Dynamics Motors Unit Bounds Back After Fire
VINCENT BUTLER
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pg. C7

Dynamics Motors Unit Bounds Back After Fire

BY VINCENT BUTLER

[Chicago Tribune Press Service]

New York, July 24—Seven weeks after a fire destroyed its Bayonne, N. J., plant the Electro Dynamics division of General Dynamics corporation was back in operation at a new plant, Raymond B. Carey, the division president, announced today.

The fire, April 20, leveled 14 buildings and all the division's equipment and records. The loss was put in excess of 7 million dollars.

Carey said today that the "incredible" comeback from the ruin was the result of teamwork by personnel, the coöperation of suppliers and the bureau of ships, and of the parent corporation, headed by Roger Lewis, president.

All Persons Utilized

"All of the corporate resources of General Dynamics was put behind the effort to get back into operation," Carey said.

Electro Dynamics' new plant is at Avenel, N. J., 16 miles southwest of Bayonne. The facility, which covers 27 acres, was purchased from Art Metal, Inc., Jamestown, N. Y.

The division is the oldest of General Dynamics' 11 divisions, and is the oldest in the country which produces electric motors under the same name. It was founded in Philadelphia in 1880.

Among Electro Dynamics' products are low noise and low vibration electric motors used extensively in nuclear submarines and in such industrial and commercial applications as elevators, machine tools, and air conditioning.

No Major Orders Lost

Carey said that by a week after the fire 90 per cent of the orders on hand had been reconstructed. He said none of the company's major customers had withdrawn their orders.

Post-fire production was set up on a priority basis with critical motors for the Polaris submarine heading the list. Carey said that the first motor after the fire was shipped two days before the deadline and 28 days faster than normal production from makeshift quarters at Bayonne.

DISCHARGES - UNTREATED

BAYONNE, N. J.

REPORT #

54200 West 52 Street - Pharma Chemical Company - 12/1/54 - 11:00 A.M. - 10" T.P. - Industrial Wastes - red in color - continuous flow.

54211 West 20 - West 21 Street - 10" C.I.P. located directly behind raised manhole over interceptor - sanitary sewage - not connected to interceptor. 12/6/54 - 10:40 A.M.

54214 54229 West 5th Street - 24" C.I.P. - located adjacent to Jersey Yacht Club. Outfall discharges sanitary wastes from area not connected to city interceptor - Bayview Court to Electro Dynamic Corp. - Inspected - 12/6/54 and 12/20/54 - 11:30 A.M.

54219 West 1st Street - 24" C.I.P. - Texaco Co. Property - sanitary wastes - steps being taken by Texaco Company to correct - 12/8/54 - 11:50 A.M.

54227 East 34th Street - (at Naval Supply Depot 10'-12' east of 60" Con. Sewer.) - 4" C.I.P. connected to Waiting Room toilets at entrance gate to Supply Depot - sanitary wastes in immediate area of discharge end of pipe - 12/13/54 - 3:15 P.M.

54228 Foot of Ingram Avenue - 60" brick - industrial wastes of various colors - no sanitary wastes observed - 12/13/54 - 1:30 P.M.

54230 Tide Water Oil Co. - 54" C.I.P. - Handles 15% of sanitary wastes from Tidewater Oil Co. and all sanitary wastes from Southern Cotton Co., tarrant on property. 85% of sanitary wastes taken care of by septic tanks. 54" C.I.P. is old city line. Upper portion tied into interceptor outside of plant property. Present population 900 persons - closing plant on January 31, 1955 and moving to Delaware. 12/20/54 - 10:30 A.M.

54232 Electro Dynamic Division of General Dynamics - 12" C.I.P. Private line - Sanitary wastes. See Report. 12/15/54 - 1:30 P.M.

54233 Kraft Corrugated Containers, Inc. - 18" private line - vegetable dye waste discharged - reported harmless. Industrial waste - See Report. 12/15/54 - 10:30 A.M.

54234 Eldorado Oil Works, Inc. - 2-12" sanitary and storm sewers private - on property. Plant not operating - 13 persons only. Plant expects to close down entirely in early 1955. See Report - 12/15/54 - 9:15 A.M.

119A

DISTRICT DATA MEMORANDUM September 12, 1956

Hudson County

Bayonne, New Jersey

Mr. Wyatt informs me that the flow passing through the sewage treatment plant is now approximately 6 million gallons daily. He informs me that there is some controversy concerning who will pay the costs of connecting three (3) short blocks in the Bergen Point area to the existing interceptor. This area serves about 12 houses.

I am also informed that the following are not connected to the sewers draining to the treatment plant:

(a) The American Radiator Plant

(b) A Navy Housing Development

(c) The Old Kloo Plant

The Navy Housing Development requires a sewer connection under some railroad tracks.

SCH:a

THE WHITMAN COMPANIES, INC.
Environmental & Engineering Management

Ira L. Whitman Ph.D. P.E.
Ferris Plaza Building
385 Highway
East Brunswick NJ 088
(201) 390-685
Fax: (201) 390-94

CLEANUP PLAN

FOR

EFKA PLASTIC CORPORATION

BAYONNE, NEW JERSEY

VOLUME 1

ECRA CASE #86409

SUBMITTED TO:

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

INDUSTRIAL SITE EVALUATION ELEMENT

TRENTON, NEW JERSEY

PREPARED BY:

THE WHITMAN COMPANIES, INC.

EAST BRUNSWICK, NEW JERSEY

ENVIRONMENTAL CLEANUP RESPONSIBILITY ACT

N.J.A.C. 7.26B - 5.3

DECEMBER 1989

BBA000020

THE WHITMAN COMPANIES, INC.
Environmental & Engineering Management

[illegible] Whitman [illegible]
Ferris Plaza [illegible]
385 [illegible]
East Brunswick [illegible]
(201) [illegible]
Fax (201) [illegible]

December 20, 1989

Mr. Ken Hart, Chief
New Jersey Department of Environmental Protection
Bureau of Environmental Evaluation and Cleanup
Responsibility Assessment
Division of Hazardous Waste Management
401 East State Street
5th Floor
CN-028
Trenton, N.J. 08625

Attn: Ms. Sharon Bruder, Case Manager

RE: EFKA Plastic Corporation
Bayonne, New Jersey
ECRA Case #86409

Dear Ms. Bruder:

Enclosed please find the Cleanup Plan for EFKA Plastic Corporation, Bayonne, New Jersey. The Cleanup Plan details all of the sampling data, findings, conclusions, and recommendations for remedial action. The Cleanup Plan is submitted in three (3) Volumes. The following information is included in each:

Volume #	Description	# of Copies
1	Main Text	3
2	Laboratory Data Sheets	3
3	Laboratory QA/QC (presented in 5 parts)	1

Based on the fee schedule, the appropriate fees for this Cleanup Plan are:

Cleanup Plan Review	$ 5,000
Oversight of Cleanup Plan	$ 7,000
	$12,000

Fees will be forwarded to your office under separate cover.

It is understoood that as part of the Cleanup Plan Approval, EFKA Plastic Corporation will be required to provide a financial assurance for the estimated cleanup cost, which in this case is $133,398.

Plese contact our office if you have any question regarding the attached Cleanup Plan.

Very truly yours,

Richard Britton
Environmental Scientist

RB/ae

cc: George Katz, EFKA Plastic Corporation
James Dugan, Esquire, Bay Bridge Associates

VOLUME 1

CLEANUP PLAN

EFKA PLASTIC CORPORATION

BAYONNE, NEW JERSEY

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iii) Conclusions and Recommendations

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iii) Conclusions and Recommendations

G. Transformer Area

i) Background and Description of Additional Sampling and Cleanup Completed
ii) Findings
iii) Conclusions and Recommendations

H. Tank Areas C and H

I. Spill Area 3

J. Ground Water Investigation

i) Background and Description of Work Performed
ii) Findings
iii) Conclusions and Recommendations

3. PROPOSED CLEANUP AND REMEDIATION

A Tank Area E

B. Tank Area F

i) Proposed Remediation
ii) Post-Excavation Sampling
iii) Cost Estimate and Magnitude of Cleanup

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i) Proposed Remediation
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iii) Cost Estimate and Magnitude of Cleanup

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i) Proposed Remediation
ii) Post-Excavation Sampling
iii) Cost Estimate and Magnitude of Cleanup

FIGURES

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ATTACHMENTS

VOLUME 2

Laboratory Data Sheets

VOLUME 3

Laboratory QA/QC

(Volume 3 is included with Primary Copy only)

CLEANUP PLAN

EFKA PLASTIC CORPORATION - BAYONNE, NEW JERSEY

1. OVERVIEW

The EFKA Plastic Corporation Site Evaluation Submission and Sampling Plan were submitted to NJDEP in July 1986. The site was inspected by the NJDEP case manager on March 17, 1987, and later inspected by a geologist from The Division of Water Resources. Sampling Plan approval was issued by the DEP on June 19, 1987. Implementation of the approved Sampling Plan commenced September 1987.

On February 24, 1988, a second document entitled "Sampling Plan Results and Proposed Supplemental Sampling For EFKA Plastic Corporation" was submitted for review to the NJDEP. This plan summarized the results of the first sampling plan and proposed additional sampling in order to delineate areas of environmental concern. Sampling Plan approval was issued by the DEP on March 20, 1989. Implementation of the second phase Sampling Plan commenced July 1989. The purpose of this third document entitled "Cleanup Plan for EFKA Plastic Corporation" is to summarize the second round sampling results and to specify all of the remaining remedial activities at EFKA Plastic Corporation.

Additional sampling and cleanup was completed at nine (9) areas on-site. The areas are listed below:

A. Tank Area E
B. Tank Area F
C. Spill Area A
D. Spill Area B
E. Leachfield 2 (West Side)
F. Storm Sewer 3 (North Side)
G. Transformer Area
H. Tank Areas C and H
I. Spill Area 3
J. Ground Water - six monitoring wells were installed and sampled in addition to two surface water samples

Each of the areas listed above is discussed separately in the "Results of Additional Sampling and Cleanup Completed" section of this report. The following information is included for each area:

- Background and Description of Additional Sampling and Cleanup Completed
- Findings
- Conclusions and Recommendations

All of the areas on-site where additional sampling and cleanup have been completed are shown on Figure 1.

Additional cleanup and post excavation sampling is currently proposed at eight (8) areas. The areas are listed below:

A. Tank Area E
B. Tank Area F
C. Spill Area A
D. Spill Area B
E. Septic Tanks 1-4A
F. Leachfield 2
G. Storm Sewers
H. Transformer Area
I. Ground Water

All of the areas requiring additional cleanup will be discussed separately in the "Proposed Cleanup and Remediation" section of this report.

All samples were collected with carefull attention to quality assurance. Soil samples were obtained using carefully decontaminated stainless steel hand trowels or augers. Water samples were collected using dedicated laboratory decontaminated teflon bailers.

Laboratory analyses were performed by Envirotech Research, Edison, New Jersey. As part of The Whitman Companies, Inc. in-house QA/QC program, laboratory QA/QC data submitted with the sample results was reviewed for completeness. Based on our review, all of the data packages appear to be complete and acceptable.

The Cleanup Plan is broken down into three (3) volumes. Volume 1 contains the results of the additional sampling and cleanup completed, remaining cleanup and remediation proposals, cleanup specifications,

and Chain-of-Custody data sheets. Volume 2 contains the analytical data sheets as presented by the laboratory. Volume 3 contains a complete set of the entire QA/QC data package as presented by the laboratory. Volume 3 is presented in five (5) parts.

2. RESULTS OF ADDITIONAL SAMPLING AND CLEANUP COMPLETED

A. Tank Area E

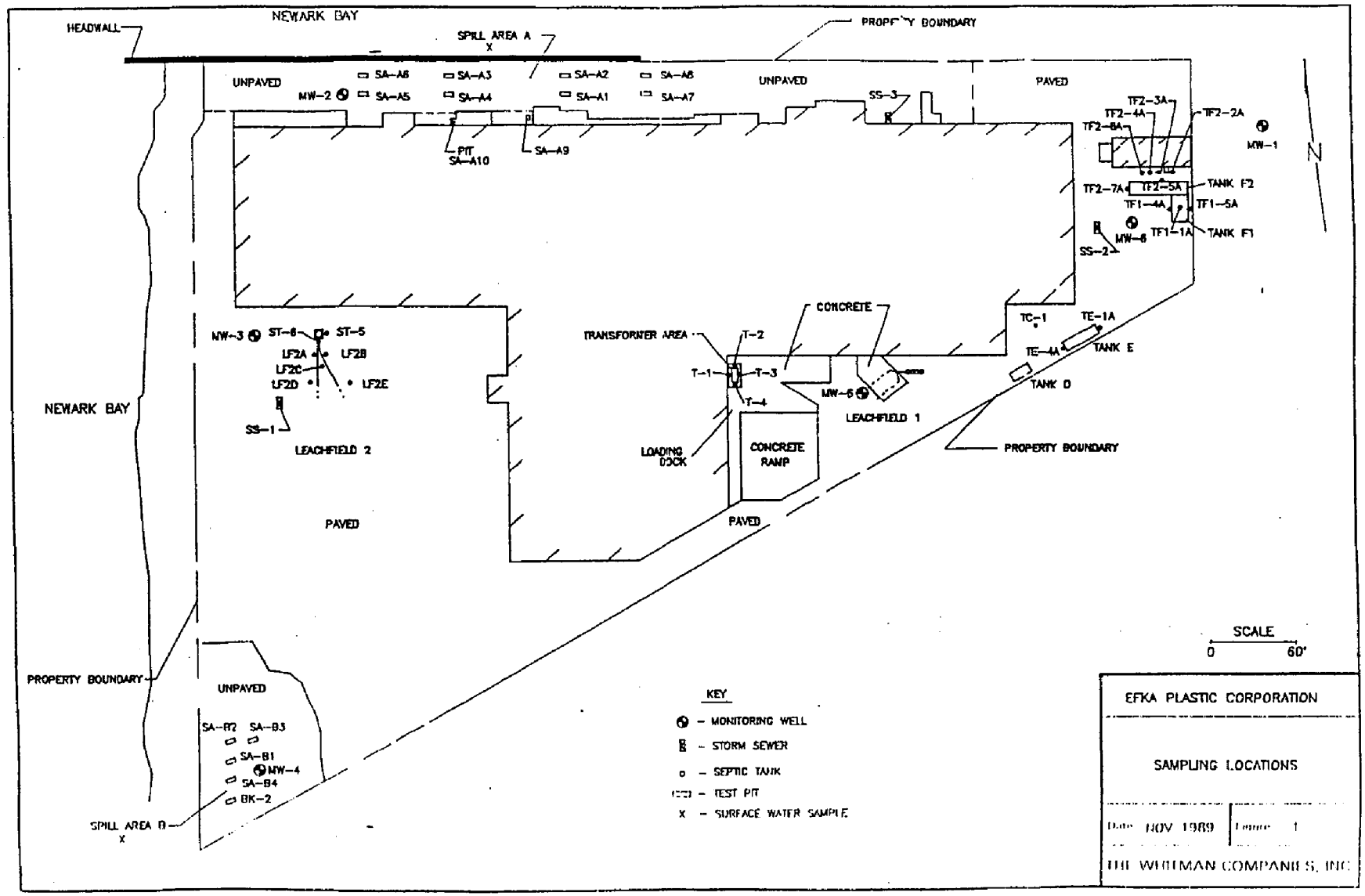
i) Background and Description of Additional Sampling and Cleanup Completed

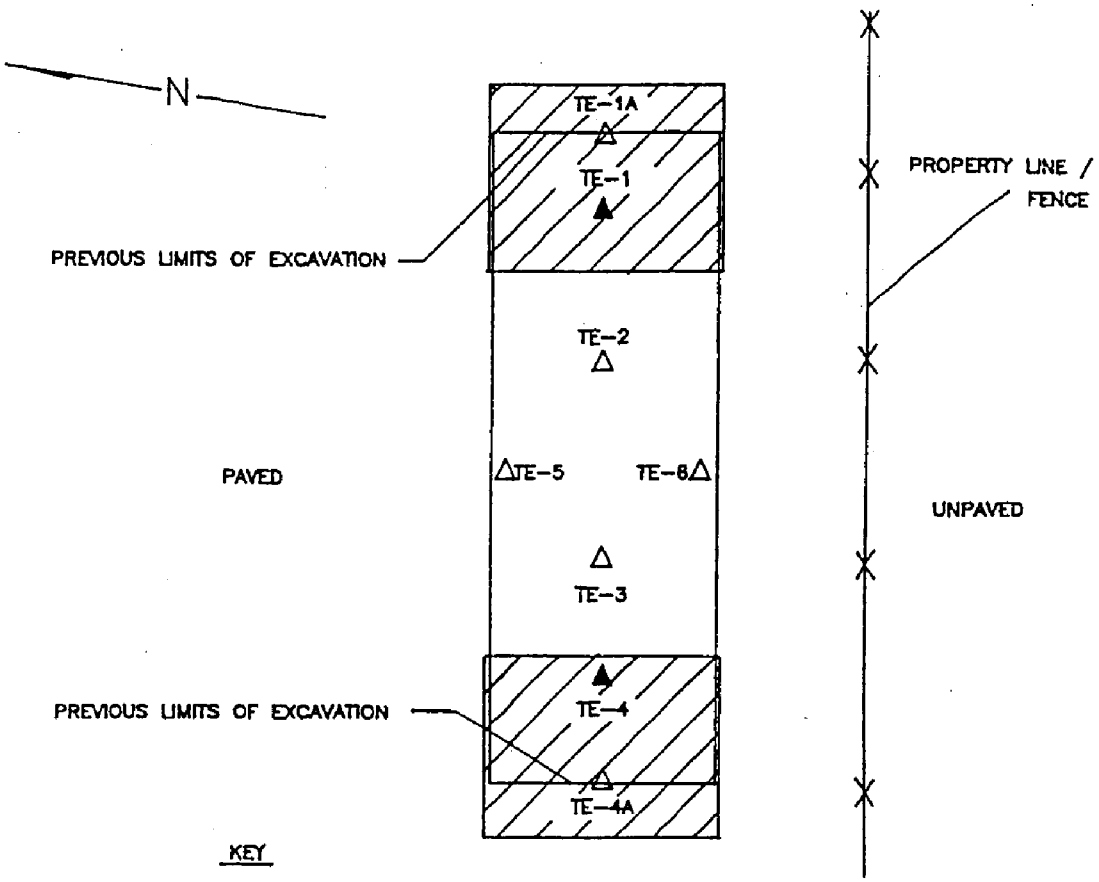
As documented in the "Sampling Plan Results and Proposed Supplemental Sampling", February 1988, two (2) of the post excavation samples collected from Tank E, a 4,000 gallon diesel tank, exhibited contaminant concentrations marginally above the NJDEP unofficial ECRA cleanup guideline of 100 ppm for PHC. The results are tabulated below:

Sample	PHCs (ppm)	BNs (ppm)
TE-1	277**	7.2/5.9*
TE-2	21	3.08/ND*
TE-3	ND	0.57/ND*
TE-4	125**	1.58/4.23*
TE-5	28	3.13/ND*
TE-6	10	0.20/3.02*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

Based on the above results, further soil excavation was proposed and approved in the areas of sample points TE-1 and TE-4 (Figure 2). Figure 2 shows the previous and most recent limits of excavation in addition to previous and most recent post-excavation sampling. Approximately 32 cubic yards of soil was excavated by Inland Pollution Services, Inc. and was placed on and covered with 6 mil. plastic.





EFKA PLASTIC CORPORATION

LOCATION OF SAMPLES
TANK AREA E

Date: NOV 1989 | Figure: 2

THE WHITMAN COMPANIES, INC

ii) Findings-

During July 1989, two (2) soil samples were collected from the new limits of excavation. Samples were taken along the center line near the ends of the excavation. The results for these samples are tabulated on the following page.

Sample	Depth	PHCs (ppm)	BNs (ppm)
TE-1A	6'-6'6"	ND	ND/ND*
TE-4A	6'-6'6"	ND	ND/ND*

iii) Conclusions and Recommendations

Based upon the latest round of analytical results, it is concluded that Area E is no longer an area of environmental concern. No further cleanup or sampling in this area is required. Excavated soil will be disposed of properly as elaborated in Section 3 of this report.

B. Tank Area F

i) Background and Description of Additional Sampling and Cleanup Completed

As documented in the "Sampling Plan Results and Proposed Supplemental Sampling", February 1988, four (4) of the post-excavation samples collected from Tank F1 and four (4) of the post-excavation samples collected from Tank F2 exhibited contaminant concentrations exceeding the NJDEP unofficial ECRA cleanup guidelines of 100 ppm for PHCs and 1 ppm for VOCs. The results for both gasoline tanks are tabulated below:

Sample	PHCs (ppm)	VOCs (ppm)
TF1-1	88	7.87**
TF1-2	38	1.93**
TF1-3	60	0.10
TF1-4	1,790**	3.23**
TF1-5	62	2.77**

Sample	PHCs (ppm)	VOCs (ppm)
TF2-1	20	0.23
TF2-2	25	7.68**
TF2-3	1,044**	2.15**
TF2-4	235**	30.25**
TF2-5	399**	6.09**
TF2-6	66	0.03

** - Samples Exceeding Unofficial ECRA Cleanup Levels

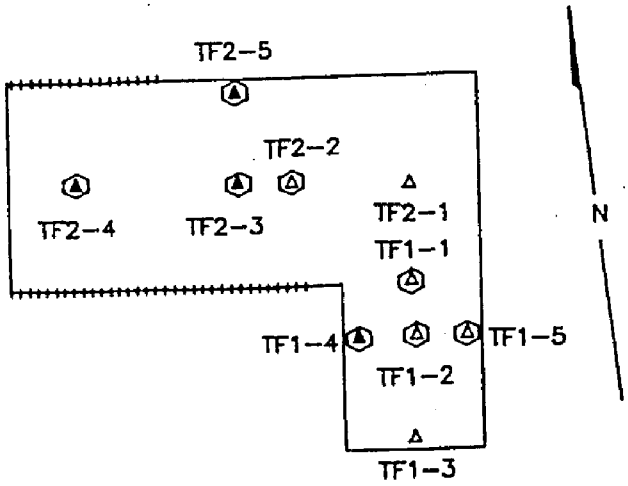
The above sampling locations are shown on Figure 3. Based on these results additional soil excavation, followed by post excavation sampling was proposed in the areas exceeding ECRA Cleanup Levels. Post-excavation samples were proposed at locations TF1-1, TF1-2, TF1-4, TF1-5 and TF2-2, TF2-3, TF2-4 and TF2-5. Samples TF2-2, TF2-3 and TF2-4 proposed below the centerline invert of Tank F2 were moved approximately 8 feet north due to the presence of a concrete craddle which prevented sample collection.

Sample TF1-2 was not obtained as this area was submerged below ground water which was encountered at approximately 7 feet during the excavation of soil. Approximately 65 cubic yards of soil was excavated by Inland Pollution Services, Inc. and was placed on and covered with 6 mil. plastic.

ii) Findings

During July 1989, eight (8) soil samples were collected from the new limits of excavation. The results for these samples are tabulated below.

Sample	Depth	PHCs (ppm)	VOCs (ppm)
TF1-4A	6'-6'6"	77	0.04/0.03*
TF1-5A	6'-6'6"	ND	ND/ND*
TF1-1A	6'-6'6"	ND	ND/ND*
TF2-5A	6'-6'6"	ND	14**/16.9*
TF2-7A	4'2"-4'8"	142**	0.27/2.4*
TF2-2A	6'-6'6"	ND	ND/ND*
TF2-3A	6'-6'6"	ND	ND/ND*



KEY

△ PHC LEVELS BELOW ECRA LIMITS

▲ PHC LEVELS ABOVE ECRA LIMITS

⬡ VOC LEVELS ABOVE ECRA LIMITS

SCALE

0 10'

EFKA PLASTIC CORPORATION

POST EXCAVATION
SAMPLE LOCATIONS
TANK AREA F DEC.1987

Date: NOV 1989 | Figure: 3

THE WHITMAN COMPANIES, INC

Sample	Depth	PHCs (ppm)	VOCs (ppm)
TF2-4A	6'-6'6"	ND	ND/ND*
TF2-8A	6'-6'6"	2,490**	ND/14.5*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

The above sampling locations are shown in Figure 4.

iii) Conclusions and Recommendations

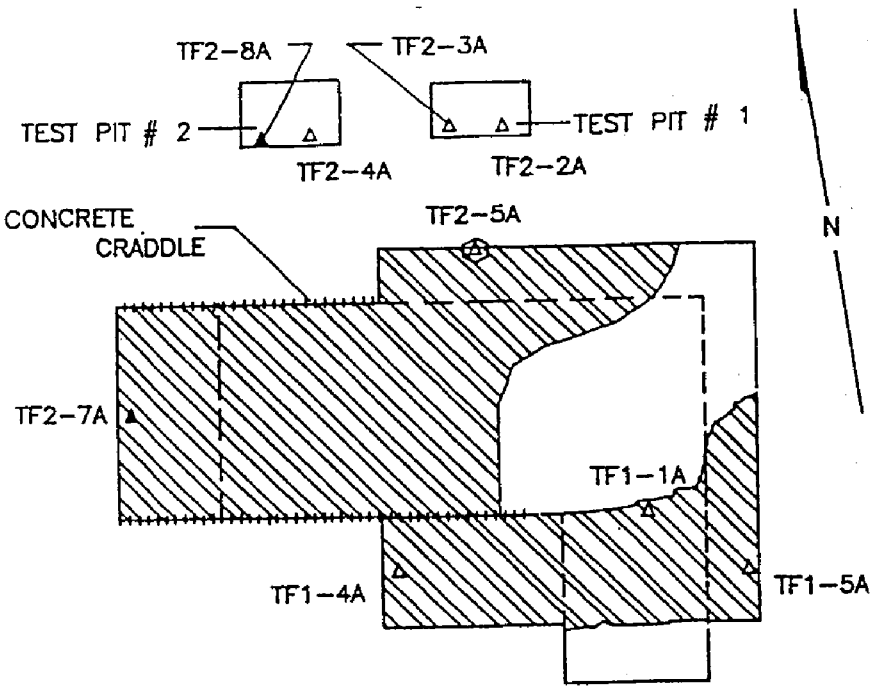
All post-excavation samples taken from Tank Area F1 are below unofficial ECRA cleanup levels. Two (2) post-excavation samples taken from Tank Area F2 exceed the unofficial ECRA cleanup level of 100 ppm for PHCs and one (1) post-excavation sample exceeds the cleanup level of 1 ppm for VOCs. The monitoring well in this area, MW-6, shows elevated levels of VOCs (10.9 ppm) and BNs (334 ppb).

Post-excavation samples collected from the excavation bottom indicate that PHC and VOC contamination is still present. Therefore, additional excavation is proposed in the area of Tank F2. The specific detail of the proposed excavation will be presented in Section 3 of this report.

C. Spill Area A

i) Background and Description of Additional Sampling and Cleanup Completed

As documented in the "Sampling Plan Results and Proposed Supplemental Sampling", February 1988, all samples except one showed Base Neutral compounds exceeding ECRA cleanup levels. The results from the 1987 sampling are tabulated on the following page.



MW-6

KEY

△ PHC LEVELS BELOW ECRA LIMITS

▲ PHC LEVELS ABOVE ECRA LIMITS

⬡ VOC LEVELS ABOVE ECRA LIMITS

MOST RECENT LIMITS OF EXCAVATION

SCALE
0 10'

EFKA PLASTIC CORPORATION

POST EXCAVATION
SAMPLE LOCATIONS
TANK AREA F JULY 1989

Date: NOV 1989 | Figure: 4

THE WHITMAN COMPANIES, INC

Sample Location	Depth	Bis (2-ethylhexyl) Phthalate (ppm)	Remaining BNs (ppm)	Total BNs (ppm)
SA-A-1A	6"-12"	2,120	85	2,205**/1,595.3*
SA-A-1B	24"-30"	5,390	27	5,417.4**/2,032.3*
SA-A-2A	6"-12"	5,400	408	5,808.5**/4,969.2*
SA-A-2B	24"-30"	23.2	4.8	28.0**/59.7*
SA-A-3A	6"-12"	5,190	337	5,527.1**/4,022.9*
SA-A-3B	24"-30"	1,120	2.6	1,122.6**/1,585.2*
SA-A-4A	6"-12"	2,550	ND	2,550.1**/3,210.0*
SA-A-4B	24"-30"	2,240	160	2,400.1**/4,712.2*
SA-A-5A	6"-12"	295	8.6	303.6**/348.1*
SA-A-5B	24"-30"	0.62	1.23	1.85/0.79*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

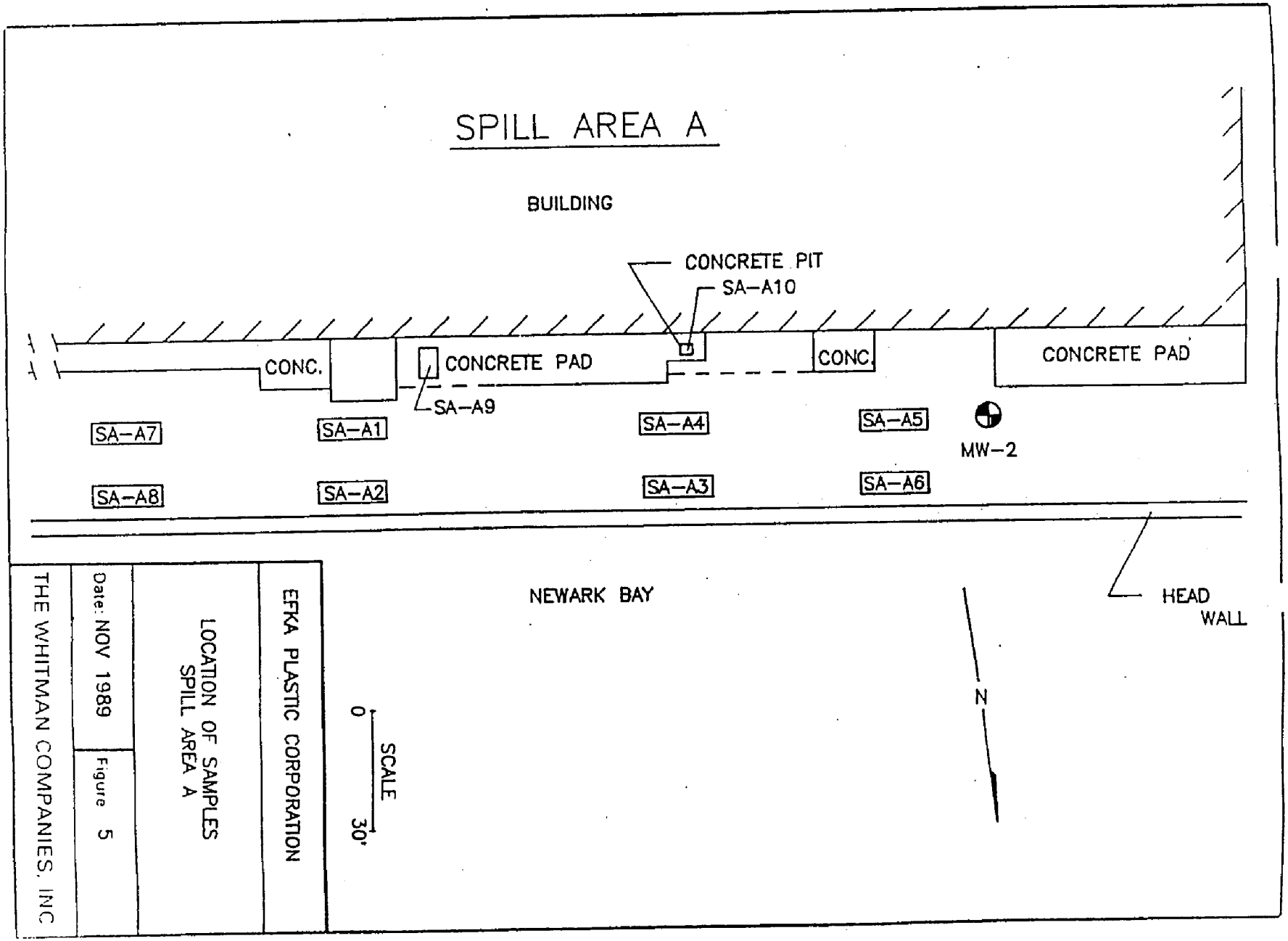
Bis (2-ethylhexyl) Phthalate, a Base Neutral compound, is shown separately because it accounts for the majority of Base Neutral contamination found in Spill Areas A and B. The current cleanup level for Bis (2-ethylhexyl) Phthalate in soil is 100 parts per million according to Kate Joyce, Chief of the Environmental Toxicology and Risk Assessment Section within BEERA.

Based on the above results, additional delineation of Area A was proposed by The Whitman Companies as follows:

Sample Location	Depth	Parameters
SA-A-1C	42"-48"	Base Neutrals
SA-A-1D	60"-66"	Base Neutrals
SA-A-2C	42"-48"	Base Neutrals
SA-A-2D	60"-66"	Base Neutrals
SA-A-3C	42"-48"	Base Neutrals
SA-A-3D	60"-66"	Base Neutrals

Sample Location	Depth	Parameters
SA-A-4C	42"-48"	Base Neutrals
SA-A-4D	60"-66"	Base Neutrals
SA-A-6A	6"-12"	Base Neutrals
SA-A-6B	18"-24"	Base Neutrals
SA-A-6C	42"-48"	Base Neutrals
SA-A-6D	60"-66"	Base Neutrals
SA-A-7A	6"-12"	Base Neutrals
SA-A-7B	18"-24"	Base Neutrals
SA-A-7C	42"-48"	Base Neutrals
SA-A-7D	60"-66"	Base Neutrals
SA-A-8A	6"-12"	Base Neutrals
SA-A-8B	18"-24"	Base Neutrals
SA-A-8C	42"-48"	Base Neutrals
SA-A-8D	60"-66"	Base Neutrals

See Figure 5 for sample locations. NJDEP in its conditional Sampling Plan Approval stated that additional samples should be obtained between the past samples and the EFKA building. In the field this was attempted but a buried concrete pad which extended over the entire spill area made collection of these samples impractical. The concrete pad was buried at depths ranging from 6 inches to a maximum of 18 inches. SA-A-9 represents the only sample that could be obtained between the past samples and the EFKA building. Samples 6C & 6D were not obtained due to the presence of an underground natural gas pipeline in this area. SA-A-1D was not obtained due to an inflow of water into the test pit at 4.5 feet.


SPILL AREA A
BUILDING
CONCRETE PIT
SA-A10
CONC.
CONCRETE PAD
SA-A9
CONC.
CONCRETE PAD
SA-A7
SA-A1
SA-A4
SA-A5
MW-2
SA-A8
SA-A2
SA-A3
SA-A6
NEWARK BAY
HEAD WALL
N
0
SCALE
30'
THE WHITMAN COMPANIES, INC.
Date: NOV 1989
Figure 5
LOCATION OF SAMPLES
SPILL AREA A
EFKA PLASTIC CORPORATION

ii) Findings -

During July 1989, Test Pits were dug to a depth of approximately 6 feet at sample locations 1-4 and 6-8. Sample results are tabulated below:

Sample Location	Depth	Bis (2-ethylhexyl) Phthalate (ppm)	Remaining BNs (ppm)	Total BNs (ppm)
SA-A-1C	42"-48"	28.3	4.6	32.9**/73.8*
SA-A-1D	60"-66"	-	-	No Sample
SA-A-2C	42"-48"	496	0.4	496.4**/3,863*
SA-A-2D	60"-66"	1.7	ND	1.7/58.5*
SA-A-3C	42"-48"	3,610	ND	3,610**/53,891*
SA-A-3D	60"-66"	37.2	3.2	40.4**/228*
SA-A-4C	42"-48"	1,060	ND	1,060**/2,231*
SA-A-4D	60"-66"	257	ND	257**/602*
SA-A-6A	6"-12"	ND	ND	ND/ND*
SA-A-6B	18"-24"	0.71	ND	0.71/0.8*
SA-A-6C	42"-48"	-	-	No Sample
SA-A-6D	60"-66"	-	-	No sample
SA-A-7A	6"-12"	1.6	75.4	77**/60*
SA-A-7B	18"-24"	ND	ND	ND/1.1*
SA-A-7C	42"-48"	ND	ND	ND/10.7*
SA-A-7D	60"-66"	ND	1.4	1.4/13.1*
SA-A-8A	6"-12"	16.6	ND	16.6**/701*
SA-A-8B	18"-24"	5.4	ND	5.4/59.7*
SA-A-8C	42"-48"	0.86	ND	0.86/13.4*
SA-A-8D	60"-66"	ND	ND	ND/1.0
SA-A-9A	12"-18"	6,040	ND	6,040**/22,920*
SA-A-10A	0"- 6"	1,810	ND	1,810**/86.9*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

Figures 6 through 9 display results as a function of sample depth. By looking at the vertical and horizontal distribution of soil contamination, we see that the area of contamination exceeding ECRA cleanup levels is "funnel shaped". Contamination appears to be centered around sample location SA-A-A4.

iii) Conclusions and Recommendations

The horizontal and vertical extent of contamination has been delineated in Spill Area A. While the extent of soil contamination in Spill Area A is large, it is important to consider the following factors when assessing the potential impact of Spill Area A on the environment:

1. Monitoring Well Two (MW-2) which is downgradient and indicative of ground water quality in Spill Area A was found to be uncontaminated. This is evidence that Bis(2-ethylhexyl) Phthalate contamination is confined to the soil matrix and quite immobile.

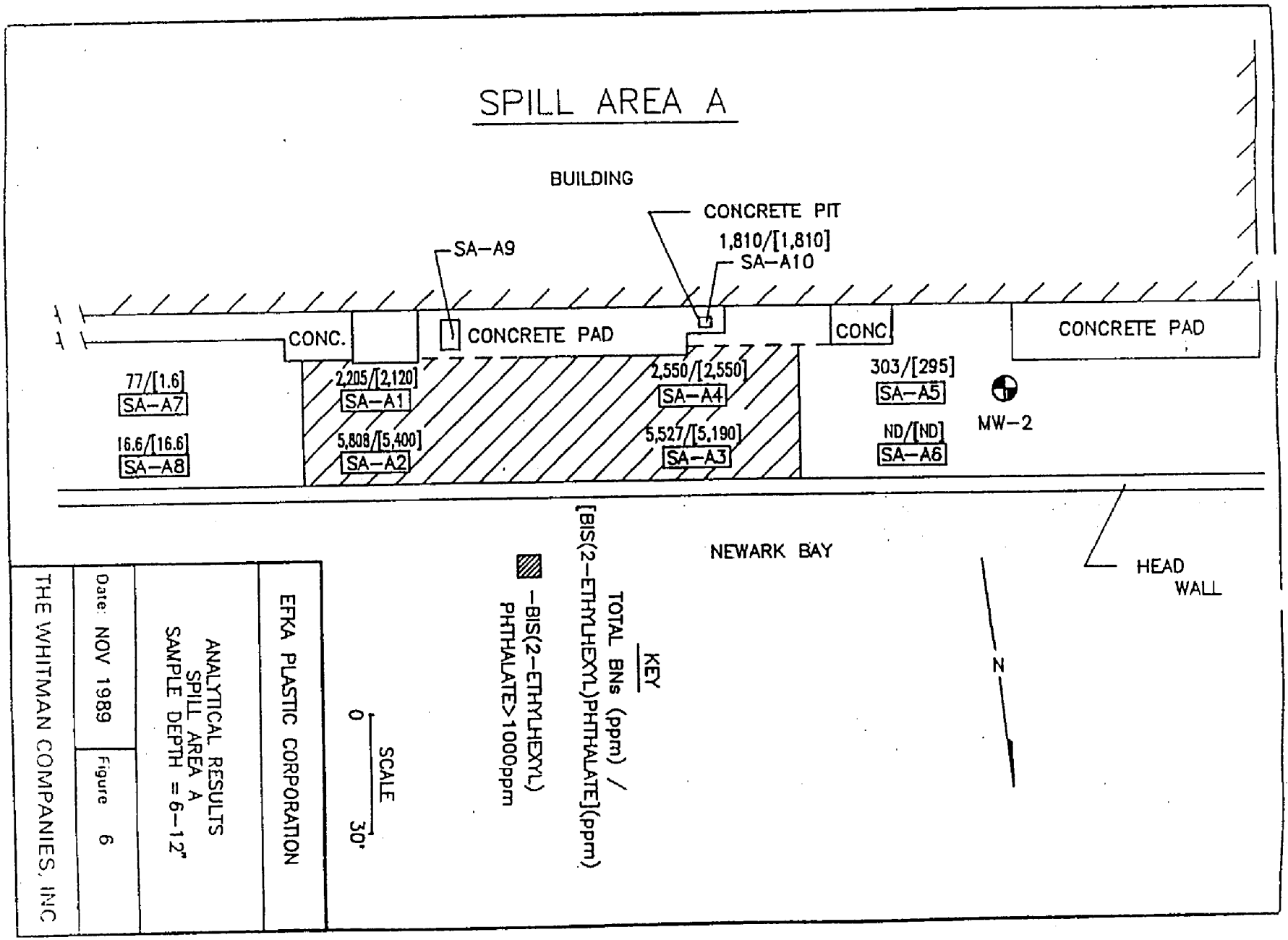
2. Ground water in this area was found to significantly exceed the drinking water standard for total dissolved solids, thus, making it unsuitable for use as a drinking water supply.

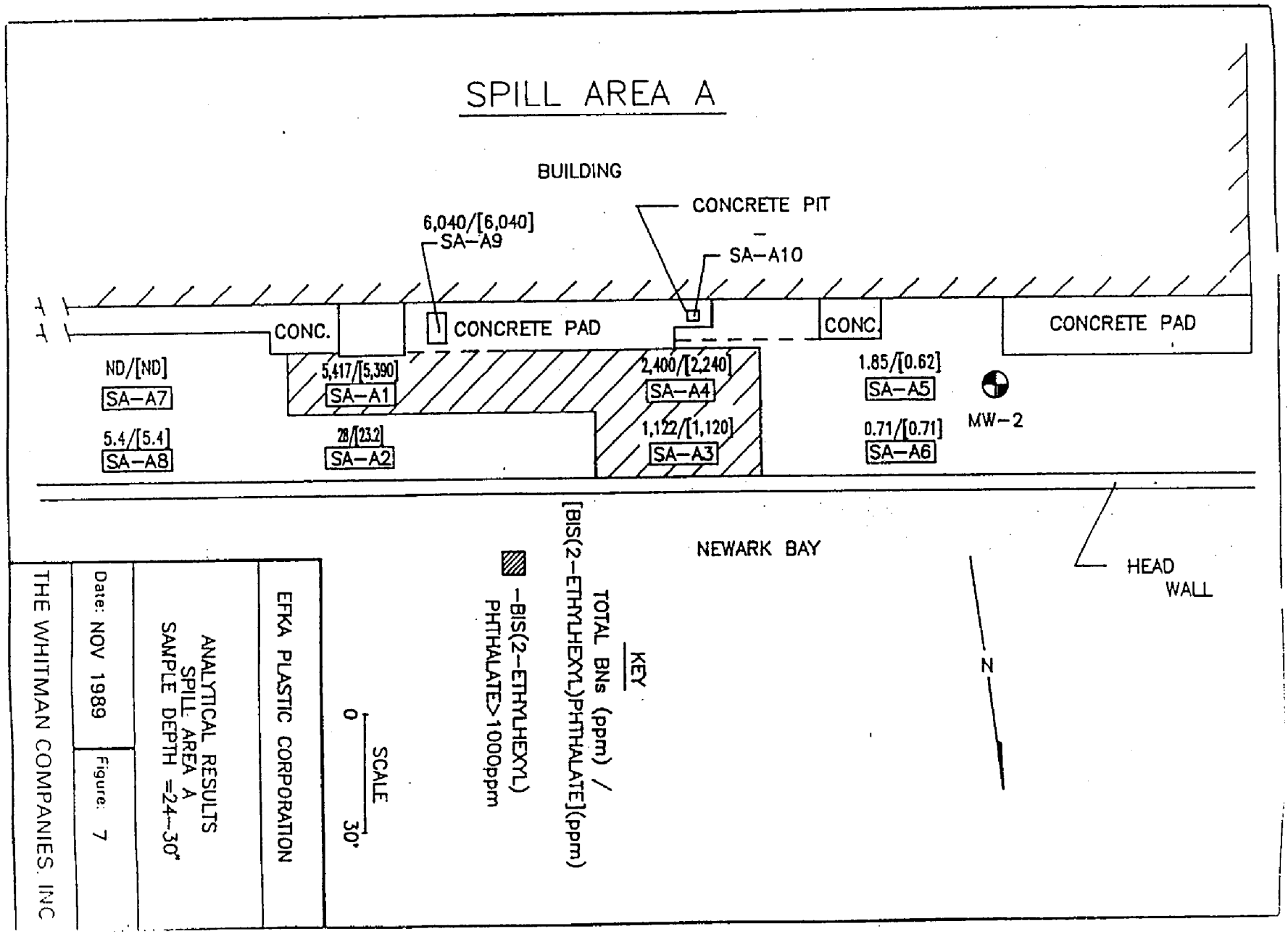
3. No water supply wells have been identified in the vicinity of the site according to searches of NJDEP files.

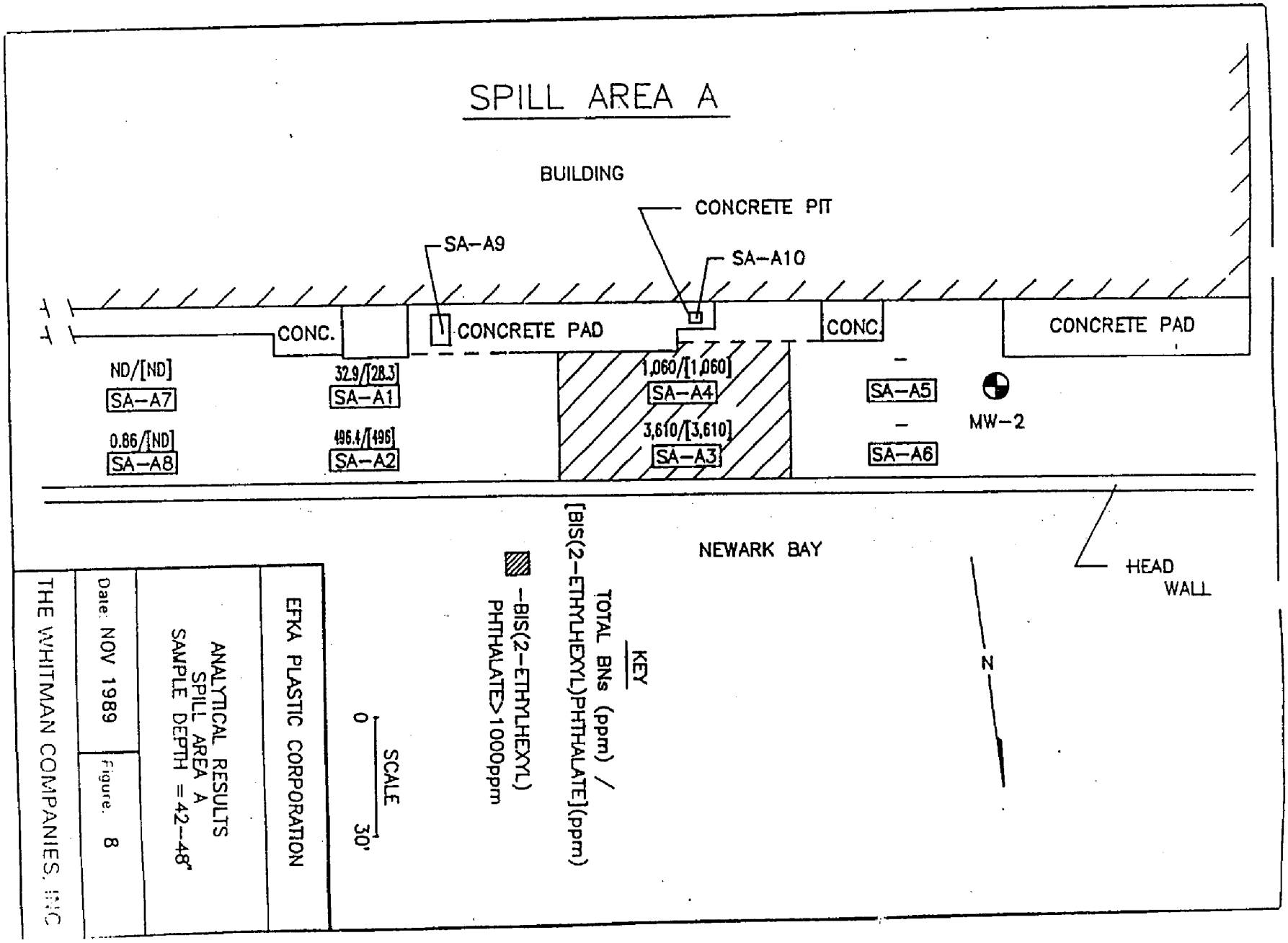
4. The presence of a large headwall constructed to prevent soil erosion along the northwest border of the EFKA property eliminates the northern hydraulic connection one would otherwise expect between Newark Bay and Spill Area A. Thus, ground water in Spill Area A is forced to run parallel to the headwall, towards MW-2, to reach Newark Bay. As described above, MW-2 was found to be uncontaminated.

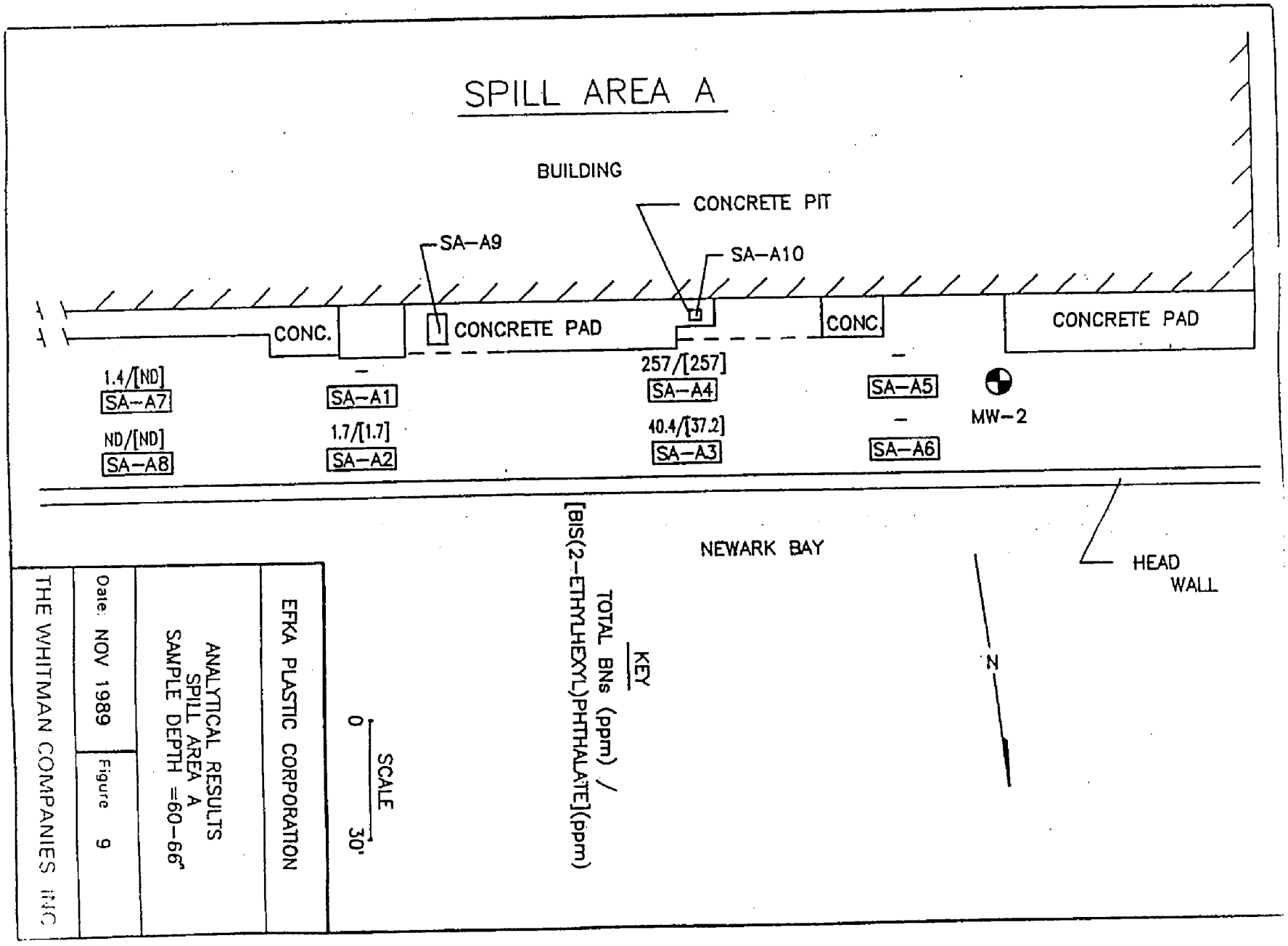
Based on the above considerations it is proposed that the following remedial activity is warranted for Spill Area A:

1. Three (3) surface soil "hot spots" exceeding 5,000 ppm of Bis(2-ethylhexyl) Phthalate will be excavated to a depth of 1 foot. Also, soil located in a 3'x3'x1' concrete pit will be excavated (Figure 20).


SPILL AREA A
BUILDING
CONCRETE PIT
1,810/[1,810]
SA-A10
SA-A9
CONC.
CONCRETE PAD
CONC
CONCRETE PAD
77/[1.6]
SA-A7
2,205/[2,120]
SA-A1
2,550/[2,550]
SA-A4
303/[295]
SA-A5
MW-2
16.6/[16.6]
SA-A8
5,808/[5,400]
SA-A2
5,527/[5,190]
SA-A3
ND/[ND]
SA-A6
NEWARK BAY
HEAD WALL
N
KEY
TOTAL BNs (ppm) / [BIS(2-ETHYLHEXYL)PHTHALATE](ppm)
-BIS(2-ETHYLHEXYL) PHTHALATE>1000ppm
SCALE
0
30'
EFKA PLASTIC CORPORATION
ANALYTICAL RESULTS
SPILL AREA A
SAMPLE DEPTH = 6-12"
Date: NOV 1989
Figure 6
THE WHITMAN COMPANIES, INC


SPILL AREA A
BUILDING
CONCRETE PIT
6,040/[6,040]
SA-A9
SA-A10
CONC.
CONCRETE PAD
CONC
CONCRETE PAD
ND/[ND]
SA-A7
5,417/[5,390]
SA-A1
2,400/[2,240]
SA-A4
1.85/[0.62]
SA-A5
MW-2
5.4/[5.4]
SA-A8
28/[23.2]
SA-A2
1,122/[1,120]
SA-A3
0.71/[0.71]
SA-A6
NEWARK BAY
HEAD
WALL
N
KEY
TOTAL BNs (ppm) /
[BIS(2-ETHYLHEXYL)PHTHALATE](ppm)
-BIS(2-ETHYLHEXYL)
PHTHALATE>1000ppm
SCALE
0
30'
EFKA PLASTIC CORPORATION
ANALYTICAL RESULTS
SPILL AREA A
SAMPLE DEPTH =24-30"
Date: NOV 1989
Figure: 7
THE WHITMAN COMPANIES, INC


SPILL AREA A
BUILDING
CONCRETE PIT
SA-A9
SA-A10
CONC.
CONCRETE PAD
CONC.
CONCRETE PAD
ND/[ND]
SA-A7
32.9/[28.3]
SA-A1
1,060/[1,060]
SA-A4
SA-A5
MW-2
0.86/[ND]
SA-A8
496.4/[496]
SA-A2
3,610/[3,610]
SA-A3
SA-A6
NEWARK BAY
HEAD WALL
N
KEY
TOTAL BNs (ppm) / [BIS(2-ETHYLHEXYL)PHTHALATE](ppm)
-BIS(2-ETHYLHEXYL) PHTHALATE>1000ppm
SCALE
0
30'
THE WHITMAN COMPANIES, INC.
Date: NOV 1989
Figure 8
ANALYTICAL RESULTS
SPILL AREA A
SAMPLE DEPTH = 42-48"
EFKA PLASTIC CORPORATION


SPILL AREA A
BUILDING
CONCRETE PIT
SA-A9
SA-A10
CONC.
CONCRETE PAD
CONC
CONCRETE PAD
1.4/[ND]
SA-A7
ND/[ND]
SA-A8
SA-A1
1.7/[1.7]
SA-A2
257/[257]
SA-A4
40.4/[37.2]
SA-A3
SA-A5
SA-A6
MW-2
NEWARK BAY
HEAD WALL
N
KEY
TOTAL BNs (ppm) / [BIS(2-ETHYLHEXYL)PHTHALATE](ppm)
0
SCALE
30'
EFKA PLASTIC CORPORATION
ANALYTICAL RESULTS
SPILL AREA A
SAMPLE DEPTH =60-66"
Date: NOV 1989
Figure 9
THE WHITMAN COMPANIES INC

2. A Phillips 66 Geoseal® impermeable liner will be installed to cover the entire 240' x 46' surface of Spill Area A. The liner will preclude accidental human contact with contaminated soil and prevent percolation of precipation through this area.

3. The liner will be covered with clean fill and this entire area will be paved.

The specific detail of the proposed remediation will be presented in Section 3 of this report.

D. Spill Area B

i) Background and Description of Additional Sampling and Cleanup Completed

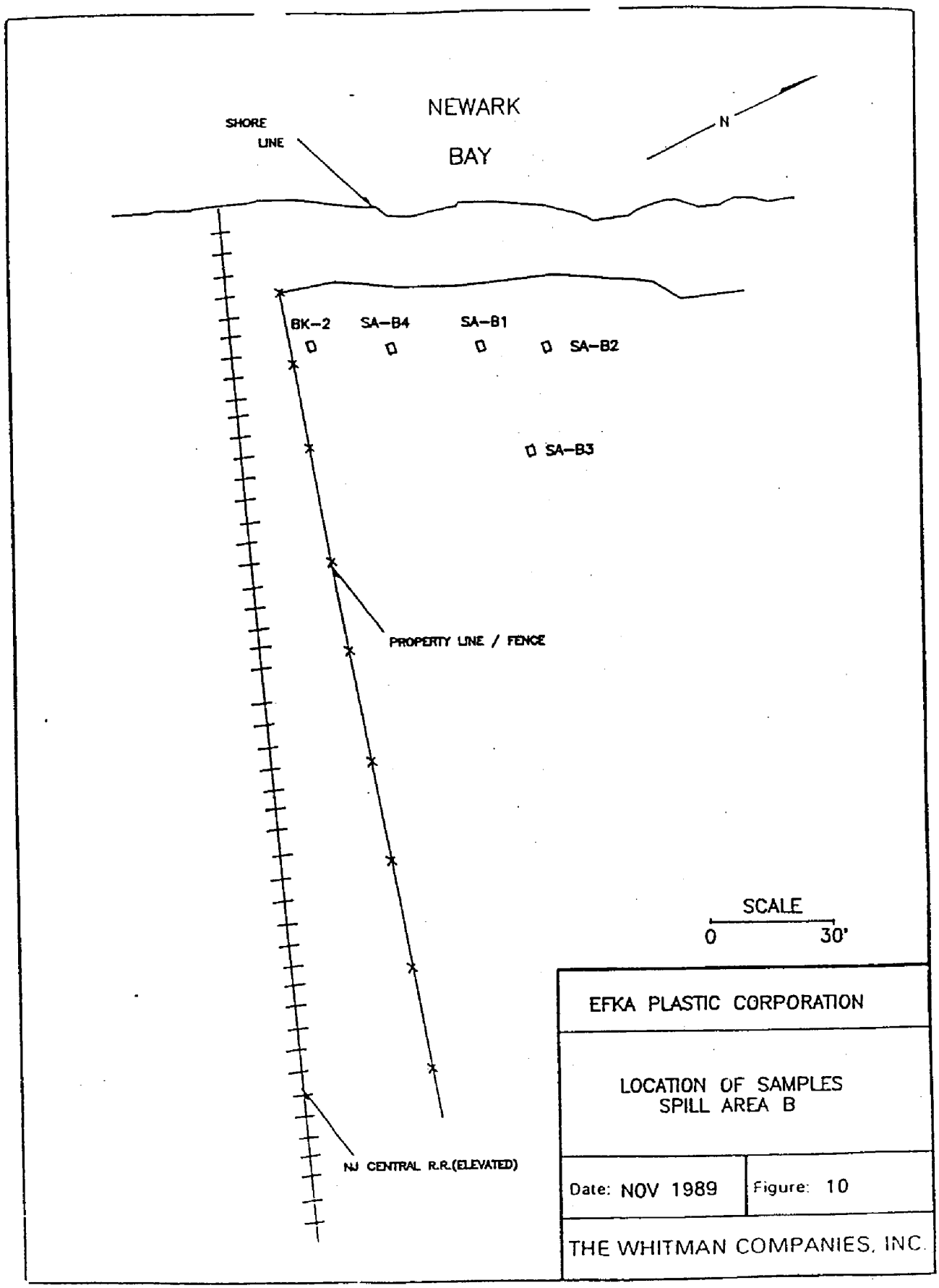
As documented in the "Sampling Plan Results and Proposed Supplemental Sampling", the one sample obtained from Area B, SA-B-1A, exhibited Base Neutral contamination at 137 parts per million. Based on this result, additional delineation of Area B was proposed by The Whitman Companies, Inc. as follows:

Sample Location	Depth	Parameters
SA-B-1B	24-30"	BN
SA-B-1C	48-54"	BN
SA-B-2A	6-12"	BN
SA-B-2B	24-30"	BN
SA-B-2C	48-54"	BN
SA-B-3A	6-12"	BN
SA-B-3B	24-30"	BN
SA-B-3C	48-54"	BN

See Figure 10 for sample locations. NJDEP in its conditional Sampling Plan approval stated that at least one additional sample shall be obtained between BK-2 and S-B-1A. Sample location SA-B-4 was added to satisfy this requirement.

ii) Findings

During July 1989, Test Pits were dug to a depth of 5 feet at sample locations 1-4. Sample results are tabulated on the following page.


NEWARK
BAY
SHORE
LINE
N
BK-2
SA-B4
SA-B1
SA-B2
SA-B3
PROPERTY LINE / FENCE
NJ CENTRAL R.R.(ELEVATED)
SCALE
0
30'
EFKA PLASTIC CORPORATION
LOCATION OF SAMPLES
SPILL AREA B
Date: NOV 1989
Figure: 10
THE WHITMAN COMPANIES, INC.

Sample Location	Depth	Bis (2-ethylhexyl) Phthalate (ppm)	Remaining BNs (ppm)	Total BNs (ppm)
(SA-B-1A)	(6"-12")	(136)	(1.0)	(137**/284*)
SA-B-1B	24"-30"	5.8	ND	5.8/52*
SA-B-1C	48"-54"	ND	ND	ND/119*
SA-B-2A	6"-12"	27.4	9.4	36.8**/58.3*
SA-B-2B	24"-30"	51.1	0.7	51.8**/311*
SA-B-2C	48"-54"	ND	ND	ND/6.6*
SA-B-3A	6"-12"	ND	ND	ND/90*
SA-B-3B	24"-30"	ND	ND	ND/45*
SA-B-3D	48"-54"	ND	ND	ND/4.6*
SA-B-4A	6"-12"	ND	ND	ND/51*
SA-B-4B	24"-30"	ND	ND	ND/6.8*
SA-B-4C	48"-54"	ND	ND	ND/ND*

* - Library Search Compounds
** - Samples exceeding the Unofficial ECRA Cleanup Levels
( ) - Previous sample result, September 1987

Figure 11 displays results as a function of sample depth.

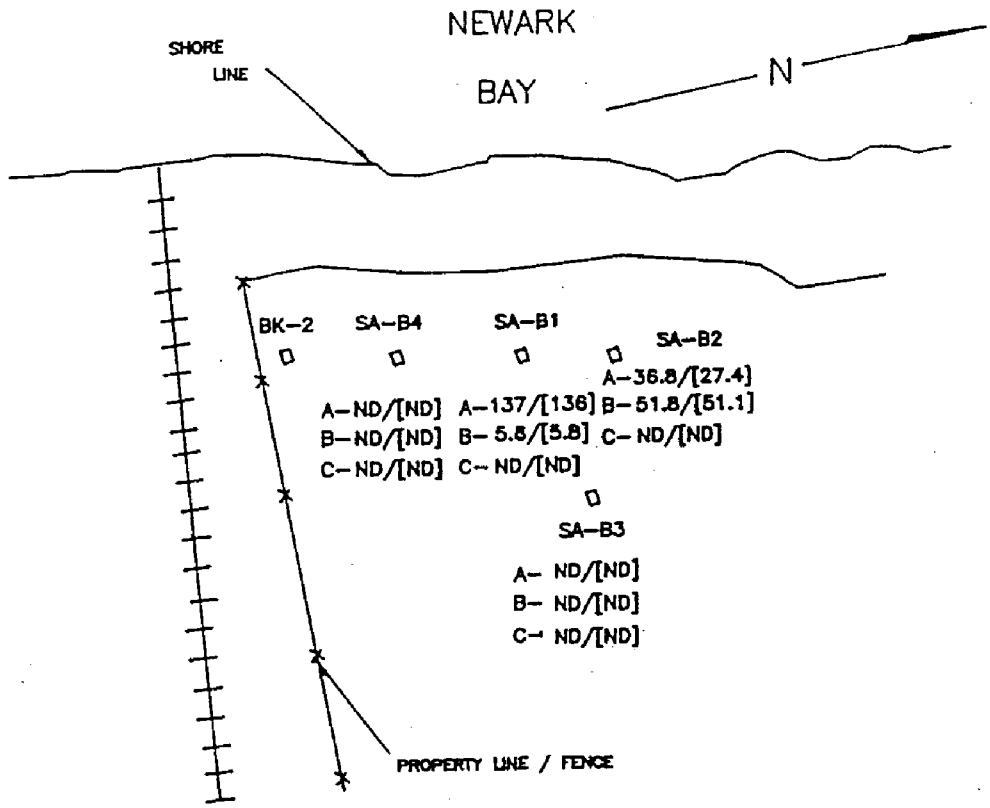
iii) Conclusions and Recommendations

The horizontal and vertical extent of contamination has been delineated in Spill Area B. Contamination is limited to a localized hot spot around sample point SA-B-1A. It is proposed that the first 24 inches of soil around sample point SA-B-1A be excavated. The specific detail of the proposed excavation will be presented in Section 3 of this report.

E. Leachfield 2

i) Background and Descripton of Additional Sampling and Cleanup Completed

As documented in the "Sampling Plan Results and Proposed Supplemental Sampling", February 1988, both samples collected from Leachfield 2 exhibited contaminant concentrations above the unofficial ECRA Cleanup Guidelines of 1 ppm for VOCs and 10 ppm for BNs. The results are tabulated on the following page.



KEY

A — TOTAL BNs(ppm)/[BIS(2-ETHYLHEXYL)PHTHALATE](ppm) – 6–12"

B — TOTAL BNs(ppm)/[BIS(2-ETHYLHEXYL)PHTHALATE](ppm) – 24–30"

C — TOTAL BNs(ppm)/[BIS(2-ETHYLHEXYL)PHTHALATE](ppm) – 48–54"

SCALE
0 30'

EFKA PLASTIC CORPORATION

ANALYTICAL RESULTS
SPILL AREA B

Date: NOV 1989 | Figure 11

THE WHITMAN COMPANIES, INC

Sample	VOCs (ppm)	BNs (ppm)
LF-2A	2.6**/121.9*	1,685.7**/5,662*
LF-2B	6.5**/235.5*	1,466.1**/5,623*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

Based on the above results, further sampling of Leachfield 2 was proposed. See Figure 12 for sample locations. The original intention was to sample at depths adjacent to the leachfield pipes and 6 inches above ground water. However, because the septic tank and leachfield pipes were filled with septic liquid, attempts to dig below the pipes caused pooling of this liquid making digging below the pipes impractical. In the case of sample LF-2E, which was located on the outer fringe of the leachfield, a deeper sample was obtained before the trench filled in with septic liquid.

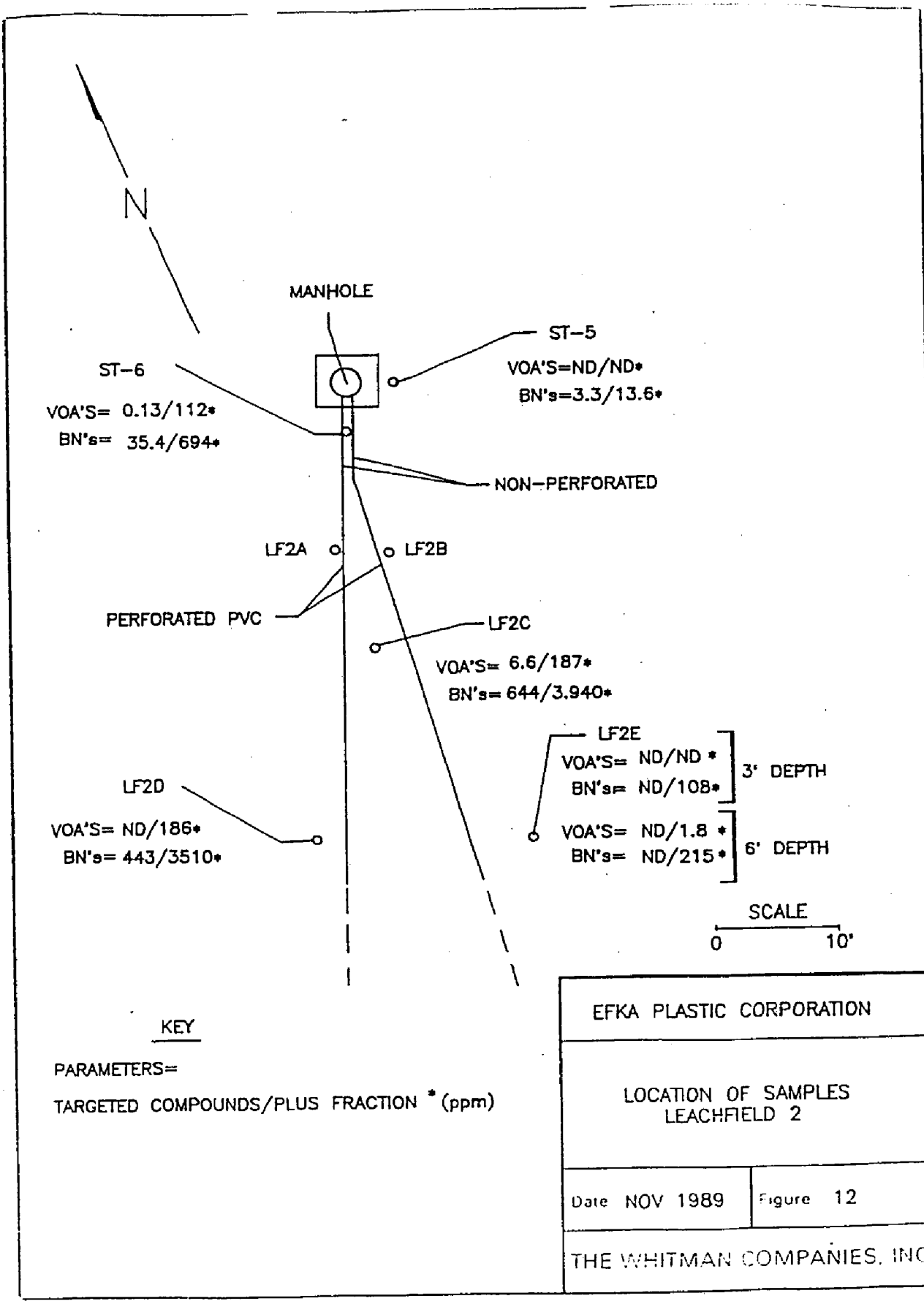
NJDEP in its conditional Sampling Plan approval stated that samples should be taken adjacent to the septic tank. Samples ST-5 and ST-6 satisfy this requirement.

ii) Findings

During July 1989, three (3) additional samples were collected from Leachfield 2 as shown in Figure 12. The results for these samples are tabulated below.

Sample	VOCs (ppm)	BNs (ppm)
ST-5	ND/0.02*	3.3**/13.6*
ST-6	0.13/112*	35.4**/694*
LF-2C	6.6**/186*	644**/3,940*
LF-2D	ND/186*	443**/3,510*
LF-2E1	ND/ND*	ND/108*
LF-2E2	ND/1.8*	ND/215*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels


N
MANHOLE
ST-5
VOA'S=ND/ND*
BN's=3.3/13.6*
ST-6
VOA'S= 0.13/112*
BN's= 35.4/694*
NON-PERFORATED
LF2A
LF2B
PERFORATED PVC
LF2C
VOA'S= 6.6/187*
BN's= 644/3.940*
LF2E
VOA'S= ND/ND *
BN's= ND/108*
3' DEPTH
VOA'S= ND/1.8 *
BN's= ND/215*
6' DEPTH
LF2D
VOA'S= ND/186*
BN's= 443/3510*
SCALE
0
10'
KEY
PARAMETERS=
TARGETED COMPOUNDS/PLUS FRACTION * (ppm)
EFKA PLASTIC CORPORATION
LOCATION OF SAMPLES
LEACHFIELD 2
Date NOV 1989
Figure 12
THE WHITMAN COMPANIES, INC

iii) Conclusions and Recommendations

Leachfield 2 exhibits soil contamination that exceeds ECRA Cleanup Levels for VOCs and BNs. Ground water in this area as shown by monitoring well MW-3 is uncontaminated (See Table 2). It is proposed that the septic tank liquid be pumped out and disposed of properly. The leachfield stone and the soil beneath it will be excavated to mean water level along the length of the leachfield pipe. The specific detail of the proposed excavation will be presented in Section 3 of this report.

F. Storm Sewers

i) Background and Description of Additional Sampling and Cleanup Completed

As documented in the "Sampling Plan Results and Proposed Supplemental Sampling", February 1988 the two storm sewer inlets that were located and sampled exhibited contaminant concentrations exceeding unofficial ECRA guideline levels of 1 ppm of VOCs and 10 ppm for BNs. The results for these storm sewer inlets are tabulated below:

Sample	VOCs (ppm)	BNs (ppm)
SS-1	1.15**/183.5*	296.7**/1,200*
SS-2	1.89**/6.53*	25.9/30.5*

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

ii) Findings

Storm sewer inlet (SS-3) was located and sampled during the July 1989 sampling episode. The results of this analysis are tabulated below.

Sample	VOCs (ppm)	BNs (ppm)
SS-3	ND/6.3*	425**/2,361

* - Library Search Compounds
** - Samples Exceeding Unofficial ECRA Cleanup Levels

iii) Conclusions and Recommendations

It can be inferred that sediments in the storm sewer system at EFKA contain residual levels of hazardous materials and must be removed in order to restore the system to an uncontaminated state. Storm sewer cleanup will follow any soil contamination remediation to prevent re-contamination of the storm sewer system. Specific details are presented in Section 3 of this report.

G. Transformer Area

i) Background and Description of Additional Sampling and Cleanup Completed

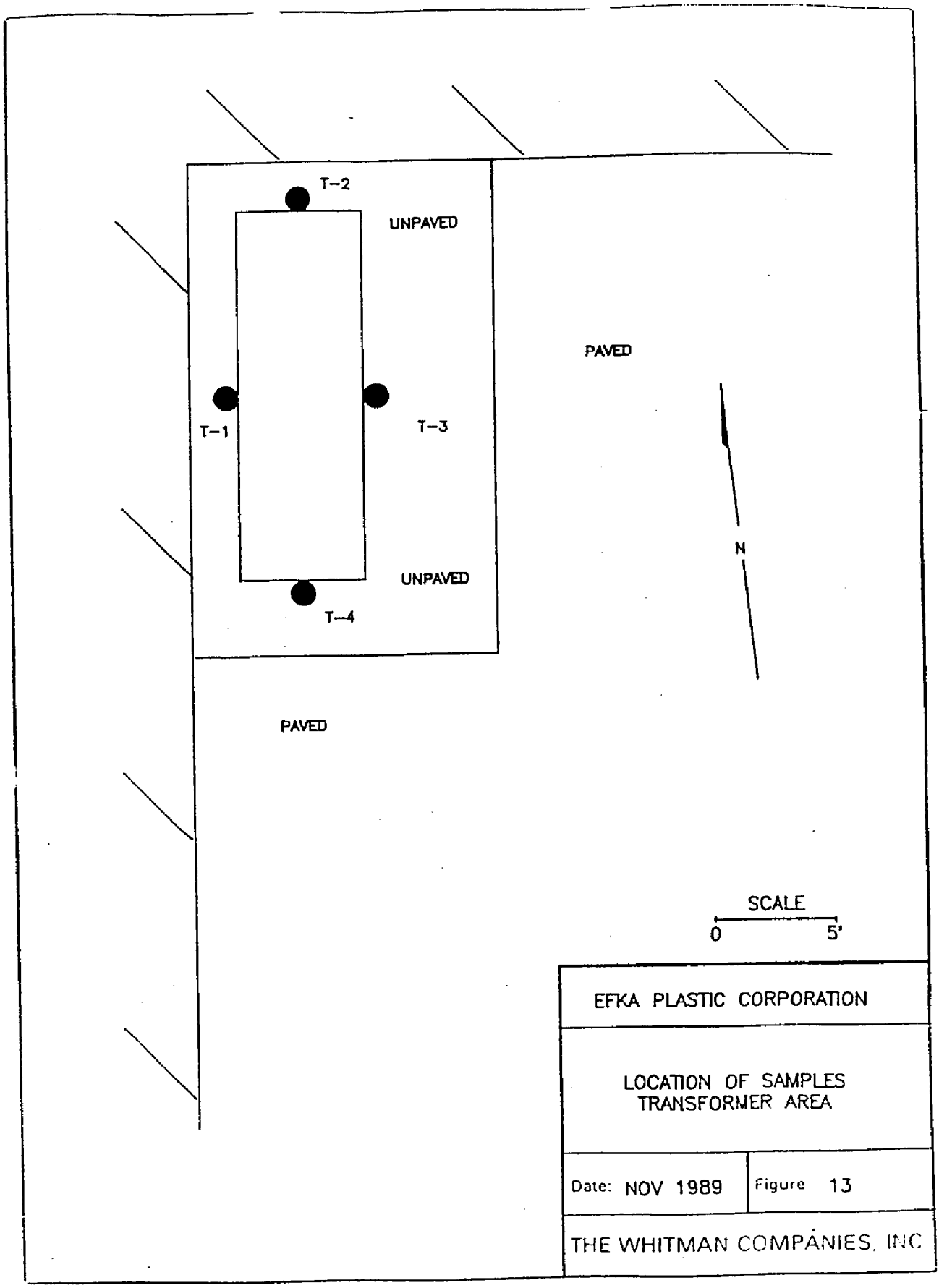
NJDEP in its conditional Sampling Plan approval dated March 20, 1989, requested that the four (4) samples be collected immediately adjacent to the transformer pad. This area had not been previously sampled.

ii) Findings

As stated above, four (4) samples were obtained immediately adjacent to the transformer pad at a depth of 0-6 inches (Figure 13). Sample results are tabulated below:

Sample Location	PCBs (ppm)	PHCs (ppm)
T-1	ND	240**
T-2	2.18	279**
T-3	5.56**	101**
T-4	2.27	842**

** - Samples Exceeding Unofficial ECRA Cleanup Levels


T-2
UNPAVED
PAVED
T-1
T-3
N
UNPAVED
T-4
PAVED
SCALE
0
5'
EFKA PLASTIC CORPORATION
LOCATION OF SAMPLES
TRANSFORMER AREA
Date: NOV 1989
Figure 13
THE WHITMAN COMPANIES, INC

iii) Conclusions and Recommendations

Samples were found to contain elevated levels of PCBs and PHCs. Therefore, excavation of soil around the transformer pad will be required. The specific detail of the proposed excavation wil be presented in Section 3 of this report.

H. Tank Areas C and H

The NJDEP, after reivew of The Whitman Companies February 1988 "Sampling Plan Results and Proposed Supplemental Sampling" report, requested that additional information be presented regarding the determination that tanks C and H do not exist.

An experienced operator using a Fisher Gemini II, metal detector in the narrow search inductive mode attempted to locate Tanks C and H as shown in the approved July Sampling Plan. No tanks were discovered in either location. Both areas were paved with asphalt, and there were no indications that underground storage tanks existed (i.e. fill ports, vent pipes) in either location. Specifications for this instrument are presented in Table 1.

In order to establish further evidence that the metal detector was providing reliable information, the area where Tank C was shown to exist was excavated to a depth of approximately 6 feet. No tank was found to be present. A soil sample was taken from near the base of the excavation and analyzed for Base Neutral compounds. The results are tabulated below:

Sample	Depth	BN (ppm)
TC-1	5-5.5'	ND/8773*

* - Library Search Compounds

Sample results show that no targeted Base Neutral compounds were found. The non-targeted fraction was tentatively identified as non-hazardous unknown alkanes and esters.

TABLE 1

SPECIFICATIONS FOR FISHER GEMINI II

GEMINI II SPECIFICATIONS*

OPERATING FREQUENCY	82KHz
AUDIO OUTPUT FREQUENCY	270Hz
SEARCH MODES	1. NARROW SCAN INDUCTIVE SEARCH 2. WIDE SCAN INDUCTIVE SEARCH
TRACE MODES	1. INDUCTIVE TRACE 2. CONDUCTIVE TRACE
BATTERIES	(2) 9V-NEDA 1603
BATTERY LIFE	40-50 hours
DIMENSIONS	
TRANSMITTER-RECEIVER assy	9¼' X 12" X 6"
Length, on handle	49¼"
WEIGHT, on handle	9 lbs.
WARRANTY	5 Year GOLD SEAL, limited

*Subject to change without notice.

I. Spill Area 3 (SP-3)

An approval condition set by the NJDEP after review of the February 1988 "Sampling Plan Results and Proposed Supplemental Sampling" report was to submit further details on the nature of Spill Area 3 and whether or not soil was present adjacent to the pavement in Spill Area 3.

A small oil stain in the middle of an asphalt surface approximately 60 feet east and south of Leachfield 1 was identified during the preparation of the ECRA-002 submittal.

During the sampling which ensued in late 1987 this spot was barely visible and the asphalt surface in this area was found to be competent. Due to these observations no sample was taken through the asphalt surface.

During the mid 1989 sampling event the oil stain was no longer visible. The stain was located in the middle of an area of heavy traffic (en route to the loading dock) in which the asphalt is continuous and competent. No soil is present adjacent to asphalt surface of the spill.

J. Ground Water Investigation

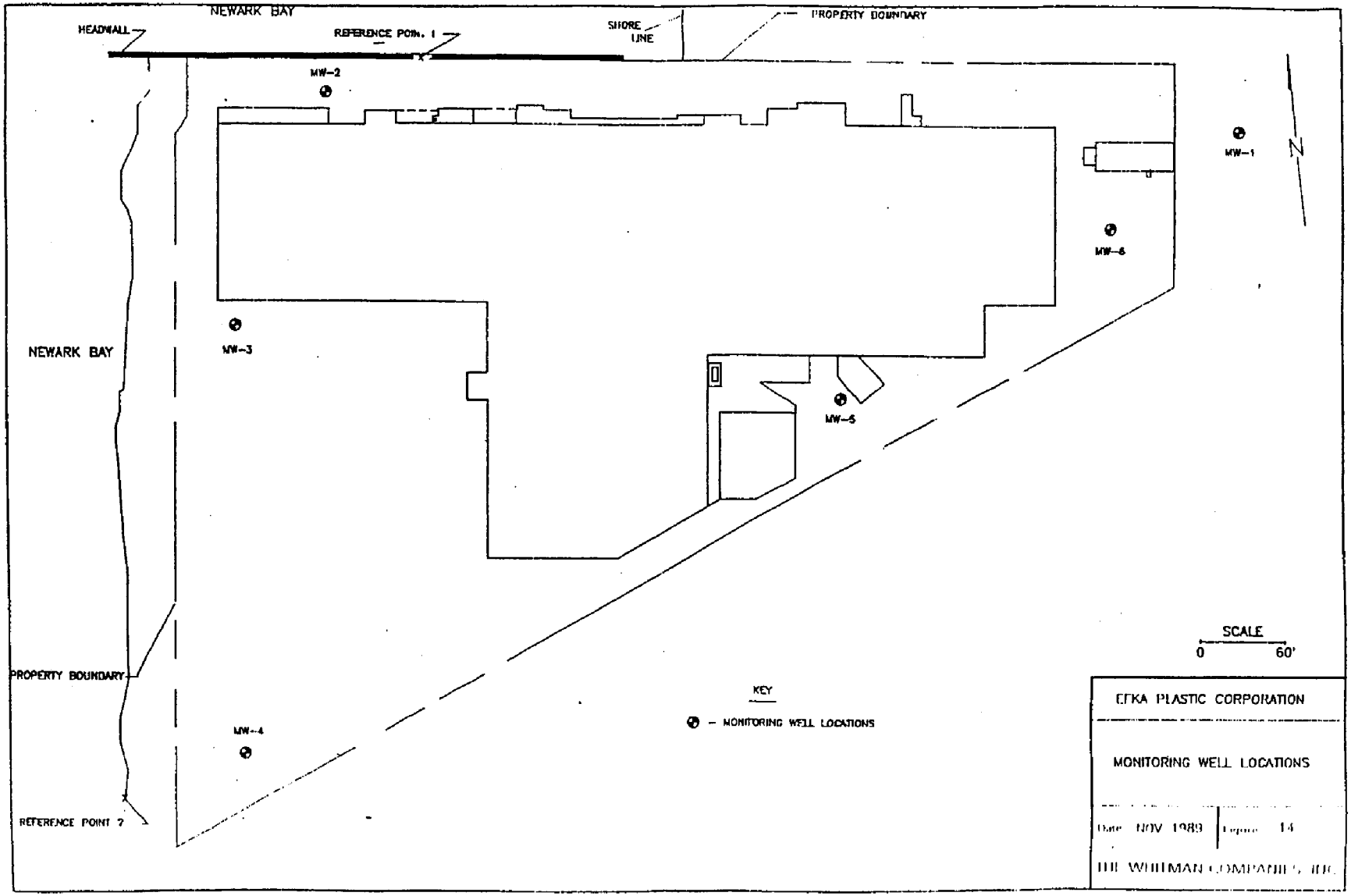
i) Background and Description of Work Performed

During July 1989, six (6) flush mount monitoring wells were installed at EFKA Plastic Corporation in accordance with NJDEP specifications. All wells were constructed with PVC casing and screen. Monitoring wells were placed downgradient of areas of potential environmental concern except for MW-1, which is an upgradient well (Figures 14 and 1). Well logs are included as Attachment 1.

ii) Findings

a. Ground Water Monitoring

In August of 1989 six (6) monitoring well samples and two (2) surface water samples from Newark Bay were obtained and analyzed for Volatile Organics +15 (VOAs) Base Neutrals +15 (BNs) pH, total dissolved solids (TDS) and chloride concentrations.



As Table 2 ilustrates, all sample results were below ECRA ground water cleanup levels with the exception of monitoring well six (MW-6). MW-6, which is downgradient and indicative of ground water quality in the area of Tank F, exceeds the unofficial ECRA cleanup levels for VOAs and BNs. No free product was observed in MW-6.

Measurements of total dissolved solids (TDS) were obtained in order to classify the ground water at EFKA Plastics Corporation. Table 2 illustrates that ground water at EFKA generally exceeds the drinking water standard of 500 mg/l TDS set for potable water. Although MW-6 is marginally below this level, 450 mg/l, it is considered not truly representative as the large excavation of Tank Area F creates an artificial recharge zone for fresh water causing a depression of total dissolved solids in the immediate vicinity. Note that MW-1, an upgradient well relative to MW-6, measured TDS at 570 mg/l.

b. Tidal Investigation

As required by the NJDEP, the effect of tidal fluctuations on the ground water system at EFKA Plastic Corporation was investigated.

Hourly ground water level measurements were taken over a period encompassing a high to low tide cycle on September 15, 1989 and November 15, 1989. All six (6) monitoring wells and two (2) "reference points" were included as data points for this study. The "reference points" were added so as to allow direct measurement of water level fluctuations in Newark Bay. Unfortunately, a lack of foresight in the placement of these reference points did not always allow for accurate nor safe measurement of water level fluctuations in Newark Bay. During the November tidal episode many reference point measurements were omitted in deference to safety.

Raw data from the September and November tidal episodes is presented in Tables 3 and 4 and also plotted as depth to water vs. time in Figures 15 and 16.

TABLE 2

ANALYTICAL RESULTS - MONITORING WELL SAMPLES

Analyte	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	SW-1	SW-2
Ethylbenzene	ND	ND	ND	ND	ND	2.5	ND	ND
Toluene	ND	ND	ND	ND	ND	0.3	ND	ND
Xylene	ND	ND	ND	ND	MD	8.1	ND	ND
Total VOA's	ND/ND*	ND/0.009*	ND/ND*	ND/ND*	ND/0.003*	10.9/4.9*	ND/ND*	ND/ND
Naphthalene	ND	ND	ND	ND	ND	0.33	ND	ND
Total Base Neutrals	ND/0.011*	ND/0.156*	ND/0.020*	ND/ND*	ND/0.011*	0.33/5.4*	ND/ND*	ND/ND*
pH	6.5	6.4	6.4	6.4	6.3	6.3	7.4	7.4
TDS (mg/l)	570	5,200	8,310	2,050	930	450	18,450	18,900
Chloride (mg/l)	23	210	73	820	270	17	9,700	9,400

All results presented in parts per million (ppm)
* - Library Search Compounds

SW-1 obtained near RP-1; See Figure 14
SW-2 obtained near RP-2; See Figure 14

Inspection of Figure 15 reveals that only MW-3 and MW-4 are influenced significantly by tidal fluctuations. This is not unexpected as MW-3 and MW-4 are located in closest proximity to Newark Bay. The lack of response of MW-2 to tidal fluctuations can be attributed to two (2) factors:

1. The presence of a large headwall constructed to prevent soil erosion along the northwest border of the EFKA property effectively eliminates the northern hydraulic connection one would otherwise expect between Newark Bay and MW-2.

2. The hydraulic conductivity of the fill in the vicinity of MW-2 is very low as evidenced by the very slow recharge of this well following excavation prior to sampling.

c. Ground Water Contour Maps

The data compiled from the tidal studies of 9/15/89 and 11/15/89 was used to plot four (4) ground water contour maps. Two (2) low tide ground water contour maps are presented in Figures 17 and 17A, and two (2) high tide ground water contour maps are presented in Figures 18 and 18A.

Inspection of these four (4) ground water contour maps show that ground water is consistently flowing in a westerly direction across the site towards Newark Bay. Figure 18 reflects the apparent reversal of ground water flow over a small area of the western portion of the site. This effect is due to the periodic tidal fluctuations noted previously in MW-3 and MW-4. The "reversal" is short lived as the tidal head in MW-3 and MW-4 quickly subsides.

Calculations of mean ground water level for the 9/15/89 and 11/15/89 tidal episodes appear in Tables 5 and 6. Mean ground water level contour maps are presented in Figures 19 and 19A. These maps represent the "average" ground water flow conditions on-site.

iii) Conclusions and Recommendations

a. Ground water samples obtained from MW-6 were found to exceed the unofficial ECRA cleanup level for VOAs and BNs.

b. The tidal fluctuations of Newark Bay on the ground water system at EFKA is small and limited to the extreme western portion of the site.

c. Ground water at EFKA Plastics Corporation is flowing in a westerly direction towards Newark Bay.

Several factors should be considered when assessing the impact of ground water contamination in the vicinity of MW-6:

1. Ground water on-site at EFKA was found to exceed the drinking water standard for total dissolved solids making it unsuitable for use as a drinking water supply.

2. No free product was found to be present in MW-6.

3. No water supply wells have been identified in the vicinity of the site according to searches of NJDEP files.

4. It is apparent that the contamination found in MW-6 is originating from Tank Area F (See Figure 1). As described in Section 3 of this report contaminated soil in this area will be removed.

Based on the above considerations, it is proposed that no ground water remedial activity is warranted in the vicinity of MW-6. It is further recommended that the six (6) monitoring wells on-site be abandoned in place by a certified well driller according to NJDEP specifications.

TABLE 3

TIDAL MEASUREMENTS (9/15/89) - RAW DATA

Time	MW-1*	MW-2*	MW-3*	MW-4*	MW-5*	MW-6*	RP-1	RP-2
6:53-7:22	4.48	3.77	4.47	4.35	4.76	4.43	2.53	0.7[illegible]
7:50-8:05	4.48	3.73	4.10	3.84	4.74	4.42	1.67	0.2[illegible]
8:48-8:59	4.46	3.72	3.57	3.06	4.72	4.40	1.53	0.00
9:49-10:08	4.46	3.72	3.46	2.60	4.71	4.46	2.24	0.87
10:50-11:05	4.49	3.72	3.92	2.93	4.73	4.42	4.32	2.28
11:48-12:04	4.49	3.75	4.56	3.27	4.73	4.42	5.21	3.85
12:49-1:06	4.46	3.76	5.17	3.17	4.75	4.39	6.38	5.18
1:48-2:08	4.47	3.80	5.68	4.13	4.73	4.44	7.88	6.30
2:47-3:08	4.48	3.81	6.19	4.41	4.75	4.42	8.10	6.00
3:50-4:13	4.48	3.83	6.59	4.66	4.76	4.42	8.10	6.15

*Measurements in Feet from top of Casing

TABLE 4

TIDAL MEASUREMENTS (11/15/89) - RAW DATA

Time	MW-1*	MW-2*	MW-3*	MW-4*	MW-5*	MW-6*	RP-1	RP-2
8:33-8:45	3.51	3.40	4.89	3.95	4.32	3.87	2.00	-
9:25-9:37	3.56	3.34	3.80	3.32	4.32	3.94	1.70	-
10:33-10:45	3.52	3.34	3.50	2.76	4.23	3.89	2.00	-
11:30-11:42	3.55	3.33	3.69	2.72	4.29	3.88	2.94	-
12:33-12:47	3.56	3.37	4.27	3.02	4.16	3.92	4.66	-
1:28-1:38	3.61	3.39	4.88	3.51	4.32	3.88	-	-
2:29-2:39	3.54	3.36	5.37	3.81	4.23	3.91	-	-
3:30-3:38	3:57	3:30	5.97	4.14	4.28	3.90	-	-
4:26-4:36	3.56	3.35	6.28	4.34	4.32	3.87	-	-

*Measurements in feet from Top of Casing

TABLE 5

MEAN GROUND WATER LEVEL (9/15/89)

Time	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
6:53-4:13	4.48	3.76	4.75	3.70	4.74	4.42

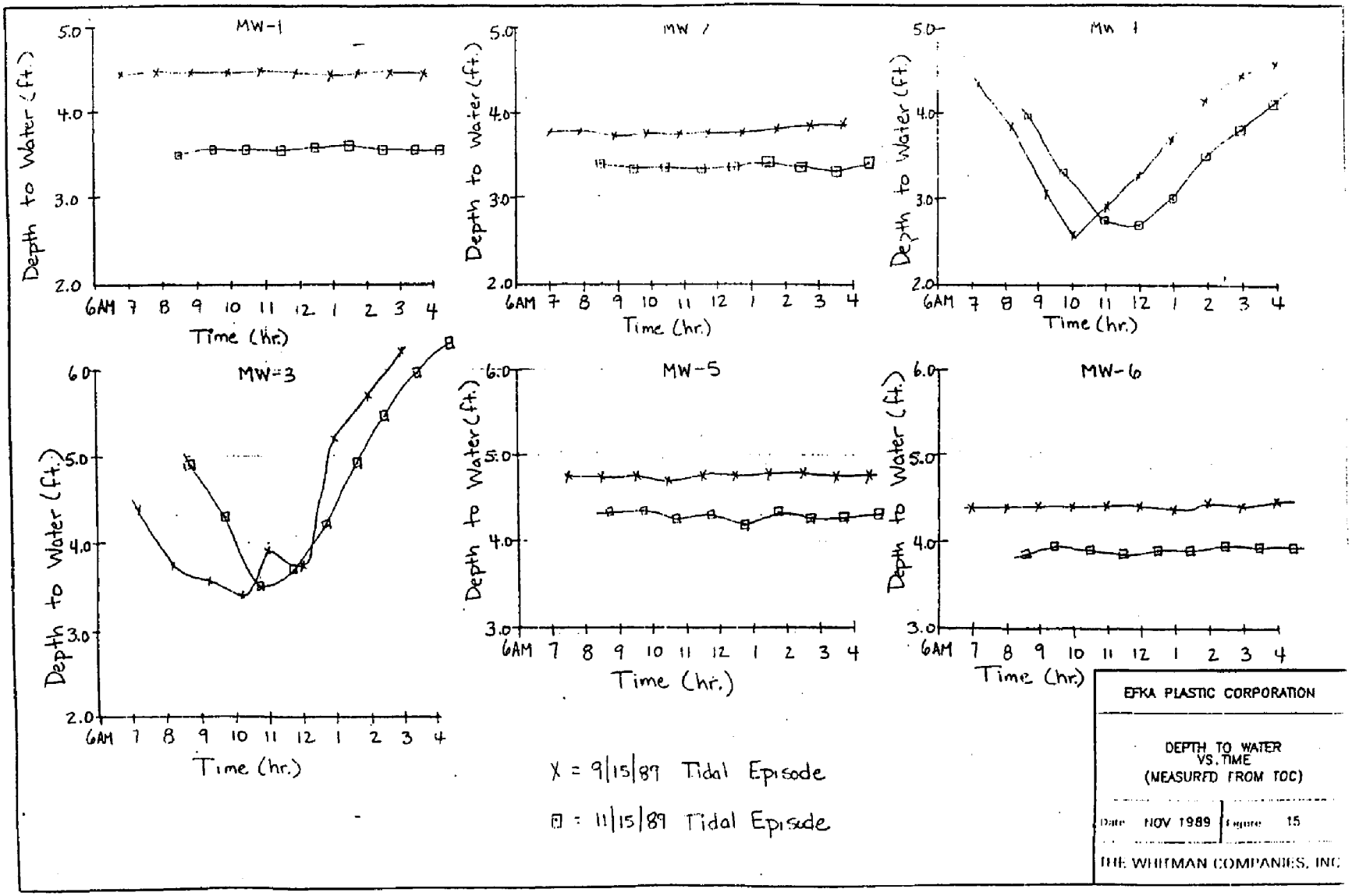
Measurements in feet from Top of Casing

TABLE 6

MEAN GROUND WATER LEVEL (11/15/89)

Time	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
8:33-4:36	3.55	3.35	4.74	3.51	4.27	3.90

Measurements in feet from Top of Casing

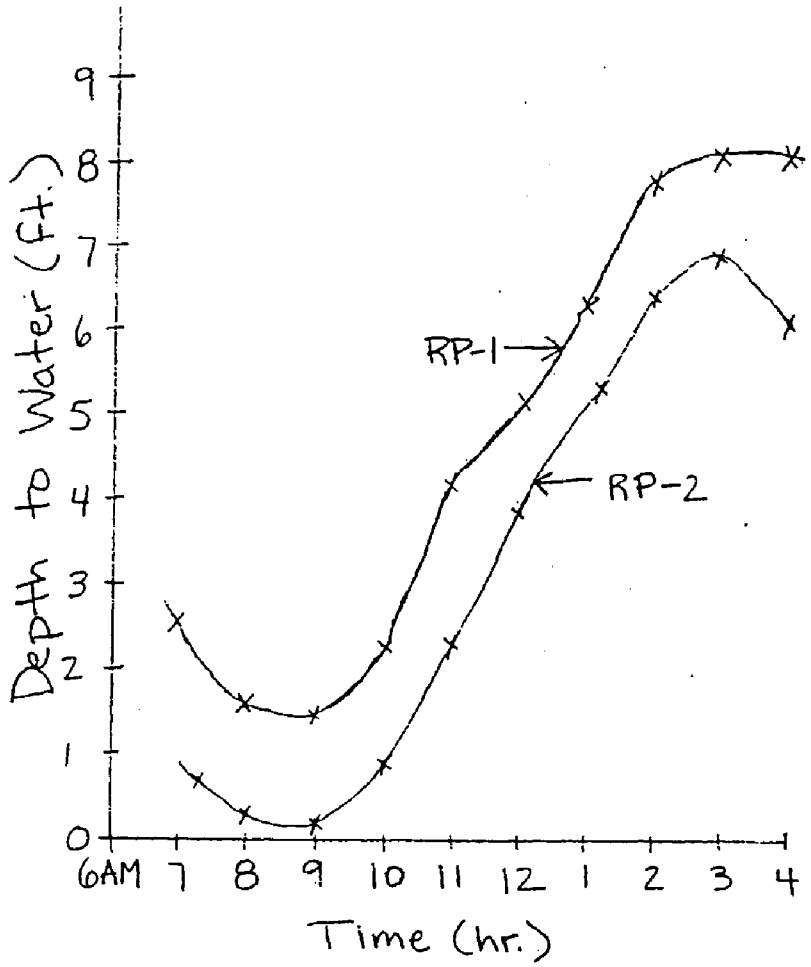


EFKA PLASTIC CORPORATION

DEPTH TO WATER VS. TIME (MEASURED FROM TOC)

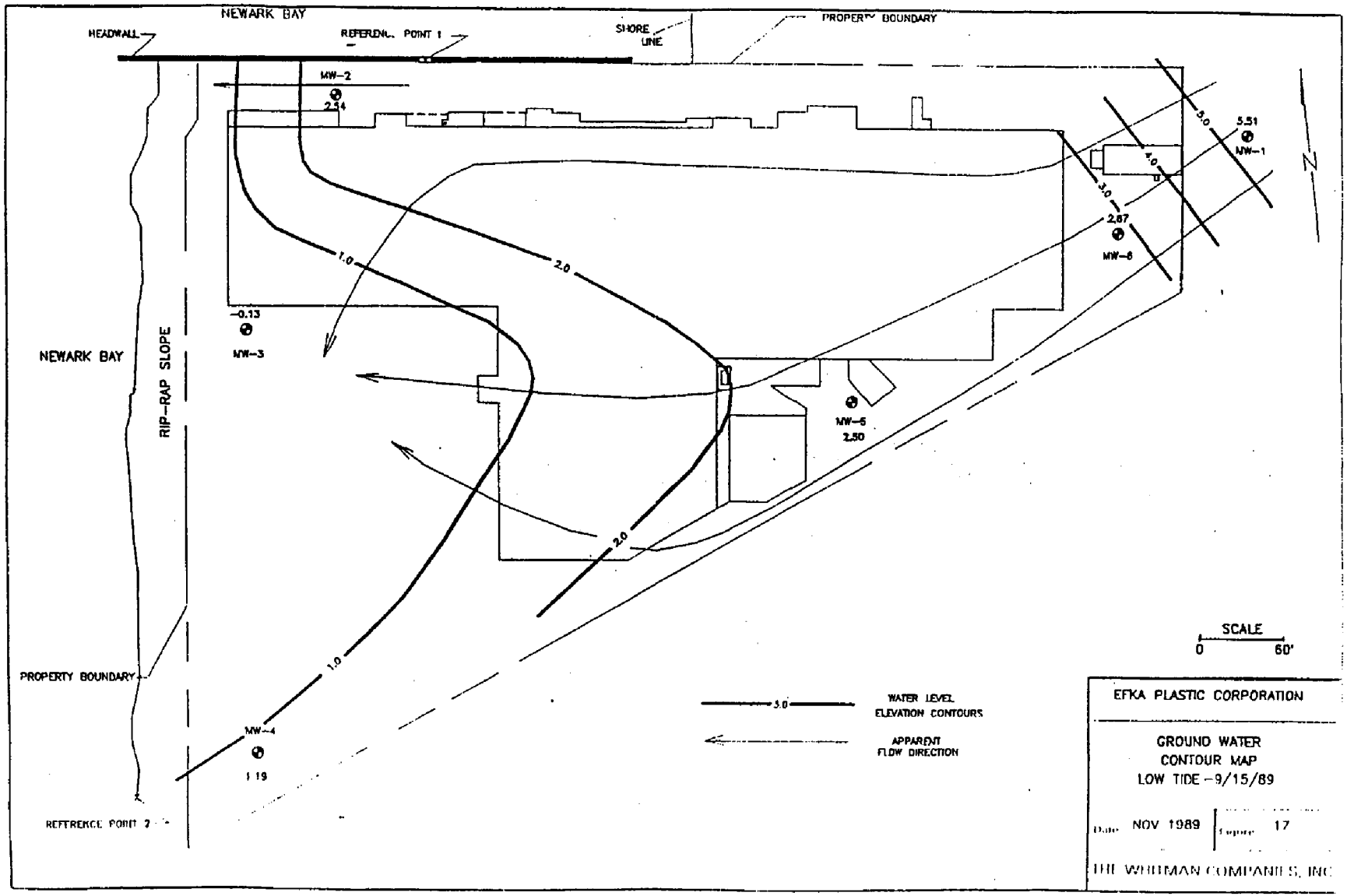
Date NOV 1989 | Figure 15

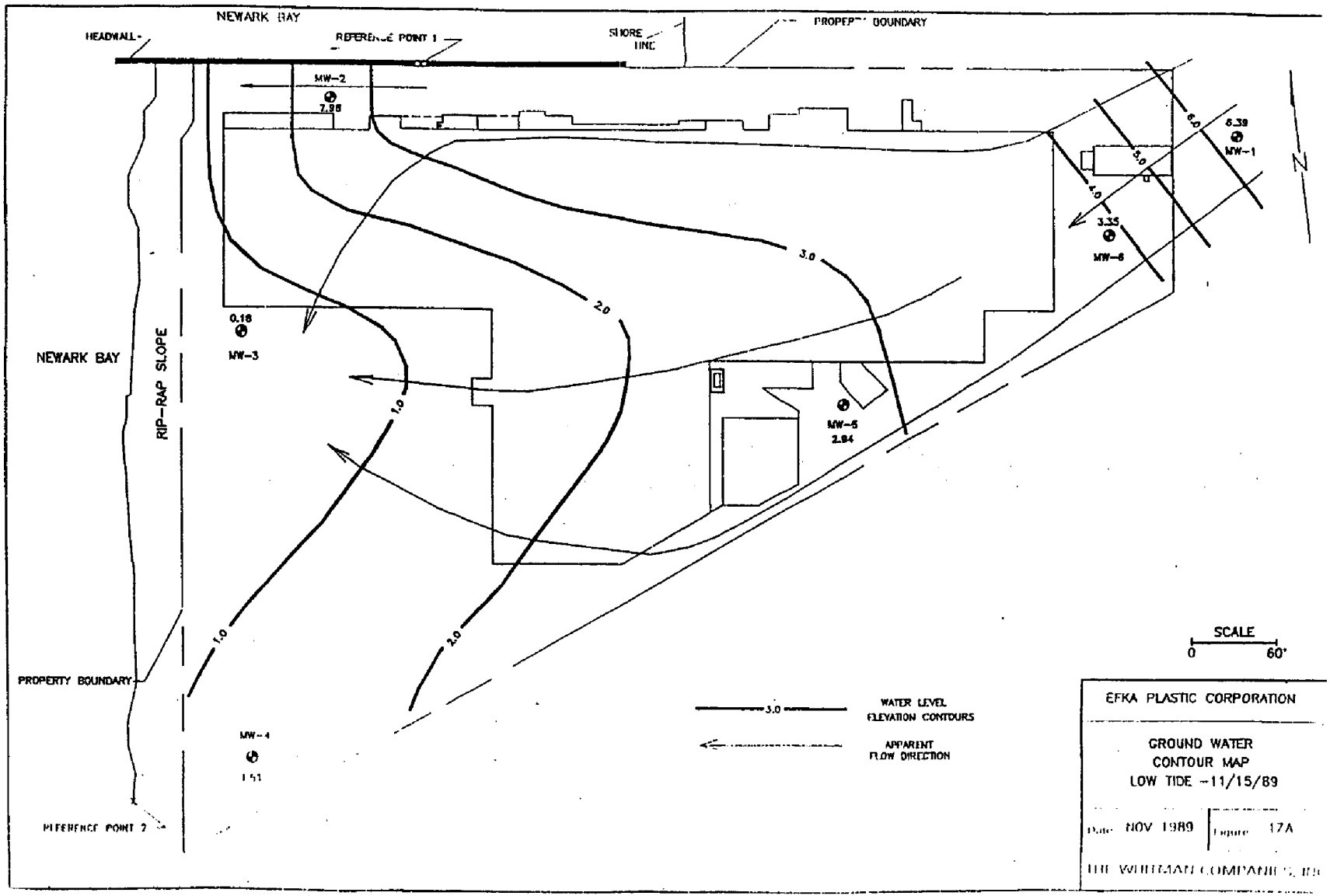
THE WHITMAN COMPANIES, INC.



X = 9/15/89 Tidal Episode

EFKA PLASTIC CORPORATION	
DEPTH TO WATER VS. TIME	
Date: NOV 1989	Figure. 16
THE WHITMAN COMPANIES, INC	





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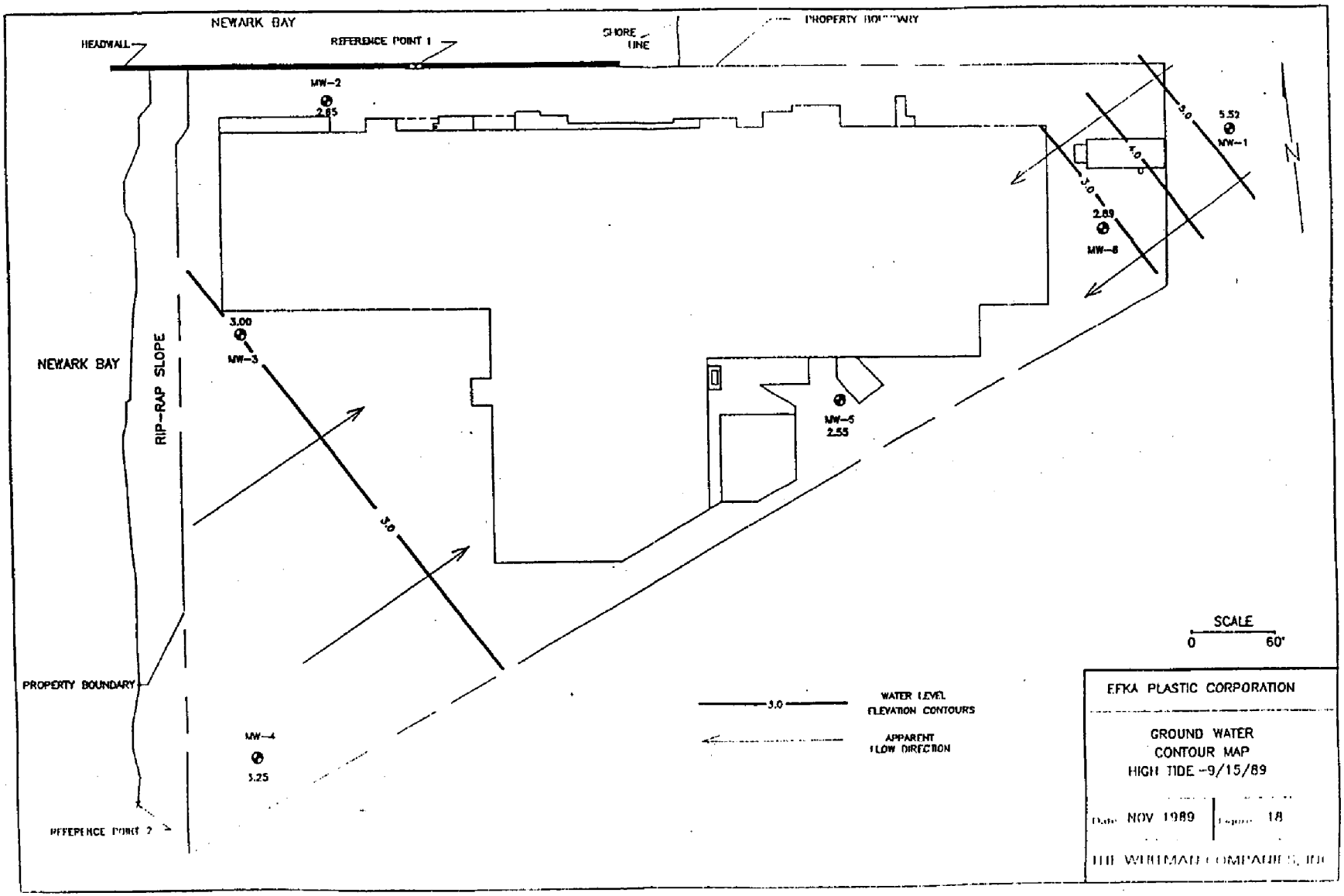

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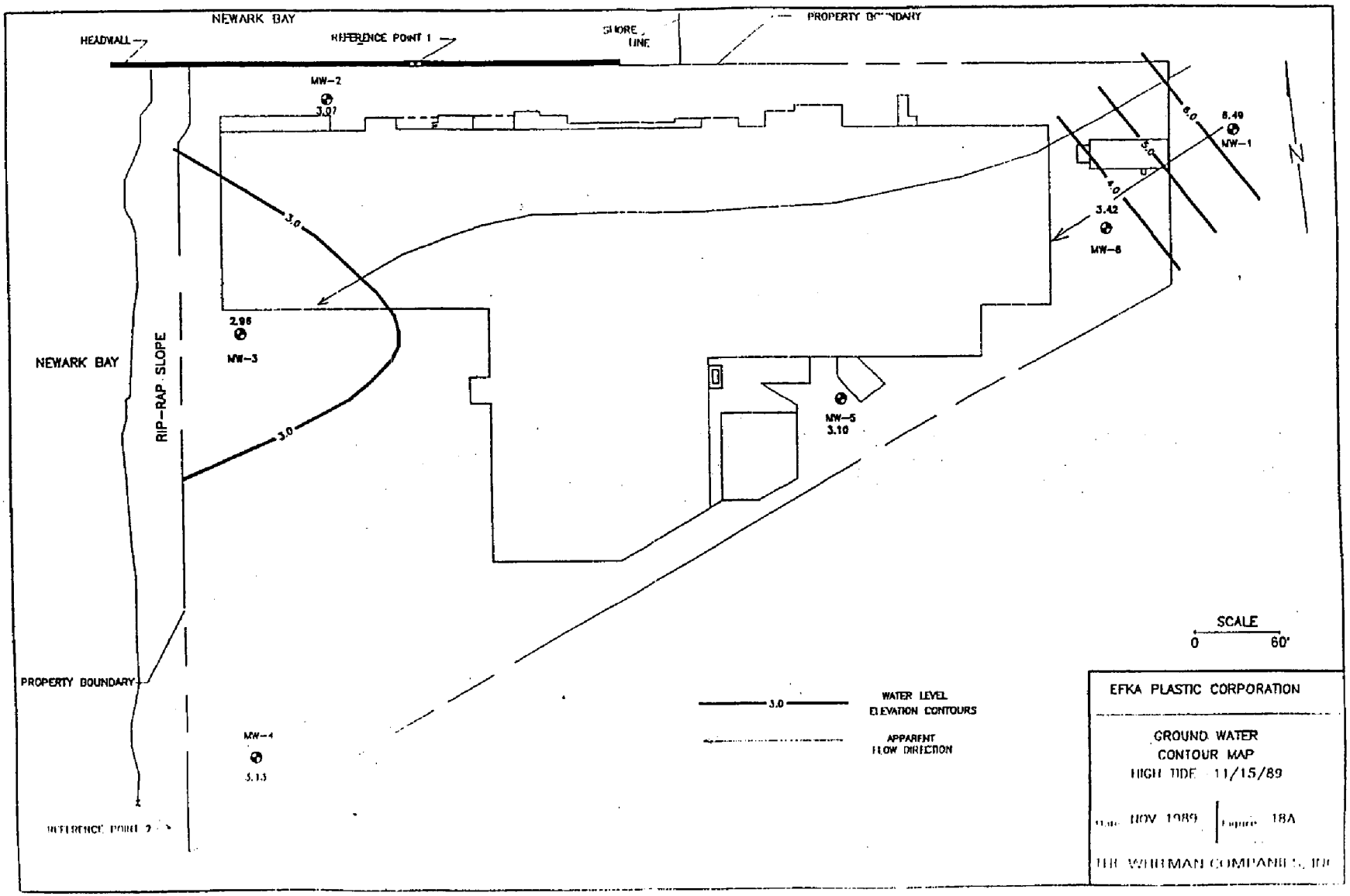

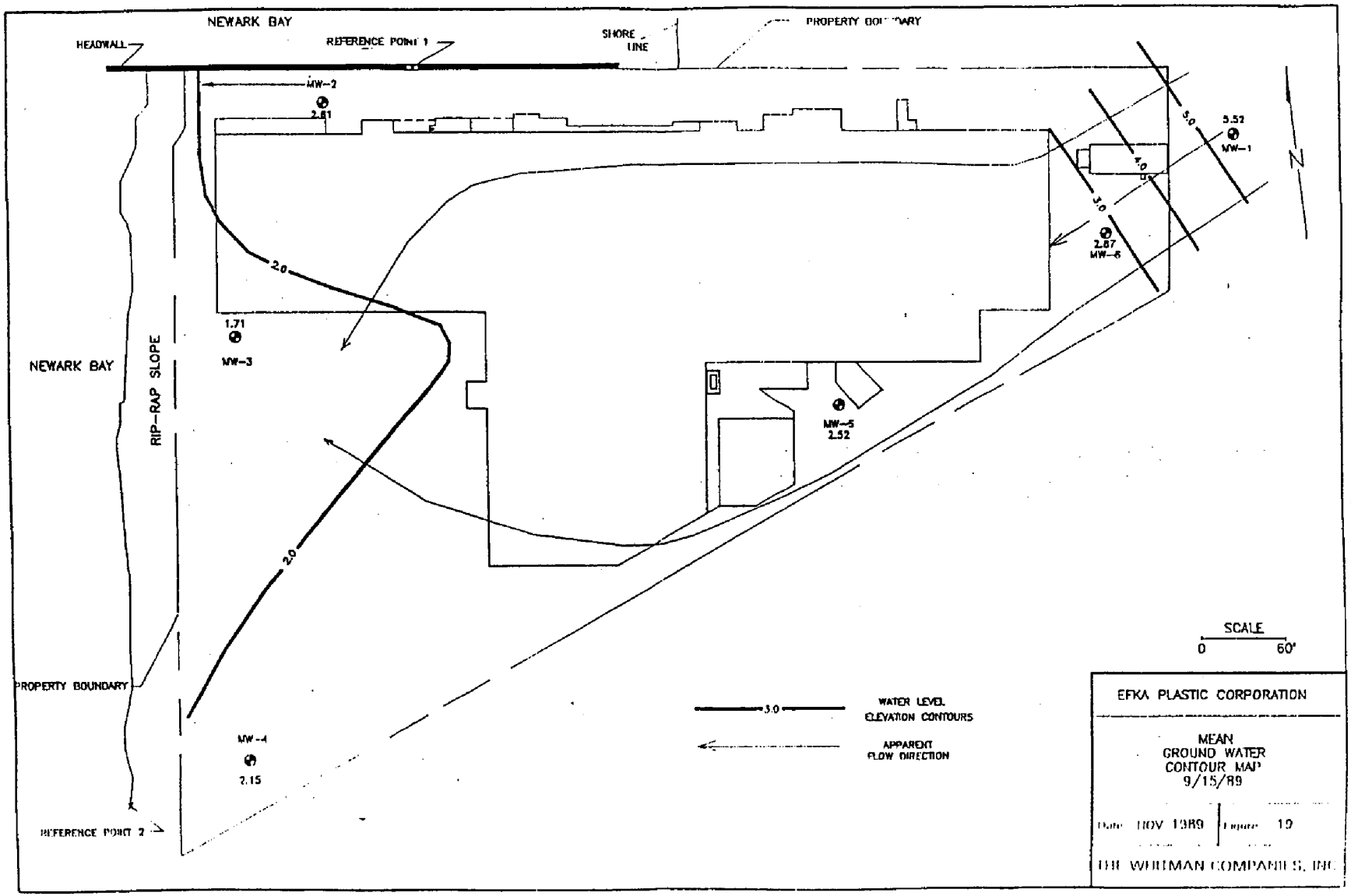

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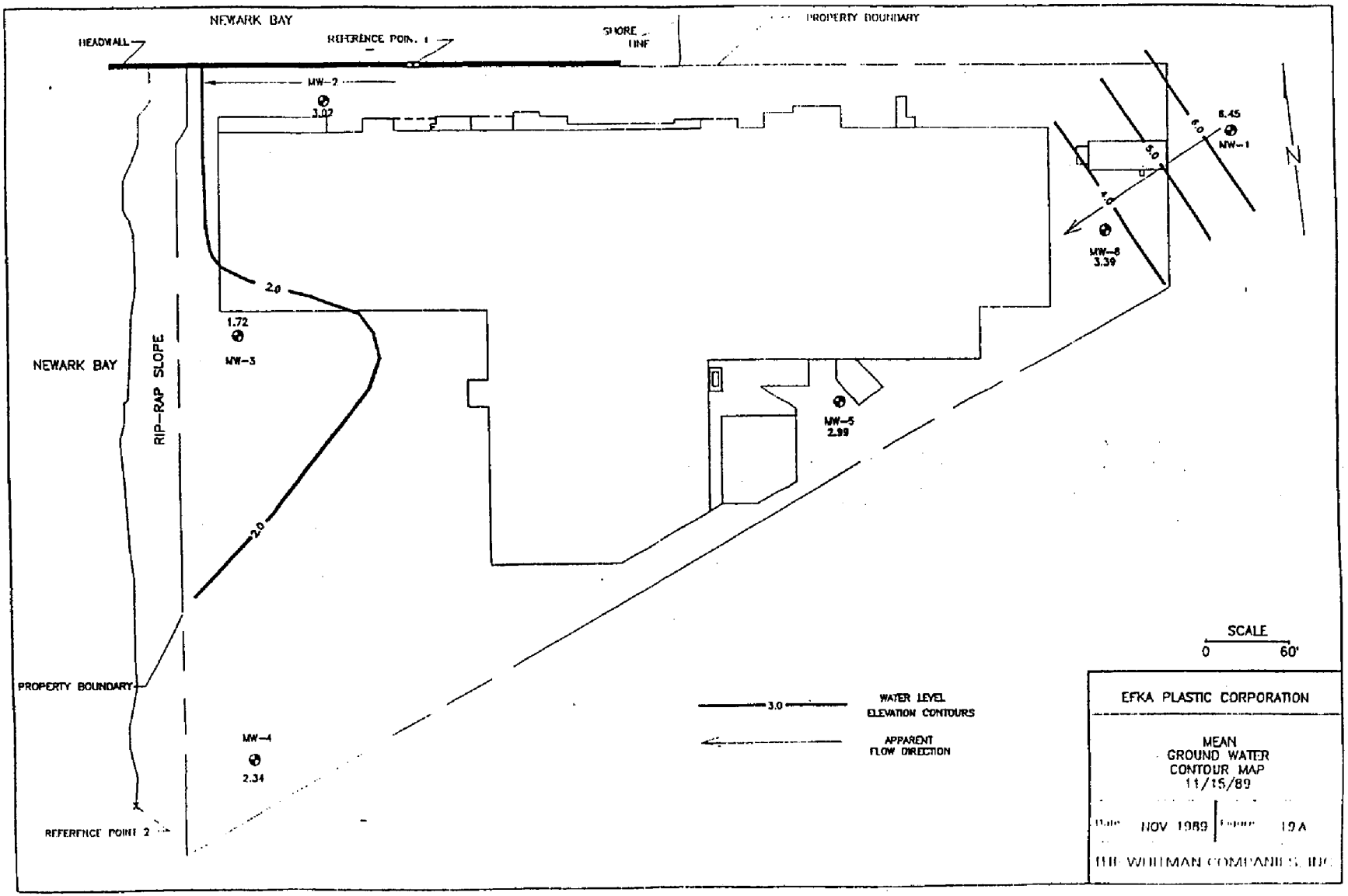


3. PROPOSED CLEANUP AND REMEDIATION

It is proposed that the level of cleanup for the areas of environmental concern at EFKA Plastic Corporation reflect the Unofficial ECRA Action Limits with exceptions made for Spill Area A and Monitoring Well 6. The reasoning for the remediation chosen in these two (2) areas is detailed in Section 2 of this report.

Compound	Soil (ppm)
Total Volatiles	1
Total Base Neutrals	10*[1]
Bis(2-ethylhexyl) Phthalate	100*[2]
Total Petroleum Hydrocarbons	100
Total PCB's	5

*[1] The February 1988 "Sampling Plan Results and Proposed Supplemental Sampling for EFKA Plastic Corporation" discusses in Section 3 that coal cinders were used as fill in sections of the EFKA property. Where post-excavation sampling is to take place in areas of fill, the proposed cleanup level will be adjusted upwards to account for the contribution being made by the cinder fill. It is anticipated that cinder fill may be encountered during post-excavation sampling of Leachfield 2.

*[2] Bis(2-ethylhexyl) Phthalate, a Base Neutral compound, is listed separately because it accounts for the majority of base neutral contamination found in Spill Areas A and B. As stated in Section 2 of this report, the current cleanup level for Bis(2-ethylhexyl) Phthalate in soil is 100 ppm according to Kate Joyce, Chief of the Environmental Toxicology and Risk Assessment Section within BEERA.

A. Tank Area E

Approximately 50 cubic yards (68 tons) of soil which was contaminated with virgin petroleum fuel was previously excavated from Tank Area E and will be classified ID-27 for disposal purposes. Disposal will take place at the Hackensack Meadowlands Development Commission Landfill (HMDC) inasmuch as Bayonne is located within Hudson County.

Backfill	68 tons @ $20/ton	$ 1,360
Loading	68 tons @ $10/ton	$ 680
Transportation	68 tons @ $40/ton	$ 2,720
Disposal	68 tons @ $40/ton	$ 2,720
Subtotal - Handling of Soil		$ 7,480
Cleanup Subcontractor's Insurance and Sales Tax		$ 898
Subtotal		$ 8,378
Engineering 10%		$ 838
Contingency 10%		$ 838
Total		$10,054

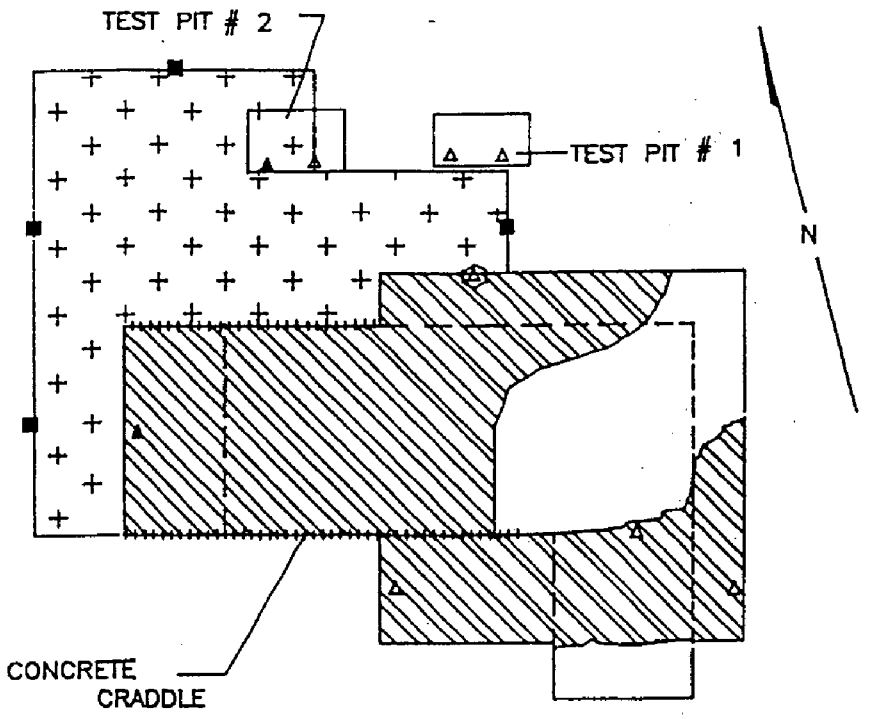
B. Tank Area F

i) Proposed Remediation

Contaminated soil surrounding Tank F2 will be excavated to reduce PHCs and VOCs to a level below 100 ppm and 1 ppm respectively. Excavation will proceed down to ground water, approximately 4.5 feet below grade. The proposed area of excavation is shown in Figure 20.

ii) Post-Excavation Sampling

Four (4) post-excavation samples are proposed along the perimeter of the excavation. See Figure 20. These samples will be sidewall samples taken immediately above ground water and analyzed for PHCs and VOCs.



MW-6

KEY

- △ PHC LEVELS BELOW ECRA LIMITS
- ▲ PHC LEVELS ABOVE ECRA LIMITS
- ⬡ VOC LEVELS ABOVE ECRA LIMITS
- MOST RECENT LIMITS OF EXCAVATION
- PROPOSED ADDITIONAL EXCAVATION
- ■ PROPOSED POST-EXCAVATION SAMPLING POINT

SCALE
0 10'

EFKA PLASTIC CORPORATION

PROPOSED AREA OF EXCAVATION
TANK AREA F

Date: NOV 1989 | Figure: 20

THE WHITMAN COMPANIES, INC.

iii) Cost Estimate and Magnitude of Cleanup

It is estimated that approximately 81 cubic yards (110 tons) will be removed from the area shown on Figure 20. The actual extent of excavation may vary dependent on field observations and readings obtained from portable field instrumentation.

In addition to the soil proposed to be excavated as part of this cleanup plan, about 80 cubic yards (110 tons) of soil which was previously excavated will have to be disposed of and is included as part of the soil disposal costs presented below.

For purposes of this estimate, it will be assumed that 110 tons of soil will be excavated and 220 tons will be disposed of. Soil from Tank Area F was contaminated with virgin petroleum fuel and will be classified ID-27 for disposal purposes. Since Bayonne is located in Hudson County soil will be disposed of at the Hackensack Meadowlands Development Commission Landfill (HMDC).

Excavation	110 tons @ $50/ton	$ 5,500
Backfill	220 tons @ $20/ton	$ 4,400
Loading	220 tons @ $10/ton	$ 2,200
Transportation	220 tons @ $40/ton	$ 8,800
Disposal	220 tons @ $40/ton	$ 8,800
	Subtotal - Handling of Soil	$29,700
	Cleanup Subcontractor's Insurance and Sales Tax	$ 3,564
	Sampling and Analysis	$ 3,600
	Subtotal	$36,864
	Engineering 10%	$ 3,686
	Contingency 10%	$ 3,686
	Total	$44,236

C. Spill Area A

i) Proposed Remediation

Based on the considerations detailed in Section 2 of this report the following remedial activity is proposed for Spill Area A.

1. Three (3) surface soil "hot spots" exceeding 5,000 ppm of Bis(2-ethylhexyl) Phthalate will be excavated to a depth of 1 foot. Also, soil located in a 3'x3'x1' concrete pit will be excavated (Figure 21).

2. A Phillips 66 GeoSeal® impermeable liner will be installed to cover the entire 240 foot x 46 foot surface of Spill Area A.

3. The liner will be covered with 2 foot of clean fill followed by a layer of crushed stone.

4. This entire area will be paved with 3 inches of asphalt.

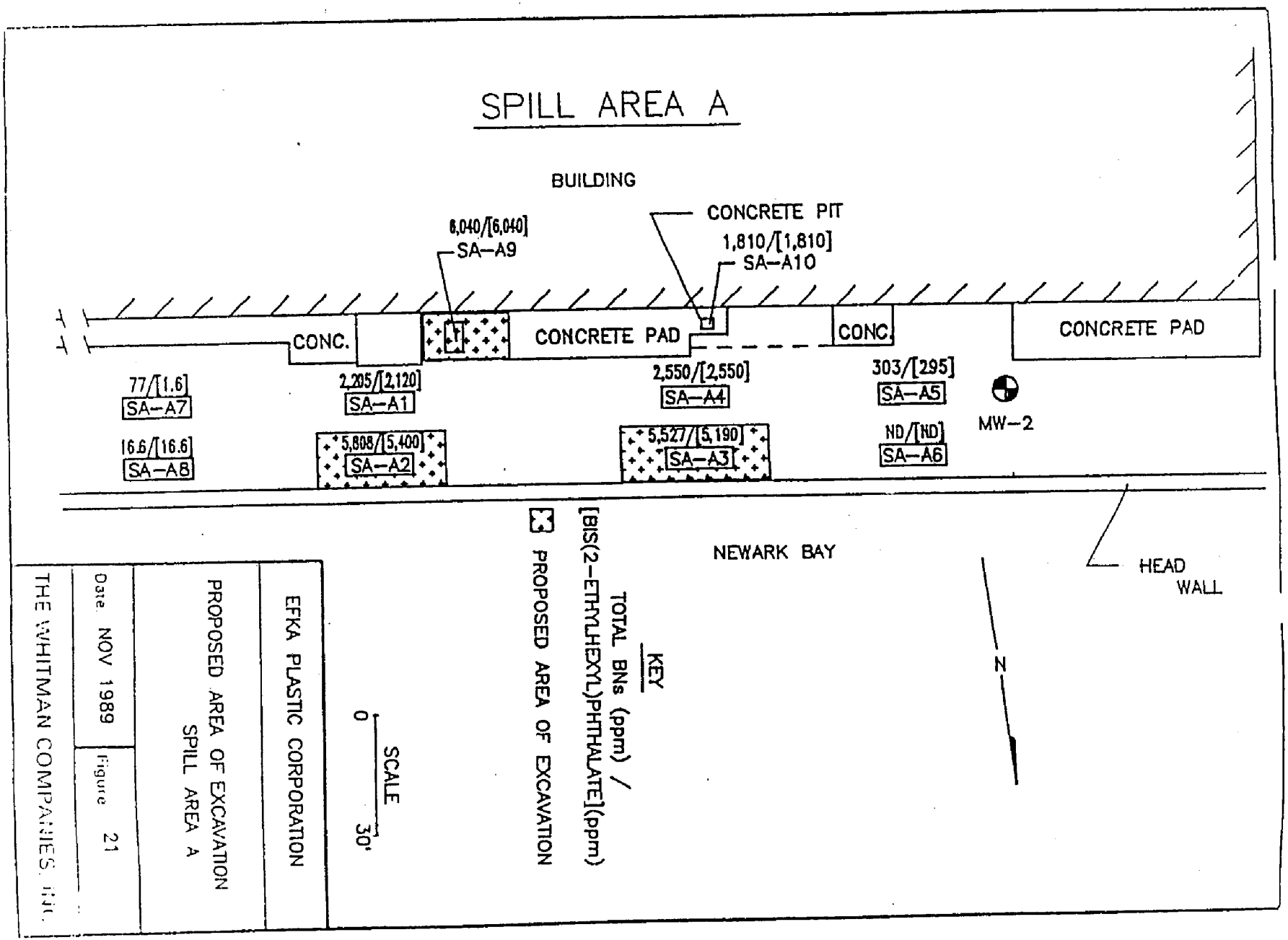
ii) Post-Excavation Sampling

Three (3) surface soil "hot spots" exceeding 5,000 ppm of Bis(2-ethylhexyl) Phthalate will be excavated. No post-excavation samples are proposed.

iii) Cost Estimate and Magnitude of Cleanup

It is estimated that approximately 38 cubic yards (52 tons) will be removed from the areas shown in Figure 21.

Bis(2-ethylhexyl) Phthalate, U028, is a listed hazardous waste and soil contaminated with more than 28 ppm of Bis(2-ethylhexyl) Phthalate may not be landfilled after June 8, 1991.


SPILL AREA A
BUILDING
CONCRETE PIT
6,040/[6,040]
SA–A9
1,810/[1,810]
SA–A10
CONC.
CONCRETE PAD
CONC.
CONCRETE PAD
77/[1.6]
SA–A7
2,205/[2,120]
SA–A1
2,550/[2,550]
SA–A4
303/[295]
SA–A5
MW–2
16.6/[16.6]
SA–A8
5,808/[5,400]
SA–A2
5,527/[5,190]
SA–A3
ND/[ND]
SA–A6
NEWARK BAY
HEAD WALL
KEY
TOTAL BNs (ppm) / [BIS(2–ETHYLHEXYL)PHTHALATE](ppm)
PROPOSED AREA OF EXCAVATION
N
SCALE
0
30'
EFKA PLASTIC CORPORATION
PROPOSED AREA OF EXCAVATION
SPILL AREA A
Date NOV 1989
Figure 21
THE WHITMAN COMPANIES, INC.

It is proposed that all excavated soil in Spill Area A be disposed of prior to June 8, 1991 at GSX in Pinewood, South Carolina.

Excavation	52 tons @ $50/ton	$ 2,600
Backfill	52 tons @ $20/ton	$ 1,040
Loading	52 tons @ $10/ton	$ 520
Transportation	52 tons @ $40/ton	$ 2,080
Disposal	52 tons @ $260/ton	$13,520
Subtotal - Handling of Soil		$21,760
Cleanup Subcontractor's Insurance and Sales Tax		$ 2,611
Grade Surface		$ 2,000
GeoSeal® Liner 11,040 ft^2 @ $0.50/$ft^2$		$ 5,520
Subtotal		$29,891
Engineering 10%		$ 2,989
Contingency 10%		$ 2,989
Total		$35,869*[1]

*[1] Items 3 and 4 listed under the Proposed Remediation Section are not included as part of this cost estimate inasmuch as these steps will be undertaken as part of the proposed future development of the property.

D. Spill Area B

i) Proposed Remediation

A 3 foot x 3 foot x 2 foot area of soil surrounding sample location SA-B-1A will be excavated (See Figure 11).

ii) Post-Excavation Sampling

It has already been established that soil below 24 inches in the area of sample location SA-B-1A does not exceed unofficial ECRA cleanup levels thus no post-excavation sampling is proposed.

iii) Cost Estimate and Magnitude of Cleanup

It is estimated that 0.7 cubic yards (1 ton) of soil contaminated with Bis(2-ethylhexyl) phthalate will be excavated and disposed of prior to June 8, 1991 at GSX in Pinewood, South Carolina.

Excavation	1 ton @ $50/ton	$500
Backfill	1 ton @ $20/ton	$ 20
Loading	1 ton @ $10/ton	$ 10
Transportation	1 ton @ $40/ton	$ 40
Disposal	1 ton @ $260/ton	$380
Subtotal - Handling of Soil		$380
Cleanup Subcontractor's Insurance and Sales Tax		$ 46
Subtotal		$426
Engineering 10%		$ 43
Contingency 10%		$ 43
Total		$512

E. Septic Tanks 1-4A

i) Proposed Remediation

The contents of septic tanks 1-4A will be pumped out and properly disposed of.

ii) Cost Estimate and Magnitude of Cleanup

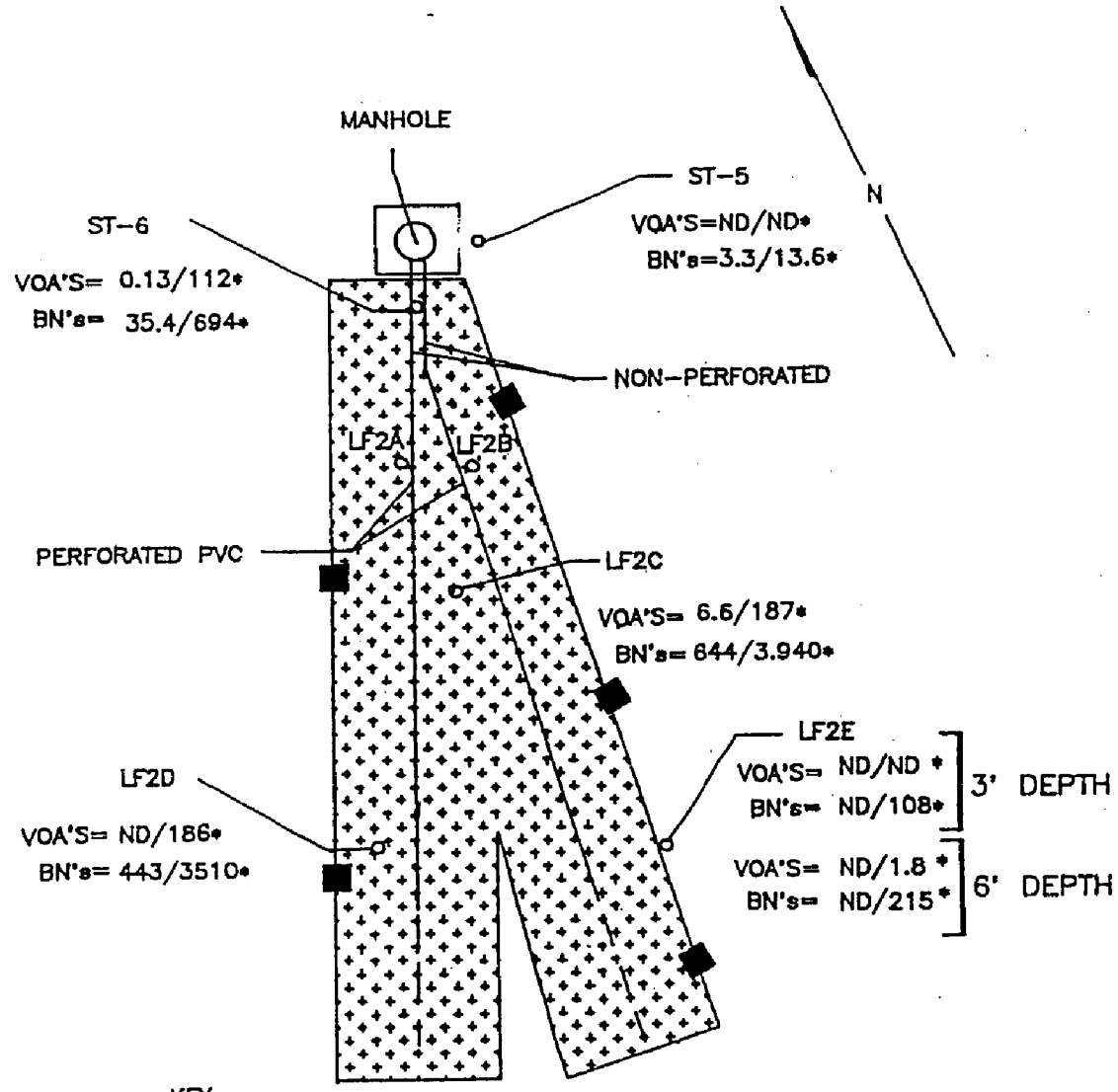
It is estimated that approximately 2,000 gallons of combined septic liquid and sludge must be disposed of from septic tanks 1-4A. Disposal will take place at E.I. Dupont's Deepwater Facility.

Pumping & Labor 2,000 gallons @ $10/gallon	$2,000
Transportation	$ 500
Disposal	$1,100
	$3,600
Cleanup Subcontractor's Insurance and Sales Tax	$ 432
Sampling and Analysis	$ 500
Subtotal	$4,532
Engineering 10%	$ 453
Contingency 10%	$ 453
Total	$5,438

F. Leachfield 2

i) Proposed Remediation

Contaminated soil surrounding leachfield laterals will be excavated to reduce VOCs and BNs to a level below 1 ppm and 10 ppm respectively. Excavation will proceed vertically from 3 feet to approximately 4.75 feet, the average depth to water in this area. Horizontally, soil will be excavated to 5 feet on either side of the leachfield laterals based upon the uncontaminated sample results obtained from Sample LF2E at this horizontal distance. For purposes of this estimate it is assumed that the length of the leachfield pipe is not greater than 50 feet. The proposed area of excavation is shown in Figure 22.



KEY

PARAMETERS=

TARGETED COMPOUNDS/PLUS FRACTION * (ppm)

■ PROPOSED POST-EXCAVATION SAMPLING POINT

⊡ PROPOSED AREA OF EXCAVATION

o SAMPLING POINTS

SCALE

0 10'

EFKA PLASTIC CORPORATION

PROPOSED AREA OF EXCAVATION
LEACHFIELD 2

Date. NOV 1989 | Figure 22

THE WHITMAN COMPANIES, INC

ii) Post-Excavation Sampling

Five (5) post-excavation samples are proposed along the length of the excavation. See Figure 22. These samples will be sidewall samples taken immediately above ground water and analyzed for VOCs and BNS.

iii) Cost Estimate and Magnitude of Cleanup

It is estimated that approximately 65 cubic yards (88 tons) will be removed from the areas shown on Figure 22. Disposal samples will be obtained in order to classify this soil as ID-27. If so classified, soil will be disposed of at the Hackensack Meadowlands Development Commission Landfill (HMDC). If soil does not meet criteria for ID-27 disposal the costs for Transportation and Disposal presented below will approximately double.

Excavation	88 tons @ $50/ton	$ 4,400
Backfill	88 tons @ $20/ton	$ 1,760
Loading	88 tons @ $10/ton	$ 880
Transportation	88 tons @ $40/ton	$ 3,520
Disposal	88 tons @ $40/ton	$ 3,520
Subtotal - Handling of Soil		$14,080
Cleanup Subcontractor's Insurance and Sales Tax		$ 1,690
Sampling and Analysis		$ 6,000
Subtotal		$21,770
Engineering 10%		$ 2,177
Contingency 10%		$ 2,177
Total		$26,124

G. Storm Sewers

It is estimated that a total of approximately 0.13 cubic yards (0.2 tons) of contaminated sediment will be removed from the three (3) catch basins existing on-site (Figure 1) and disposed of at the Hackensack Meadowlands Development Commission Landfill (HMDC) if classified as ID-27.

Manual Excavation & Loading	3 storm sewers @ $100/ storm sewer	$ 300
Transportation	0.2 tons @ $40/ton	$ 8
Disposal	0.2 tons @ $40/ton	$ 8
	Subtotal - Handling of Soil	$ 316
	Cleanup Subcontractor's Insurance and Sales Tax	$ 38
	Sampling and Analysis	$ 600
	Subtotal	$ 954
	Engineering 10%	$ 96
	Contingency 10%	$ 96
	Total	$1,146

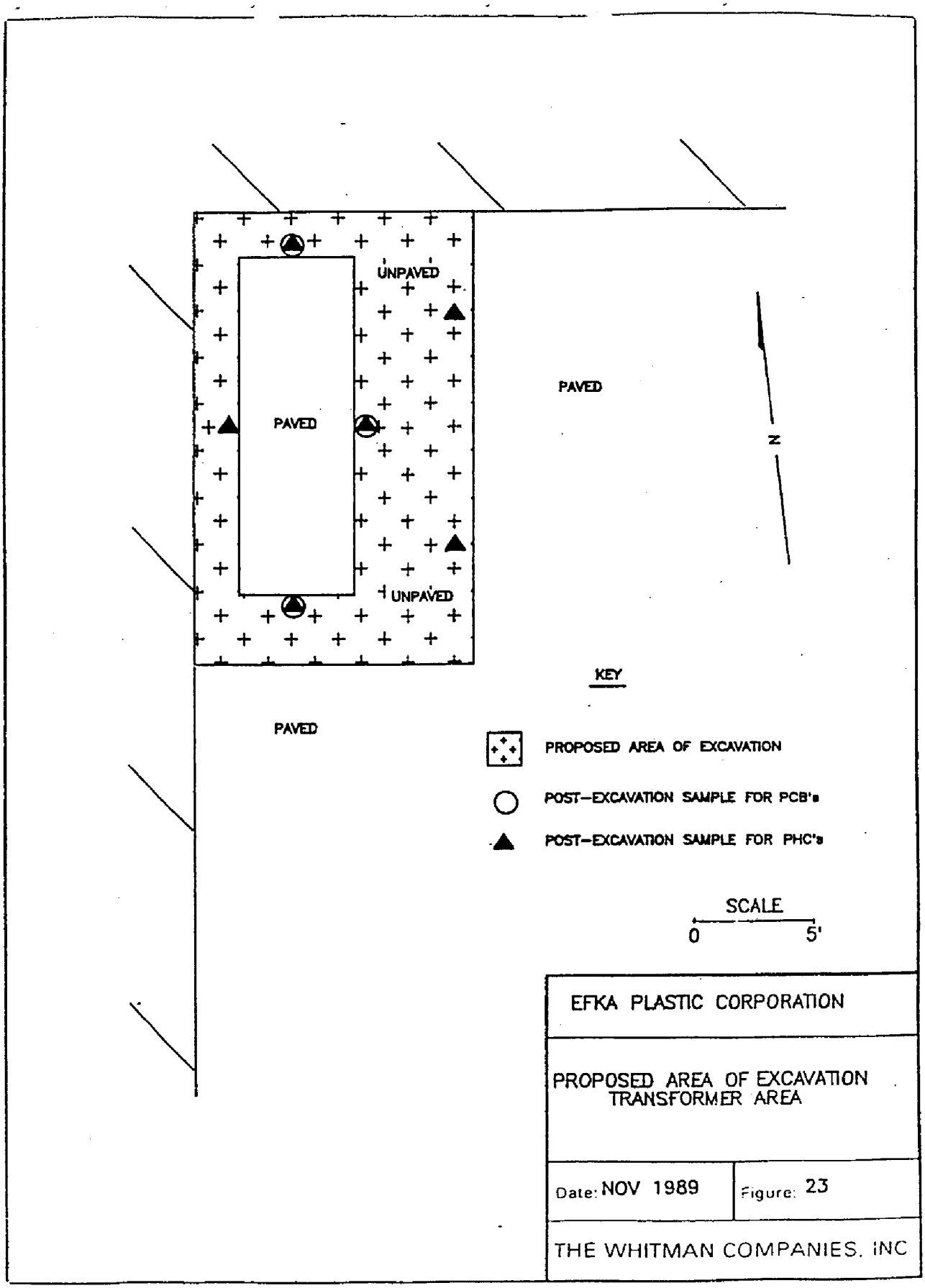
H. Transformer Area

i) Proposed Remediation

Contaminated soil surrounding the concrete transformer pad will be excavated to reduce PCBs and PHCs to a level below 5 ppm and 100 ppm respectively. The proposed area of excavation is shown in Figure 23. Soil in this area will be excavated down to 1.5 feet.

ii) Post-Excavation Sampling

Six (6) post-excavation sample locations are proposed in the Transformer Area. See Figure 23. These samples will be taken 0-6 inches below the surface of the excavation.


UNPAVED
PAVED
PAVED
UNPAVED
PAVED
N
KEY
PROPOSED AREA OF EXCAVATION
POST-EXCAVATION SAMPLE FOR PCB's
POST-EXCAVATION SAMPLE FOR PHC's
SCALE
0
5'
EFKA PLASTIC CORPORATION
PROPOSED AREA OF EXCAVATION
TRANSFORMER AREA
Date: NOV 1989
Figure: 23
THE WHITMAN COMPANIES, INC

iii) Cost Estimate and Magnitude of Cleanup

It is estimated that approximately 10 cubic yards (13.5 tons) will be removed from the area shown on Figure 23. The actual extent of excavation may vary dependent on visual observation and readings obtained from portable field instrumentation.

Disposal samples will be obtained in order to classify this soil as ID-27. If so classified, soil will be disposed of at the Hackensack Meadowlands Development Commission Landfill (HMDC). If soil does not meet criterion for ID-27 disposal the costs for Transportation and Disposal presented below will approximately double.

Excavation	13.5 tons @ $50/ton	$ 675
Backfill	13.5 tons @ $20/ton	$ 270
Loading	13.5 tons @ $10/ton	$ 135
Transportation	13.5 tons @ $40/ton	$ 540
Disposal	13.5 tons @ $40/ton	$ 540
Subtotal - Handling of Soil		$2,160
Cleanup Subcontractor's Insurance and Sales Tax		$ 259
Sampling and Analysis		$3,310
Subtotal		$5,549
Engineering 10%		$ 555
Contingency 10%		$ 555
Total		$6,659

I. Ground Water

As discussed in detail in Section 2 of this report it is proposed that no ground water remedial activity is warranted at EFKA Plastic Corporation. It is further recommended that the six (6) monitoring wells on-site be sealed in place by a certified well driller according to NJDEP specifications.

Drill Rig	16 hrs. @ $160/hr.	$2,560
Sealing Wells	120 ft @ $5/ft.	$ 600
Mobilization/Demobilization		$ 200
	Total	$3,360

4. CLEANUP SUMMARY SPECIFICATIONS

A. Cleanup Contractors

Cleanup at EFKA Plastic Corporation, located in Bayonne, New Jersey, will be performed by a qualified contractor under the supervision of The Whitman Companies, Inc. Laboratory analyses of additional samples collected will be completed by Envirotech Research, Edison, New Jersey (NJDEP Certified Lab 12543).

B. Waste Disposal

As documented in Section 3 of this report, it is proposed that contaminated soil collected from Tank Areas E and F, Leachfield 2, storm sewer basins, and the transformer area be disposed of at the Hackensack Meadowland Development Commission Landfill contingent upon classification as ID-27. Contaminated soil collected from Spill Areas A and B will be disposed at the GSX Landfill located in Pinewood, South Carolina.

C. Cost Estimate .

The estimated total cost to complete the proposed cleanup at the EFKA Plastic Corporation is:

Tank Area E	$ 10,054
Tank Area F	44,236
Spill Area A	35,869
Spill Area B	512
Septic Tanks 1-4A	5,438
Leachfield 2	26,124
Storm Sewers	1,146
Transformer Area	6,659
Well Sealing	3,360
TOTAL	$133,398

D. Health and Safety

The nature and extent of the contamination at EFKA Plastic Corporation is such that no specific personal protection equipment or health monitoring will be required. The areas excavated will be protected by fencing. Signs will be posted indicating the areas of excavation.

The following shall be available on the site.

1. First aid kit and manual
2. Fire extinguisher and fire blankets
3. Telephone

A list of the following telephone numbers shall be posted with directions to the hospital.

Police Department	(201) 858-6900
Fire Department	(201) 858-6005
Bayonne Hospital	(201) 858-5000
Poison Control Center	1-800-962-1253

Direction to Bayonne Hospital:

Make left onto Avenue A. Make right onto West 29th Street. Hospital is located at 29 East 29th Street.

In case of an emergency, a supervisor from The Whitman Companies, Inc. will be informed. The following chain-of-command should be followed.

1. Dr. Ira L. Whitman, P.E.
   President
   (201) 390-5858

2. Richard Britton
   Environmental Scientist
   (201) 390-5858

If the office is closed, calls are automatically transferred to Dr. Whitman at his home.

E. Proposed Schedule

Depending upon NJDEP approval, the following schedule is anticipated for completion of the proposed cleanup at EFKA Plastics Corporation.

Project Milestone	Elapsed Time In Weeks From Receipt of Cleanup Plan Approval
1. Schedule cleanup contractor, and provide him with cleanup specifications	1
2. Complete all remedial actions including excavation	5
3. Take post-excavation and waste classification samples	5
4. Receive results of waste classification samples; submit waste classification request to Bureau of Hazardous Waste Classification and Manifests	9
5. Receive results of post-excavation sampling. Schedule additional excavation if necessary	9
6. Backfill excavations	10
7. Receive waste classification from NJDEP for excavated soil	13
8. Sealing of six (6) Monitoring Wells	13
9. Remove soil from property; transport to landfill	16
10. Install Liner in Spill Area A	18
11. Submit Final Cleanup Report to NJDEP	20

F. ECRA Fees

ECRA fees for the cleanup are based upon the cost of the proposed cleanup. In the case of EFKA Plastic Corporation, applicable fees under the regulations are:

1. Cleanup Plan Review (based on cost of $133,398)	$ 5,000
2. Oversight of Cleanup Plan Implementation (based on cost)	$ 7,000
Total Fee	$12,000

DEP-0?? A
6/89

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPLEMENTAL CASE TRANSFER REPORT

Page 1 of ____

KNOWN OR POTENTIAL SOURCES OF RELEASE

LOCATION OF CONCERN AND MEDIA AFFECTED	POLLUTANTS: SAMPLING FINDINGS	POLLUTANTS: CONCENTRATION / ACTION LEVEL	ACTIONS TAKEN
~~GROUND WATER~~ Soil [illegible] spill [illegible]	BC BE4P	CONCENTRATION: BE4P >5100 ppm; ACTION LEVEL: 45 ppm residential, 175 ppm industrial	ACTIONS TAKEN: none; OUTCOME:; NEXT STEP:
~~SURFACE WATER~~ Soil / GW 2 USTs - gasoline [illegible] 10,000 gal [illegible] 8000 gal	PHC VO	CONCENTRATION: PHC - 20-1014 ppm, [illegible] 30.25 ppm; ACTION LEVEL: PHC = 100 ppm, VO 1 ppm	ACTIONS TAKEN: USTs removed [illegible] contaminated; OUTCOME: cleanup not implemented; NEXT STEP:
SOILS septic leachfield west side of building [illegible] w/2 lateral leachfields	VO BN	CONCENTRATION: BN = [illegible] 15 ppm, VO = 8.6-235 ppm; ACTION LEVEL: VO = 1 ppm, BN = 10 ppm	ACTIONS TAKEN: samples taken some BN contam attributed to fill. Was to be remediated under cleanup plan; OUTCOME: cleanup not implemented; NEXT STEP:
~~AIR~~ interior of building floor drains & square panel		CONCENTRATION:; ACTION LEVEL:	ACTIONS TAKEN: function & discharge point to be determined in cleanup; OUTCOME: cleanup not implemented; NEXT STEP:
~~OTHER~~ STORM SEWERS received photographic developer.	BN VO's	CONCENTRATION:; ACTION LEVEL: BN = 10, VO = 1	ACTIONS TAKEN: NONE; OUTCOME:; NEXT STEP:

TIERRA-B-015861

DEP-081 A
6/89

NEW . SEY DEPARTMENT OF ENVIRONMENTAL PF. ECTION CHS

SUPPLEMENTAL CASE TRANSFER REPORT

KNOWN OR POTENTIAL SOURCES OF RELEASE

LOCATION OF CONCERN AND MEDIA AFFECTED	POLLUTANTS		ACTIONS TAKEN
GROUND WATER Case was referred for failure to post financial assurance. NC response to notice of violation. Company claims they have no money. Case recently referred for failure to	SAMPLING FINDINGS	CONCENTRATION ACTION LEVEL	ACTIONS TAKEN: OUTCOME: NEXT STEP:
SURFACE WATER implement cleanup Plan Site needs remediation Cleanup plan approval and inspection report referred	SAMPLING FINDINGS	CONCENTRATION ACTION LEVEL	ACTIONS TAKEN: OUTCOME: NEXT STEP:
SOILS transformers oil staining	SAMPLING FINDINGS PHC PCB	CONCENTRATION PCB: 5 SC ACTION LEVEL PCB: 1-½ ppm	ACTIONS TAKEN: NONE OUTCOME: NEXT STEP:
AIR	SAMPLING FINDINGS	CONCENTRATION ACTION LEVEL	ACTIONS TAKEN: OUTCOME: NEXT STEP:
OTHER INTERIOR drums of hazardous substance	SAMPLING FINDINGS	CONCENTRATION ACTION LEVEL	ACTIONS TAKEN: NONE OUTCOME: NEXT STEP:

4. The building floors shall be addressed in the decommissioning plan.
5. All visually contaminated surface soils shall be excavated and post excavation sampling conducted as per the NJDEPE/ECRA Draft Sampling Plan Guide.
6. After the transformers, which are not in use, are properly decommissioned and removed from the site, all visually contaminated soils shall be excavated and post excavation sampling conducted.
7. A magnetometer survey shall be conducted to determine the existence of the questionable UGST's.

ACTIONS REQUIRED ON THE PART OF BISE

1. Review Sampling Plan.

Inspector/Case Manager Signature _____

Approved: _____ Supervisor
Bureau of Environmental Evaluation
and Cleanup Responsibility Assessment