059-2202 AA23390 05/10/94			BEC-12S (Dup) 90059-2203 AA23391 05/10/94			Field Blank 90059-1201 AA23392 05/10/94			Class II-A Ground Water Quality Standard
	PQL	CONC	Q	PQL	CONC	Q	PQL	CONC	Q	
Dilution Factor:		1.11			1.11			1.18		--
COMPOUNDS (units)		(ug/l)			(ug/l)			(ug/l)		(ug/l)
Bis(2-Ethylhexyl)Phthalate	6	1	JB	6	ND		6	ND		3
TOTAL TARGETED BNs:*		0			0			0		--
TOTAL NON-TARGETED BNs:		49			138			0		--

Notes:
PQL - Practical Quantitative Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
J - Indicates compound detected below the minimum detection limit at an estimated concentration
B - Indicates compound detected in the blank as well as the sample
NC - No soil cleanup criteria has been established by the NJDEP
(ug/l) - Micrograms per liter
* - Total includes "J" results but excludes "B" results
-- - Not applicable

Presented above are those compounds which are present in at least one sample.

TABLE 4-10

SUMMARY OF VOLATILE ORGANIC ANALYTICAL RESULTS FOR 1 GROUND WATER SAMPLE
COLLECTED ON NOVEMBER 7, 1994
AMMCO - KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT #EOG01-90059-02

Bell Environmental Consultants, Inc.

Sample Designation: BELL Sample Number: Laboratory Sample Number: Date Sampled:	BEC-12S 90059-2012 AA27211 11/7/94		BEC-12S (Dup) 90059-2013 AA27212 11/7/94		Field Blank 90059-1002 AA27214 11/7/94		Trip Blank 90059-1001 AA27213 11/7/94		Class II-A Ground Water Quality Standards
	MDL	CONC Q	MDL	CONC Q	MDL	CONC Q	MDL	CONC Q	
Dilution Factor:		5		5		1		1	–
COMPOUNDS (units)		(ug/l)		(ug/l)		(ug/l)		(ug/l)	(ug/l)
Vinyl Chloride	24	400	24	300	4.8	ND	4.8	ND	0.08
Methylene Chloride	4.7	32	4.7	32	0.94	ND	0.94	ND	2
1,1-Dichloroethane	1.5	13	1.5	12	0.31	ND	0.31	ND	70
Chloroform	2.8	ND	2.8	ND	0.55	1.2	0.55	1.7	6
Trichloroethene	1.6	7.8	1.6	4.9	0.33	ND	0.33	ND	1
TOTAL TARGETED VOs: *		452.8		348.9		1.2		1.7	–
TOTAL NON-TARGETED VOs:		15		15		8		16	–

Notes:
MDL - Method Detection Limit
CONC - Concentration
Q - Qualifier
ND - Not Detected
NC- No soil cleanup criteria has been established by the NJDEP
* - Total includes "J" results but excludes "B" results
-- - Not Applicable
(ug/l) - Micrograms per liter

Presented above are those compounds which are present in at least one sample.

TABLE 4-11

RESULTS OF LNAPL MEASUREMENT MARCH 1994 TO JANUARY 1995
AMMCO-KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # E0G01-90059-02

Bell Environmental Consultants, Inc.

Date	Well Designation	Product Thickness (Feet)
March 22, 1994	MW-1	0.03
	MW-9	0.01
April 26, 1994	MW-1	0.04
	MW-9	ND
	BEC-12S	ND
May 10, 1994	MW-8	0.5
	MW-9	0.1
May 24, 1994	MW-1	sheen only
	MW-8	0.29
	MW-9	sheen only
June 7, 1994	MW-1	sheen only
	MW-9	sheen only
	BEC-12S	ND
June 21, 1994	MW-1	0.01
	MW-9	0.02
July 5, 1994	MW-1	0.01
	MW-9	0.01
July 18, 1994	MW-1	0.03
	MW-8	0.02
	MW-9	0.08
August 29, 1994	MW-1	0.03
	MW-9	0.03
September 26, 1994	MW-1	0.01
	MW-9	0.05

Notes:
ND - Not Detected

TABLE 4-11

RESULTS OF LNAPL MEASUREMENT MARCH 1994 TO JANUARY 1995
AMMCO-KEARNY
KEARNY, HUDSON COUNTY, NEW JERSEY
BELL PROJECT # E0G01-90059-02

Bell Environmental Consultants, Inc.

Date	Well Designation	Product Thickness (Feet)
October 21, 1994	MW-1	ND
	MW-9	0.05
November 7, 1994	MW-1	sheen only
December 12, 1994	MW-1	0.02
	MW-7	0.25
	MW-8	0.12
January 16, 1995	MW-1	0.01
	MW-9	0.03
July 3, 1995	MW-1	sheen only
	MW-8	0.10
	MW-9	0.05
	BEC-12S	ND

Notes:
ND - Not Detected

GENERAL NOTICE LETTER
URGENT LEGAL MATTER
PROMPT REPLY NECESSARY
CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. Ivan Rosalsky, Chief Executive Officer
American Modern Metals Company
44 Passaic Street
Kearny, NJ 07032

RE: Diamond Alkali Superfund Site
Notice of Potential Liability for
Response Actions in the Lower Passaic River Study Area, New Jersey

Dear Mr. Rosalsky:

The United States Environmental Protection Agency ("EPA") is charged with responding to the release and/or threatened release of hazardous substances, pollutants, and contaminants into the environment and with enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9601 et seq. Accordingly, EPA is seeking your cooperation in an innovative approach to environmental remediation and restoration activities for the Lower Passaic River.

EPA has documented the release or threatened release of hazardous substances, pollutants and contaminants into the six-mile stretch of the river, known as the Passaic River Study Area, which is part of the Diamond Alkali Superfund Site ("Site") located in Newark, New Jersey. Based on the results of previous CERCLA remedial investigation activities and other environmental studies, including a reconnaissance study of the Passaic River conducted by the United States Army Corps of Engineers ("USACE"), EPA has further determined that contaminated sediments and other potential sources of hazardous substances exist along the entire 17-mile tidal reach of the Lower Passaic River. Thus, EPA has decided to expand the area of study to include the entire Lower Passaic River and its tributaries from Dundee Dam to Newark Bay ("Lower Passaic River Study Area").

By this letter, EPA is notifying American Modern Metals Company ("American Modern Metals") of its potential liability relating to the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a). Under CERCLA, potentially responsible parties ("PRPs") include current and past owners of a facility, as well as persons who arranged for the disposal or treatment of hazardous substances at the Site, or the transport of hazardous substances to the Site.

In recognition of our complementary roles, EPA has formed a partnership with USACE and the New Jersey Department of Transportation-Office of Maritime Resources ("OMR") ["the governmental partnership"] to identify and to address water quality improvement, remediation, and restoration opportunities in the 17-mile Lower Passaic River. This governmental partnership is consistent with a national Memorandum of Understanding ("MOU") executed on July 2, 2002 between EPA and USACE. This MOU calls for the two agencies to cooperate, where appropriate, on environmental remediation and restoration of degraded urban rivers and related resources. In agreeing to implement the MOU, the EPA and USACE will use their existing statutory and regulatory authorities in a coordinated manner. These authorities for EPA include CERCLA, the Clean Water Act, and the Resource Conservation and Recovery Act. The USACE's authority stems from the Water Resources Development Act ("WRDA"). WRDA allows for the use of some federal funds to pay for a portion of the USACE's approved projects related to ecosystem restoration.

For the first phase of the Lower Passaic River Restoration Project, the governmental partners are proceeding with an integrated five- to seven-year study to determine an appropriate remediation and restoration plan for the river. The study will involve investigation of environmental impacts and pollution sources, as well as evaluation of alternative actions, leading to recommendations of environmental remediation and restoration activities. This study is being conducted by EPA under the authority of CERCLA and by USACE and OMR, as local sponsor, under WRDA. EPA, USACE, and OMR are attempting to coordinate with the New Jersey Department of Environmental Protection and the Federal and State Natural Resource Trustee agencies. EPA, USACE, and OMR estimate that the study will cost approximately $20 million, with the WRDA and CERCLA shares being about $10 million each. EPA is seeking its share of the costs of the study from PRPs.

Based on information that EPA evaluated during the course of its investigation of the Site, EPA believes that hazardous substances were being released from American Modern Metals' facility located at 44 Passaic Avenue (a/k/a 25 Belgrove Drive) in Kearny, New Jersey, into the Lower Passaic River Study Area. Hazardous substances, pollutants and contaminants released from the facility into the river present a risk to the environment and the humans who may ingest contaminated fish and shellfish. Therefore, American Modern Metals may be potentially liable for response costs which the government may incur relating to the study of the Lower Passaic River. In addition, responsible parties may be required to pay damages for injury to, destruction of, or loss of natural resources, including the cost of assessing such damages.

Please note that, because EPA has a potential claim against you, you must include EPA as a creditor if you file for bankruptcy. You are also requested to preserve and retain any documents now in your Company's or its agents' possession or control, that relate in any manner to your facility or the Site or to the liability of any person under CERCLA for response actions or response costs at or in connection with the facility or the Site, regardless of any corporate document retention policy to the contrary.

Enclosed is a list of the other PRPs who have received Notice letters. This list represents EPA's findings on the identities of PRPs to date. We are continuing efforts to locate additional PRPs who have released hazardous substances, directly or indirectly, into the Lower Passaic River

Study Area. Exclusion from the list does not constitute a final determination by EPA concerning the liability of any party for the release or threat of release of hazardous substances at the Site. Be advised that notice of your potential liability at the Site may be forwarded to all parties on this list.

We request that you become a "cooperating party" for the Lower Passaic River Restoration Project. As a cooperating party, you, along with many other such parties, will be expected to fund EPA's share of the study costs. Upon completion of the study, it is expected that CERCLA and WRDA processes will be used to identify the required remediation and restoration programs, as well as the assignment of remediation and restoration costs. At this time, the commitments of the cooperating parties will apply only to the study. For those who choose not to cooperate, EPA may apply the CERCLA enforcement process, pursuant to Sections 106(a) and 107(a) of CERCLA, 42 U.S.C. §9606(a) and §9607(a) and other laws.

You may become a cooperating party by participating in the Cooperating Parties Group ("Group") that has already formed to provide EPA's funding for the Lower Passaic River Restoration Project. This cooperative response is embodied in an Administrative Order on Consent ("AOC"), copy enclosed. Notice of the AOC was published in the Federal Register on May 19, 2004 with EPA accepting comments through June 18, 2004. We strongly encourage you to contact the Group to discuss your participation. You may do so by contacting:

William H. Hyatt, Esq.
Common Counsel for the Lower Passaic River Study Area Cooperating Parties Group
Kirkpatrick & Lockhart LLP
One Newark Center, 10th Floor
Newark, New Jersey 07102
(973) 848-4045
whyatt@kl.com

Written notification should be provided to EPA and Mr. Hyatt documenting your intention to join the Group and settle with EPA no later than 30 calendar days from your receipt of this letter. It is EPA's intent to amend the AOC at a later date to reflect the settlement negotiations. EPA's written notification should be mailed to:

Kedari Reddy, Assistant Regional Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency
290 Broadway - 17th Floor
New York, New York 10007-1866

Pursuant to CERCLA Section 113(k), EPA must establish an administrative record that contains documents that form the basis of EPA's decision on the selection of a response action for a site. The administrative record files, which contain the documents related to the response action selected for this Site are located at EPA's Region 2 office (290 Broadway, New York, NY) on the 18th floor. You may call the Records Center at (212) 637-4308 to make an appointment to view the administrative record for the Diamond Alkali Site, Passaic River.

As you may be aware, on January 11, 2002, President Bush signed into law the Superfund Small Business Liability Relief and Brownfields Revitalization Act. This Act contains several exemptions and defenses to CERCLA liability, which we suggest that all parties evaluate. You may obtain a copy of the law via the Internet at http://www.epa.gov/swerosps/bf/sblrbra.htm and review EPA guidances regarding these exemptions at http://www.epa.gov/compliance/resources/policies/cleanup/superfund.

If you wish to discuss this further please contact Ms. Elizabeth Butler, Remedial Project Manager, at (212) 637-4396 or Ms. Kedari Reddy, Assistant Regional Counsel, at (212) 637-3106. Please note that all communications from attorneys should be directed to Ms. Reddy.

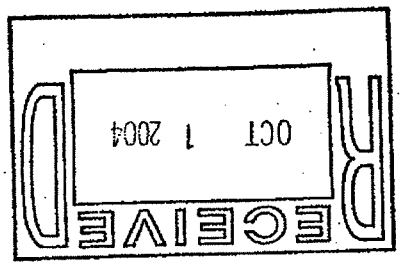
Sincerely yours,

George Pavlou, Director
Emergency and Remedial Response Division

Enclosures

cc: Alexa Richman-LaLonde, Esq.
Riker Danzig Scherer Hyland Perretti LLP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866



SEP 24 2004

GENERAL NOTICE LETTER
URGENT LEGAL MATTER
PROMPT REPLY NECESSARY
CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Steven Schwartz
for DiLorenzo Properties Company
401 East 74th Street
New York, NY 10021-3919

RE: Diamond Alkali Superfund Site
Notice of Potential Liability for
Response Actions in the Lower Passaic River Study Area, New Jersey

Dear Mr. Schwartz:

The United States Environmental Protection Agency ("EPA") is charged with responding to the release and/or threatened release of hazardous substances, pollutants, and contaminants into the environment and with enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9601 et seq. Accordingly, EPA is seeking your cooperation in an innovative approach to environmental remediation and restoration activities for the Lower Passaic River.

EPA has documented the release or threatened release of hazardous substances, pollutants and contaminants into the six-mile stretch of the river, known as the Passaic River Study Area, which is part of the Diamond Alkali Superfund Site ("Site") located in Newark, New Jersey. Based on the results of previous CERCLA remedial investigation activities and other environmental studies, including a reconnaissance study of the Passaic River conducted by the United States Army Corps of Engineers ("USACE"), EPA has further determined that contaminated sediments and other potential sources of hazardous substances exist along the entire 17-mile tidal reach of the Lower Passaic River. Thus, EPA has decided to expand the area of study to include the entire Lower Passaic River and its tributaries from Dundee Dam to Newark Bay ("Lower Passaic River Study Area").

By this letter, EPA is notifying DiLorenzo Properties Company ("DiLorenzo") of its potential liability relating to the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a). Under CERCLA, potentially responsible parties ("PRPs") include current and past owners of a facility,

as well as persons who arranged for the disposal or treatment of hazardous substances at the Site, or the transport of hazardous substances to the Site.

In recognition of our complementary roles, EPA has formed a partnership with USACE and the New Jersey Department of Transportation-Office of Maritime Resources ("OMR") ["the governmental partnership"] to identify and to address water quality improvement, remediation, and restoration opportunities in the 17-mile Lower Passaic River. This governmental partnership is consistent with a national Memorandum of Understanding ("MOU") executed on July 2, 2002 between EPA and USACE. This MOU calls for the two agencies to cooperate, where appropriate, on environmental remediation and restoration of degraded urban rivers and related resources. In agreeing to implement the MOU, the EPA and USACE will use their existing statutory and regulatory authorities in a coordinated manner. These authorities for EPA include CERCLA, the Clean Water Act, and the Resource Conservation and Recovery Act. The USACE's authority stems from the Water Resources Development Act ("WRDA"). WRDA allows for the use of some federal funds to pay for a portion of the USACE's approved projects related to ecosystem restoration.

For the first phase of the Lower Passaic River Restoration Project, the governmental partners are proceeding with an integrated five- to seven-year study to determine an appropriate remediation and restoration plan for the river. The study will involve investigation of environmental impacts and pollution sources, as well as evaluation of alternative actions, leading to recommendations of environmental remediation and restoration activities. This study is being conducted by EPA under the authority of CERCLA and by USACE and OMR, as local sponsor, under WRDA. EPA, USACE, and OMR are attempting to coordinate with the New Jersey Department of Environmental Protection and the Federal and State Natural Resource Trustee agencies. EPA, USACE, and OMR estimate that the study will cost approximately $20 million, with the WRDA and CERCLA shares being about $10 million each. EPA is seeking its share of the costs of the study from PRPs.

Based on information that EPA evaluated during the course of its investigation of the Site, EPA believes that hazardous substances were being released from DiLorenzo's facility located at 44 Passaic Avenue (aka 25 Belgrove Drive) in Kearny, New Jersey, into the Lower Passaic River Study Area. Hazardous substances, pollutants and contaminants released from the facility into the river present a risk to the environment and the humans who may ingest contaminated fish and shellfish. Therefore, DiLorenzo may be potentially liable for response costs which the government may incur relating to the study of the Lower Passaic River. In addition, responsible parties may be required to pay damages for injury to, destruction of, or loss of natural resources, including the cost of assessing such damages.

EPA is aware that the financial ability of some PRPs to contribute toward the payment of response costs at the Site may be substantially limited. If you believe, and can document, that you fall within that category, please inform Ms. Reddy and Mr. Hyatt in writing at the addresses identified in this letter. You will be asked to submit financial records including business and, possibly, personal federal income tax returns as well as audited financial statements to substantiate such a claim.

Please note that, because EPA has a potential claim against you, you must include EPA as a creditor if you file for bankruptcy. You are also requested to preserve and retain any documents now in your Company's or its agents' possession or control, that relate in any manner to your facility or the Site or to the liability of any person under CERCLA for response actions or response costs at or in connection with the facility or the Site, regardless of any corporate document retention policy to the contrary.

Enclosed is a list of the other PRPs who have received Notice letters. This list represents EPA's findings on the identities of PRPs to date. We are continuing efforts to locate additional PRPs who have released hazardous substances, directly or indirectly, into the Lower Passaic River Study Area. Exclusion from the list does not constitute a final determination by EPA concerning the liability of any party for the release or threat of release of hazardous substances at the Site. Be advised that notice of your potential liability at the Site may be forwarded to all parties on this list as well as to the Natural Resource Trustees.

We request that you become a "cooperating party" for the Lower Passaic River Restoration Project. As a cooperating party, you, along with many other such parties, will be expected to fund EPA's share of the study costs. Upon completion of the study, it is expected that CERCLA and WRDA processes will be used to identify the required remediation and restoration programs, as well as the assignment of remediation and restoration costs. At this time, the commitments of the cooperating parties will apply only to the study. For those who choose not to cooperate, EPA may apply the CERCLA enforcement process, pursuant to Sections 106(a) and 107(a) of CERCLA, 42 U.S.C. §9606(a) and §9607(a) and other laws.

You may become a cooperating party by participating in the Cooperating Parties Group ("Group") that has already formed to provide EPA's funding for the Lower Passaic River Restoration Project. This cooperative response is embodied in an Administrative Order on Consent ("AOC"), a copy of which can be obtained at the following web address: www.ourpassaic.org/home/aoc.pdf.

We strongly encourage you to review the AOC and contact the Group to discuss your participation. You may do so by contacting:

William H. Hyatt, Esq.
Common Counsel for the Lower Passaic River Study Area Cooperating Parties Group
Kirkpatrick & Lockhart LLP
One Newark Center, 10th Floor
Newark, New Jersey 07102
(973) 848-4045
whyatt@kl.com

Written notification should be provided to EPA and Mr. Hyatt documenting your intention to join the Group and settle with EPA no later than 30 calendar days from your receipt of this letter. It is EPA's intent to amend the AOC at a later date to reflect the settlement negotiations. EPA's written notification should be mailed to:

Kedari Reddy, Assistant Regional Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency
290 Broadway - 17th Floor
New York, New York 10007-1866

Pursuant to CERCLA Section 113(k), EPA must establish an administrative record that contains documents that form the basis of EPA's decision on the selection of a response action for a site. The administrative record files, which contain the documents related to the response action selected for this Site are located at EPA's Region 2 office (290 Broadway, New York, NY) on the 18th floor. You may call the Records Center at (212) 637-4308 to make an appointment to view the administrative record for the Diamond Alkali Site, Passaic River.

As you may be aware, on January 11, 2002, President Bush signed into law the Superfund Small Business Liability Relief and Brownfields Revitalization Act. This Act contains several exemptions and defenses to CERCLA liability, which we suggest that all parties evaluate. You may obtain a copy of the law via the Internet at http://www.epa.gov/swerosps/bf/sblrbra.htm and review EPA guidances regarding these exemptions at http://www.epa.gov/compliance/resources/policies/cleanup/superfund.

Inquiries by counsel or inquiries of a legal nature should be directed to Ms. Reddy at (212) 637-3106. Questions of a technical nature should be directed to Elizabeth Butler, Remedial Project Manager, at (212) 637-4396.

Sincerely yours,

William McCabe

George Pavlou, Director
Emergency and Remedial Response Division

Enclosures

cc: Steven R. Gray, Esq.
Waters, McPherson, McNeill

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

AUG 13 2004

GENERAL NOTICE LETTER
URGENT LEGAL MATTER
PROMPT REPLY NECESSARY
CERTIFIED MAIL-RETURN RECEIPT REQUESTED

President/Legal Officer
Kearny Industrial Associates, L.P.
25 Belgrove Drive
Kearny, NJ 07032-1502

RE: Diamond Alkali Superfund Site
Notice of Potential Liability for
Response Actions in the Lower Passaic River Study Area, New Jersey

Dear Mr. President:

The United States Environmental Protection Agency ("EPA") is charged with responding to the release and/or threatened release of hazardous substances, pollutants, and contaminants into the environment and with enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9601 et seq. Accordingly, EPA is seeking your cooperation in an innovative approach to environmental remediation and restoration activities for the Lower Passaic River.

EPA has documented the release or threatened release of hazardous substances, pollutants and contaminants into the six-mile stretch of the river, known as the Passaic River Study Area, which is part of the Diamond Alkali Superfund Site ("Site") located in Newark, New Jersey. Based on the results of previous CERCLA remedial investigation activities and other environmental studies, including a reconnaissance study of the Passaic River conducted by the United States Army Corps of Engineers ("USACE"), EPA has further determined that contaminated sediments and other potential sources of hazardous substances exist along the entire 17-mile tidal reach of the Lower Passaic River. Thus, EPA has decided to expand the area of study to include the entire Lower Passaic River and its tributaries from Dundee Dam to Newark Bay ("Lower Passaic River Study Area").

By this letter, EPA is notifying Kearny Industrial Associates, L.P. ("Kearny Industrial") of its potential liability relating to the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a). Under CERCLA, potentially responsible parties ("PRPs") include current and past owners of a facility, as well as persons who arranged for the disposal or treatment of hazardous

substances at the Site, or the transport of hazardous substances to the Site.

In recognition of our complementary roles, EPA has formed a partnership with USACE and the New Jersey Department of Transportation-Office of Maritime Resources ("OMR") ["the governmental partnership"] to identify and to address water quality improvement, remediation, and restoration opportunities in the 17-mile Lower Passaic River. This governmental partnership is consistent with a national Memorandum of Understanding ("MOU") executed on July 2, 2002 between EPA and USACE. This MOU calls for the two agencies to cooperate, where appropriate, on environmental remediation and restoration of degraded urban rivers and related resources. In agreeing to implement the MOU, the EPA and USACE will use their existing statutory and regulatory authorities in a coordinated manner. These authorities for EPA include CERCLA, the Clean Water Act, and the Resource Conservation and Recovery Act. The USACE's authority stems from the Water Resources Development Act ("WRDA"). WRDA allows for the use of some federal funds to pay for a portion of the USACE's approved projects related to ecosystem restoration.

For the first phase of the Lower Passaic River Restoration Project, the governmental partners are proceeding with an integrated five- to seven-year study to determine an appropriate remediation and restoration plan for the river. The study will involve investigation of environmental impacts and pollution sources, as well as evaluation of alternative actions, leading to recommendations of environmental remediation and restoration activities. This study is being conducted by EPA under the authority of CERCLA and by USACE and OMR, as local sponsor, under WRDA. EPA, USACE, and OMR are attempting to coordinate with the New Jersey Department of Environmental Protection and the Federal and State Natural Resource Trustee agencies. EPA, USACE, and OMR estimate that the study will cost approximately $20 million, with the WRDA and CERCLA shares being about $10 million each. EPA is seeking its share of the costs of the study from PRPs.

Based on information that EPA evaluated during the course of its investigation of the Site, EPA believes that hazardous substances were being released from Kearny Industrial's facility located at 44 Passaic Avenue (aka 25 Belgrove Drive) in Kearny, New Jersey, into the Lower Passaic River Study Area. Hazardous substances, pollutants and contaminants released from the facility into the river present a risk to the environment and the humans who may ingest contaminated fish and shellfish. Therefore, Kearny Industrial may be potentially liable for response costs which the government may incur relating to the study of the Lower Passaic River. In addition, responsible parties may be required to pay damages for injury to, destruction of, or loss of natural resources, including the cost of assessing such damages.

EPA is aware that the financial ability of some PRPs to contribute toward the payment of response costs at the Site may be substantially limited. If you believe, and can document, that you fall within that category, please inform Ms. Reddy and Mr. Hyatt at the addresses located towards the end of this letter. You will be asked to submit financial records including business and, possibly, personal federal income tax returns as well as audited financial statements to substantiate such a claim.

Please note that, because EPA has a potential claim against you, you must include EPA as a creditor if you file for bankruptcy. You are also requested to preserve and retain any documents now in your Company's or its agents' possession or control, that relate in any manner to your facility or the Site or to the liability of any person under CERCLA for response actions or response costs at or in connection with the facility or the Site, regardless of any corporate document retention policy to the contrary.

Enclosed is a list of the other PRPs who have received Notice letters. This list represents EPA's findings on the identities of PRPs to date. We are continuing efforts to locate additional PRPs who have released hazardous substances, directly or indirectly, into the Lower Passaic River Study Area. Exclusion from the list does not constitute a final determination by EPA concerning the liability of any party for the release or threat of release of hazardous substances at the Site. Be advised that notice of your potential liability at the Site may be forwarded to all parties on this list.

We request that you become a "cooperating party" for the Lower Passaic River Restoration Project. As a cooperating party, you, along with many other such parties, will be expected to fund EPA's share of the study costs. Upon completion of the study, it is expected that CERCLA and WRDA processes will be used to identify the required remediation and restoration programs, as well as the assignment of remediation and restoration costs. At this time, the commitments of the cooperating parties will apply only to the study. For those who choose not to cooperate, EPA may apply the CERCLA enforcement process, pursuant to Sections 106(a) and 107(a) of CERCLA, 42 U.S.C. §9606(a) and §9607(a) and other laws.

You may become a cooperating party by participating in the Cooperating Parties Group ("Group") that has already formed to provide EPA's funding for the Lower Passaic River Restoration Project. This cooperative response is embodied in an Administrative Order on Consent ("AOC"), copy enclosed. Notice of the AOC was published in the Federal Register on May 19, 2004, and the effective date of the AOC was June 22, 2004. We strongly encourage you to contact the Group to discuss your participation. You may do so by contacting:

William H. Hyatt, Esq.
Common Counsel for the Lower Passaic River Study Area Cooperating Parties Group
Kirkpatrick & Lockhart LLP
One Newark Center, 10th Floor
Newark, New Jersey 07102
(973) 848-4045
whyatt@kl.com

Written notification should be provided to EPA and Mr. Hyatt documenting your intention to join the Group and settle with EPA no later than 30 calendar days from your receipt of this letter. It is EPA's intent to amend the AOC at a later date to reflect the settlement negotiations. EPA's written notification should be mailed to:

Kedari Reddy, Assistant Regional Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency
290 Broadway - 17th Floor
New York, New York 10007-1866

Pursuant to CERCLA Section 113(k), EPA must establish an administrative record that contains documents that form the basis of EPA's decision on the selection of a response action for a site. The administrative record files, which contain the documents related to the response action selected for this Site are located at EPA's Region 2 office (290 Broadway, New York, NY) on the 18th floor. You may call the Records Center at (212) 637-4308 to make an appointment to view the administrative record for the Diamond Alkali Site, Passaic River.

As you may be aware, on January 11, 2002, President Bush signed into law the Superfund Small Business Liability Relief and Brownfields Revitalization Act. This Act contains several exemptions and defenses to CERCLA liability, which we suggest that all parties evaluate. You may obtain a copy of the law via the Internet at http://www.epa.gov/swerosps/bf/sblrbra.htm and review EPA guidances regarding these exemptions at http://www.epa.gov/compliance/resources/policies/cleanup/superfund.

If you wish to discuss this further please contact Ms. Elizabeth Butler, Remedial Project Manager, at (212) 637-4396 or Ms. Kedari Reddy, Assistant Regional Counsel, at (212) 637-3106. Please note that all communications from attorneys should be directed to Ms. Reddy.

Sincerely yours,

John S Frisco

for George Pavlou, Director
Emergency and Remedial Response Division

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

SEP 20 2004

GENERAL NOTICE LETTER
URGENT LEGAL MATTER
PROMPT REPLY NECESSARY
CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Enrique Sordo, Vice President
Marshall Clark Manufacturing Corporation
20-40 Marshall Street
Kearny, NJ 07032

RE: Diamond Alkali Superfund Site
Notice of Potential Liability for
Response Actions in the Lower Passaic River Study Area, New Jersey

Dear Mr. Sordo:

The United States Environmental Protection Agency ("EPA") is charged with responding to the release and/or threatened release of hazardous substances, pollutants, and contaminants into the environment and with enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9601 et seq. Accordingly, EPA is seeking your cooperation in an innovative approach to environmental remediation and restoration activities for the Lower Passaic River.

EPA has documented the release or threatened release of hazardous substances, pollutants and contaminants into the six-mile stretch of the river, known as the Passaic River Study Area, which is part of the Diamond Alkali Superfund Site ("Site") located in Newark, New Jersey. Based on the results of previous CERCLA remedial investigation activities and other environmental studies, including a reconnaissance study of the Passaic River conducted by the United States Army Corps of Engineers ("USACE"), EPA has further determined that contaminated sediments and other potential sources of hazardous substances exist along the entire 17-mile tidal reach of the Lower Passaic River. Thus, EPA has decided to expand the area of study to include the entire Lower Passaic River and its tributaries from Dundee Dam to Newark Bay ("Lower Passaic River Study Area").

By this letter, EPA is notifying Marshall Clark Manufacturing Corp. ("Marshall Clark") of its potential liability relating to the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a). Under CERCLA, potentially responsible parties ("PRPs") include current and past owners of a facility, as well as persons who arranged for the disposal or treatment of hazardous substances at the Site, or the transport of hazardous substances to the Site.

Please note that, because EPA has a potential claim against you, you must include EPA as a creditor if you file for bankruptcy. You are also requested to preserve and retain any documents now in your Company's or its agents' possession or control, that relate in any manner to your facility or the Site or to the liability of any person under CERCLA for response actions or response costs at or in connection with the facility or the Site, regardless of any corporate document retention policy to the contrary.

Enclosed is a list of the other PRPs who have received Notice letters. This list represents EPA's findings on the identities of PRPs to date. We are continuing efforts to locate additional PRPs who have released hazardous substances, directly or indirectly, into the Lower Passaic River Study Area. Exclusion from the list does not constitute a final determination by EPA concerning the liability of any party for the release or threat of release of hazardous substances at the Site. Be advised that notice of your potential liability at the Site may be forwarded to all parties on this list as well as to the Natural Resource Trustees.

We request that you become a "cooperating party" for the Lower Passaic River Restoration Project. As a cooperating party, you, along with many other such parties, will be expected to fund EPA's share of the study costs. Upon completion of the study, it is expected that CERCLA and WRDA processes will be used to identify the required remediation and restoration programs, as well as the assignment of remediation and restoration costs. At this time, the commitments of the cooperating parties will apply only to the study. For those who choose not to cooperate, EPA may apply the CERCLA enforcement process, pursuant to Sections 106(a) and 107(a) of CERCLA, 42 U.S.C. §9606(a) and §9607(a) and other laws.

You may become a cooperating party by participating in the Cooperating Parties Group ("Group") that has already formed to provide EPA's funding for the Lower Passaic River Restoration Project. This cooperative response is embodied in an Administrative Order on Consent ("AOC"), a copy of which can be obtained at the following web address: www.ourpassaic.org/home/aoc.pdf.

We strongly encourage you to review the AOC and contact the Group to discuss your participation. You may do so by contacting:

William H. Hyatt, Esq.
Common Counsel for the Lower Passaic River Study Area Cooperating Parties Group
Kirkpatrick & Lockhart LLP
One Newark Center, 10th Floor
Newark, New Jersey 07102
(973) 848-4045
whyatt@kl.com

Written notification should be provided to EPA and Mr. Hyatt documenting your intention to join the Group and settle with EPA no later than 30 calendar days from your receipt of this letter. It is EPA's intent to amend the AOC at a later date to reflect the settlement negotiations. EPA's written notification should be mailed to:

Kedari Reddy, Assistant Regional Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency
290 Broadway - 17th Floor
New York, New York 10007-1866

Pursuant to CERCLA Section 113(k), EPA must establish an administrative record that contains documents that form the basis of EPA's decision on the selection of a response action for a site. The administrative record files, which contain the documents related to the response action selected for this Site are located at EPA's Region 2 office (290 Broadway, New York, NY) on the 18th floor. You may call the Records Center at (212) 637-4308 to make an appointment to view the administrative record for the Diamond Alkali Site, Passaic River.

As you may be aware, on January 11, 2002, President Bush signed into law the Superfund Small Business Liability Relief and Brownfields Revitalization Act. This Act contains several exemptions and defenses to CERCLA liability, which we suggest that all parties evaluate. You may obtain a copy of the law via the Internet at http://www.epa.gov/swerosps/bf/sblrbra.htm and review EPA guidances regarding these exemptions at http://www.epa.gov/compliance/resources/policies/cleanup/superfund.

Inquiries by counsel or inquiries of a legal nature should be directed to Ms. Reddy at (212) 637-3106. Questions of a technical nature should be directed to Elizabeth Butler, Remedial Project Manager, at (212) 637-4396.

Sincerely yours,

William McCabe

George Pavlou, Director
Emergency and Remedial Response Division

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

AUG 13 2004

GENERAL NOTICE LETTER
URGENT LEGAL MATTER
PROMPT REPLY NECESSARY
CERTIFIED MAIL-RETURN RECEIPT REQUESTED

President/Legal Officer
S&A Realty Corp.
55 Passaic Avenue
Kearny, NJ 07032-1502

RE: Diamond Alkali Superfund Site
Notice of Potential Liability for
Response Actions in the Lower Passaic River Study Area, New Jersey

Dear Mr. President:

The United States Environmental Protection Agency ("EPA") is charged with responding to the release and/or threatened release of hazardous substances, pollutants, and contaminants into the environment and with enforcement responsibilities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. §9601 et seq. Accordingly, EPA is seeking your cooperation in an innovative approach to environmental remediation and restoration activities for the Lower Passaic River.

EPA has documented the release or threatened release of hazardous substances, pollutants and contaminants into the six-mile stretch of the river, known as the Passaic River Study Area, which is part of the Diamond Alkali Superfund Site ("Site") located in Newark, New Jersey. Based on the results of previous CERCLA remedial investigation activities and other environmental studies, including a reconnaissance study of the Passaic River conducted by the United States Army Corps of Engineers ("USACE"), EPA has further determined that contaminated sediments and other potential sources of hazardous substances exist along the entire 17-mile tidal reach of the Lower Passaic River. Thus, EPA has decided to expand the area of study to include the entire Lower Passaic River and its tributaries from Dundee Dam to Newark Bay ("Lower Passaic River Study Area").

By this letter, EPA is notifying S&A Realty Corp. ("S&A Realty") of its potential liability relating to the Site pursuant to Section 107(a) of CERCLA, 42 U.S.C. §9607(a). Under CERCLA, potentially responsible parties ("PRPs") include current and past owners of a facility, as well as persons who arranged for the disposal or treatment of hazardous substances at the Site,

or the transport of hazardous substances to the Site.

In recognition of our complementary roles, EPA has formed a partnership with USACE and the New Jersey Department of Transportation-Office of Maritime Resources ("OMR") ["the governmental partnership"] to identify and to address water quality improvement, remediation, and restoration opportunities in the 17-mile Lower Passaic River. This governmental partnership is consistent with a national Memorandum of Understanding ("MOU") executed on July 2, 2002 between EPA and USACE. This MOU calls for the two agencies to cooperate, where appropriate, on environmental remediation and restoration of degraded urban rivers and related resources. In agreeing to implement the MOU, the EPA and USACE will use their existing statutory and regulatory authorities in a coordinated manner. These authorities for EPA include CERCLA, the Clean Water Act, and the Resource Conservation and Recovery Act. The USACE's authority stems from the Water Resources Development Act ("WRDA"). WRDA allows for the use of some federal funds to pay for a portion of the USACE's approved projects related to ecosystem restoration.

For the first phase of the Lower Passaic River Restoration Project, the governmental partners are proceeding with an integrated five- to seven-year study to determine an appropriate remediation and restoration plan for the river. The study will involve investigation of environmental impacts and pollution sources, as well as evaluation of alternative actions, leading to recommendations of environmental remediation and restoration activities. This study is being conducted by EPA under the authority of CERCLA and by USACE and OMR, as local sponsor, under WRDA. EPA, USACE, and OMR are attempting to coordinate with the New Jersey Department of Environmental Protection and the Federal and State Natural Resource Trustee agencies. EPA, USACE, and OMR estimate that the study will cost approximately $20 million, with the WRDA and CERCLA shares being about $10 million each. EPA is seeking its share of the costs of the study from PRPs.

Based on information that EPA evaluated during the course of its investigation of the Site, EPA believes that hazardous substances were being released from S&A Realty's facility located at 44 Passaic Avenue (aka 25 Belgrove Drive) in Kearny, New Jersey, into the Lower Passaic River Study Area. Hazardous substances, pollutants and contaminants released from the facility into the river present a risk to the environment and the humans who may ingest contaminated fish and shellfish. Therefore, S&A Realty may be potentially liable for response costs which the government may incur relating to the study of the Lower Passaic River. In addition, responsible parties may be required to pay damages for injury to, destruction of, or loss of natural resources, including the cost of assessing such damages.

EPA is aware that the financial ability of some PRPs to contribute toward the payment of response costs at the Site may be substantially limited. If you believe, and can document, that you fall within that category, please inform Ms. Reddy and Mr. Hyatt at the addresses located towards the end of this letter. You will be asked to submit financial records including business and, possibly, personal federal income tax returns as well as audited financial statements to substantiate such a claim.

or the transport of hazardous substances to the Site.

In recognition of our complementary roles, EPA has formed a partnership with USACE and the New Jersey Department of Transportation-Office of Maritime Resources ("OMR") ["the governmental partnership"] to identify and to address water quality improvement, remediation, and restoration opportunities in the 17-mile Lower Passaic River. This governmental partnership is consistent with a national Memorandum of Understanding ("MOU") executed on July 2, 2002 between EPA and USACE. This MOU calls for the two agencies to cooperate, where appropriate, on environmental remediation and restoration of degraded urban rivers and related resources. In agreeing to implement the MOU, the EPA and USACE will use their existing statutory and regulatory authorities in a coordinated manner. These authorities for EPA include CERCLA, the Clean Water Act, and the Resource Conservation and Recovery Act. The USACE's authority stems from the Water Resources Development Act ("WRDA"). WRDA allows for the use of some federal funds to pay for a portion of the USACE's approved projects related to ecosystem restoration.

For the first phase of the Lower Passaic River Restoration Project, the governmental partners are proceeding with an integrated five- to seven-year study to determine an appropriate remediation and restoration plan for the river. The study will involve investigation of environmental impacts and pollution sources, as well as evaluation of alternative actions, leading to recommendations of environmental remediation and restoration activities. This study is being conducted by EPA under the authority of CERCLA and by USACE and OMR, as local sponsor, under WRDA. EPA, USACE, and OMR are attempting to coordinate with the New Jersey Department of Environmental Protection and the Federal and State Natural Resource Trustee agencies. EPA, USACE, and OMR estimate that the study will cost approximately $20 million, with the WRDA and CERCLA shares being about $10 million each. EPA is seeking its share of the costs of the study from PRPs.

Based on information that EPA evaluated during the course of its investigation of the Site, EPA believes that hazardous substances were being released from S&A Realty's facility located at 44 Passaic Avenue (aka 25 Belgrove Drive) in Kearny, New Jersey, into the Lower Passaic River Study Area. Hazardous substances, pollutants and contaminants released from the facility into the river present a risk to the environment and the humans who may ingest contaminated fish and shellfish. Therefore, S&A Realty may be potentially liable for response costs which the government may incur relating to the study of the Lower Passaic River. In addition, responsible parties may be required to pay damages for injury to, destruction of, or loss of natural resources, including the cost of assessing such damages.

EPA is aware that the financial ability of some PRPs to contribute toward the payment of response costs at the Site may be substantially limited. If you believe, and can document, that you fall within that category, please inform Ms. Reddy and Mr. Hyatt at the addresses located towards the end of this letter. You will be asked to submit financial records including business and, possibly, personal federal income tax returns as well as audited financial statements to substantiate such a claim.

Kedari Reddy, Assistant Regional Counsel
Office of Regional Counsel
U.S. Environmental Protection Agency
290 Broadway - 17th Floor
New York, New York 10007-1866

Pursuant to CERCLA Section 113(k), EPA must establish an administrative record that contains documents that form the basis of EPA's decision on the selection of a response action for a site. The administrative record files, which contain the documents related to the response action selected for this Site are located at EPA's Region 2 office (290 Broadway, New York, NY) on the 18th floor. You may call the Records Center at (212) 637-4308 to make an appointment to view the administrative record for the Diamond Alkali Site, Passaic River.

As you may be aware, on January 11, 2002, President Bush signed into law the Superfund Small Business Liability Relief and Brownfields Revitalization Act. This Act contains several exemptions and defenses to CERCLA liability, which we suggest that all parties evaluate. You may obtain a copy of the law via the Internet at http://www.epa.gov/swerosps/bf/sblrbra.htm and review EPA guidances regarding these exemptions at http://www.epa.gov/compliance/resources/policies/cleanup/superfund.

If you wish to discuss this further please contact Ms. Elizabeth Butler, Remedial Project Manager, at (212) 637-4396 or Ms. Kedari Reddy, Assistant Regional Counsel, at (212) 637-3106. Please note that all communications from attorneys should be directed to Ms. Reddy.

Sincerely yours,

John Prisco

George Pavlou, Director
Emergency and Remedial Response Division

Enclosures