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NYSDEC Spill
Investigation Report

136 2nd Avenue
Brooklyn, New York

NYSDEC Spill No. 92-14380
N&P Job No. 97081

April 23, 1997

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Investigation Report

136 2nd Avenue
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Spills Management Division
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Investigation Report

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Brooklyn, New York

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1.0 INTRODUCTION AND PURPOSE

Nelson, Pope & Voorhis, LLC (NPV) has been contracted to prepare an Investigation Report [IR] for the subject property in response with issues raised during a New York State Department of Environmental Conservation spill investigation. The information gathered during the investigation is intended to identify the areal extent, depth of contamination and degree of contamination in both soil and groundwater. The investigation generates information to support interim and comprehensive remediation decisions. The scope of the Investigation Plan [IP] complies with the scope of work requested in a NYSDEC response letter, dated June 20, 1994.

The subject site is located at 136 2nd Street. Brooklyn, New York. The site is occupied by a one story masory building. The building was identified as the Vehicle Maintenance Facility (VMF) which was formerly utilized by the United States Post Office. The VMF building formerly contained several underground storage tanks (USTs) which stored gasoline and oil for on-site utilization. One or more UST/s had actuated a petroleum release to the underlying soil and groundwater which was addressed by tank and soil removal activities reported as NYSDEC Spill No. 92-14380. The spill report and remediation resulted in the request for additional site work as documeted in the NYSDEC response letter noted above (**Appendix A**).

1.1 EXISTING CONDITIONS

A review of documents associated with New York State Department of Environmental Conservation (NYSDEC) spill number 92-14380 identified the removal of seven USTs (4-5000 gal. and 3-1000 gal.) from the subject property during the period of March 29, 1993 to April 13, 1993 by Unico Service Corp. Additionally, the review of the records showed a Subsurface Investigation performed by Unico Environmental, Inc., dated July 10, 1993, in response to NYSDEC spill number 92-14380. Said investigation included the installation of five monitoring wells (**Figure 1**)with split spoon samples acquired from each monitoring well location on the subject property. Data from the investigation identified elevated levels of volatile and semi-volatile organic compounds in monitoring wells MW-2, MW-4 and MW-5.

Accordingly, a response letter from the NYSDEC, dated June 20, 1994, requested further delineation of the extent of groundwater contamination. Said request entailed the installation of six (6) test borings/monitoring wells at locations provided on an accompanying map. The soil samples acquired from these locations were to be analyzed in the field for total hydrocarbons with the worst case sample analyzed utilizing EPA Method 8021 and 8270. Further, the groundwater samples taken from the soil/groundwater probes were requested to be analyzed utilizing EPA

Method 8021 and 8270. The data from this investigation, along with any previous data, is to serve as an Investigation Report [IR] for NYSDEC spill number 92-14380 and to provide a basis of information to aid in designing a Remediation Plan [RP].

The sampling program was designed and supervised by NP&V in collaboration with Impact Environmental Consulting, Inc. Laboratory analytical data was analyzed by ICM Laboratories, Inc. The protocol used to direct this investigation was based upon the New York State Department of Environmental Conservation (NYSDEC) Documents, Spill Operations Technology Series (SPOTS), Memo #14, Technical Administrative Guidance Manual (TAGM) # 4046 Determination of Soil Cleanup Objectives and Cleanup Levels, Spill Technology and Remediation Series (STARS), Division of Water Technical and Operation Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values, and Guidance for Petroleum Spill Stipulation Agreement. The following sections detail the site and area characteristics, sampling program, protocol and quality assurance, laboratory analysis and results.

2.0 SAMPLING AND ANALYSIS PROGRAM (SAP)

2.1 GEOPROBE SOIL PROBES

Six (6) probe nodes, identified as SP-1, SP-2, SP-3, SP-4, SP-5, and SP-6 were installed on the subject property (**Figure 2**). Probe nodes SP-1, SP-2, SP-3, and SP-4 were installed immediately adjacent to the side walls of the former UST tank pit (the tank pit housed seven USTs). SP-5 was installed approximately 150 feet southwest of the former location of the USTs. SP-6 was installed approximately 150 feet north northwest of the former location of the USTs.

Representative soil samples were secured from a sampling interval of 4-8 feet below existing grade from the probe node location for the purpose of soil screening and subsequent sample analysis. The sample interval was selected to identify the subsurface soil characteristics at the soil/groundwater interface.

2.2 SOIL PROBE INSTALLATION

The soil probes were installed using a Geoprobe hydraulically powered soil probing tool (**Figure 3**). Mechanized, vehicle mounted soil probe systems apply both static force and hydraulically powered percussion hammers for tool placement (static down forces up 3,000 pounds combined with percussion hammers of eight horsepower continuous output). Recovery of large sample volumes was facilitated with a probe-driven sampler. The probe-driven sampler depth in the soil profile to allow soil to enter as it was advanced. Discrete samples were secured at the desired depths and were contained within a non-reactive plastic sleeve which lines the hollow probe for subsequent inspection and analysis.

2.3 HEAD SPACE ANALYSIS AND PROCEDURE

Head space analysis was performed on each of the samples acquired from each probe node to provide precursory data regarding potential contamination. Results of the analysis were used to adjust the sampling and analysis program to yield the most accurate and representative results and also to direct the technical field crew in selection of samples for subsequent confirmation analytical analysis by the laboratory. The results of the head space analysis are presented in **Table 1**.

TABLE 1

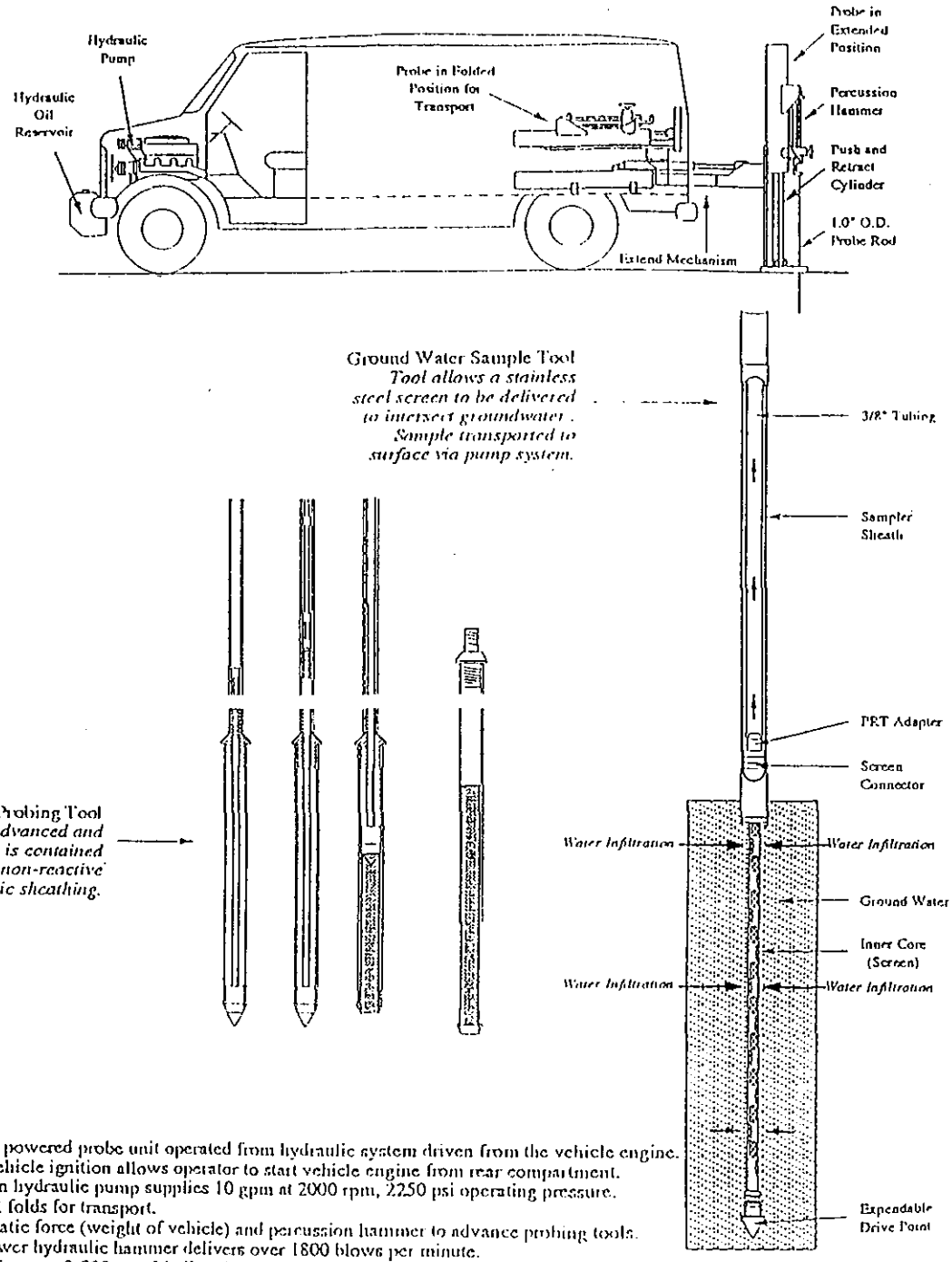
HEAD SPACE RESULTS

Probe Node	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6
Headspace (ppm)	46	125	74	136	64	49

Notes: All results are in parts per million (ppm)
Shaded cells indicates analytical data available for sample.

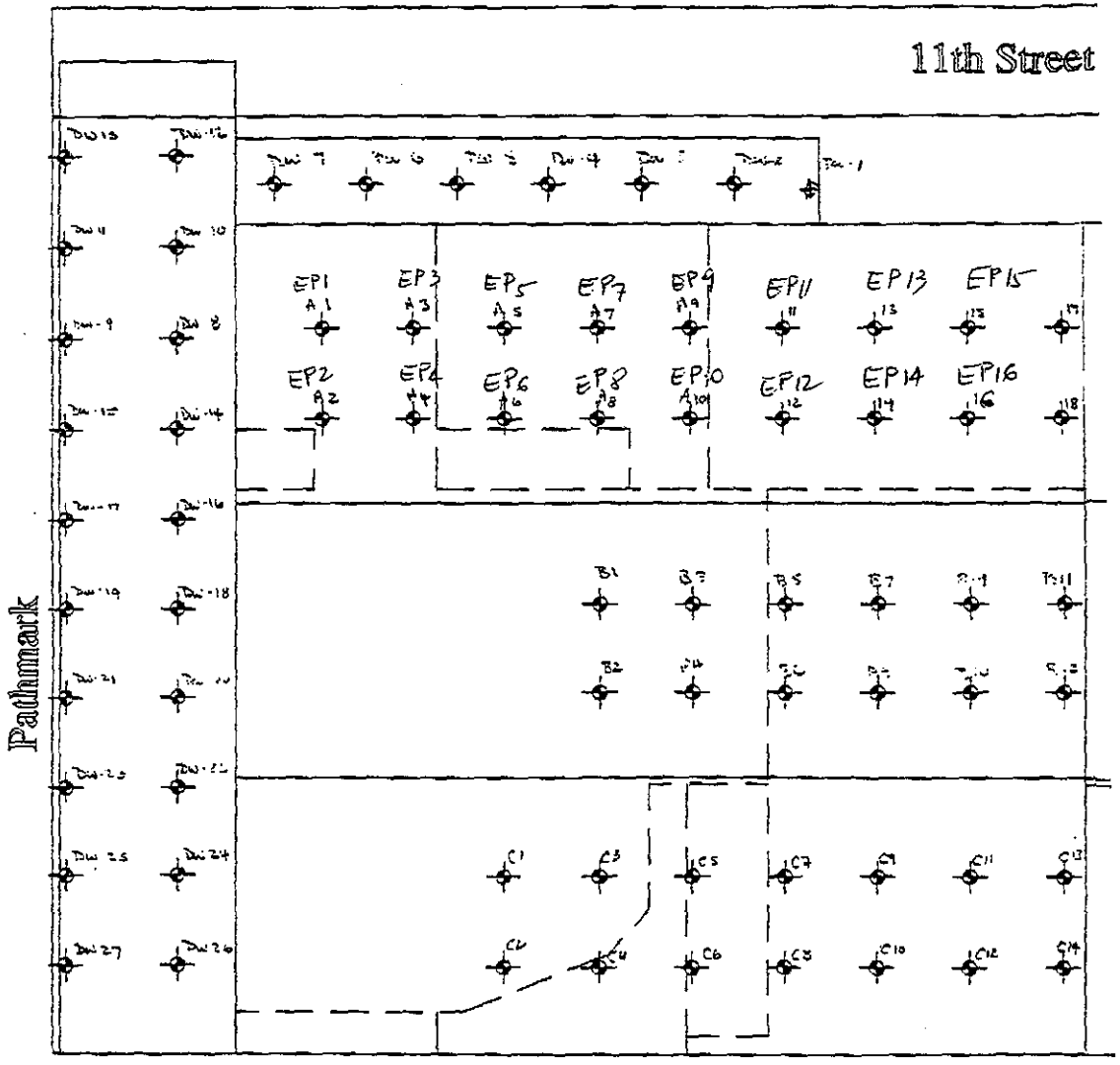
FIGURE 2

GEOPROBE SAMPLING APPARATUS



Basics

- Hydraulic powered probe unit operated from hydraulic system driven from the vehicle engine.
- Remote vehicle ignition allows operator to start vehicle engine from rear compartment.
- Belt driven hydraulic pump supplies 10 gpm at 2000 rpm, 2250 psi operating pressure.
- Probe unit folds for transport.
- Utilizes static force (weight of vehicle) and percussion hammer to advance probing tools.
- 8 horsepower hydraulic hammer delivers over 1800 blows per minute.
- Hammer features 0-300 rpm LH directional rotary function for drilling surface pavements.
- Probes have greater than 12,000 pounds of pulling capacity.
- Drives small diameter (1.0" O.D.) probing tools to depths of over 30'.


11th Street
Pathmark
EP1
EP3
EP5
EP7
EP9
EP11
EP13
EP15
EP2
EP4
EP6
EP8
EP10
EP12
EP14
EP16

Head space analysis was performed on each of the acquired unsaturated soil samples utilizing a portable photo ionization detection (PID) meter to measure what, if any, hydrocarbon concentrations were present in isolated portions of the secured samples. Head space analysis was conducted by partially filling a non reactive plastic bag with sample aliquot and sealing the top the zip lock seal, thereby creating a void. This void is referred to as the sample head space.

To facilitate the detection of any hydrocarbons contained within the head space, the container was agitated for a period of thirty (30) seconds. The probe of the vapor analyzer was then injected through the seal into the head space to measure the hydrocarbon concentrations present. A Photovac Micro-Tip, PID was the organic vapor analyzer selected for the head space analysis. A PID utilizes the principle of hydrogen flame ionization for detection and measurement of hydrocarbon compounds. A PID does not respond to all compounds similarly; rather, each compound has its own response factor relative to its calibration. For this investigation, the PID was calibrated to benzene. Hydrocarbon relative response factors for a PID calibrated to Isobutylene are published by the manufacturer. Head space analysis was performed by a qualified and trained field technician of Impact Environmental Consulting, Inc. under supervision of NP&V.

2.4 Laboratory Sample Location and Frequency

Head space samples indicated the potential for hydrocarbon contamination. Hydrocarbon concentrations were detected in the headspace of the samples acquired from probe node SP-1 through SP-6. The samples from SP-1 through SP-6 were labeled for identification purposes as 97-070-SP-1, 97-070-SP-2, 97-070-SP-3, 97-070-SP-4, 97-070-SP-5, and 97-070-SP-6, respectively.

Sample identification was consistent with the probe node locations identified in **Figure 2**.

2.5 Soil Characterization

A visual inspection of all soil samples recovered during the installation of each of the probes was conducted to identify any gross signs of chemical contamination and to classify the soils. Soil gradation classifications were made in accordance with the Unified Soil Classification System. Soil color classifications were made in accordance with the Munsell Classification System. In general, the natural soils of the subject property were found to consist of a black poorly sorted fine silty sand. Gross indications of petroleum contamination were noted in the samples secured from soil probe nodes SP-1 through SP-6.

2.6 Geoprobe Groundwater Probes

Six (6) probe nodes, identified as GWP-1, GWP-2, GWP-3, GWP-4, GWP-5, and GWP-6, were installed on the subject property (**Figure 2**).

Probe nodes GWP-1, GWP-2, GWP-3, and GWP-4 were installed immediately adjacent to the former location of the USTs. GWP-5 was installed approximately 150 feet southwest of the former location of the USTs. GWP-6 was installed approximately 150 feet north northwest of the former location of the USTs.

Groundwater samples were secured from each probe node (except GWP-5) location for the purpose of subsequent sample analysis. A groundwater sample was unable to be secured from GWP-5 due to poor groundwater infiltration.

2.7 GROUNDWATER PROBE INSTALLATION

The groundwater sampling system used was the Geoprobe Screen Point 15, which is designed to accurately collect grab samples of groundwater. The Screen Point 15 uses a screen with a standard slot size of 0.004 inches that is sealed inside a 1.5-inch ID alloy steel sheath as it is driven to depth. The screen is sealed inside the sheath with Neoprene O-rings which prevent infiltration of formation fluids until the desired depth is attained. When the screen has been driven to the depth of interest in the formation, extension rods are used to hold the screen in position as the driving rods are retracted approximately 4 feet. The 4-foot long sampler sheath forms a seal above the screen as it is retracted. A total of 41.5 inches of slotted screen is placed into contact with the formation. The Screen Point 15 groundwater sampler has a total boring diameter of 1.5 inches, the outside diameter of the screen is 1.0 inch. This provides for a maximum of 0.25 inches between the screen and the natural formation as the sampler sheath is retracted. These conditions approach the ideal for natural formation development which can be conducted when lower turbidity samples are required.

Each groundwater sample was collected from the sampler utilizing 3/8 inch in diameter disposable tube equipped with a bottom check valve. The tubing extended from the surface down to the sampler. The tubing was oscillated up and down continuously until the check valve had trapped an adequate volume of a groundwater sample. The tubing was then removed and the water was poured into appropriate sample vessels for subsequent laboratory analysis.

2.8 MONITORING WELL SAMPLING

Groundwater monitoring well MW-1 was developed and sampled in accordance with U.S. EPA protocol by a certified technician as an upgradient well point to the UST tank pit. Approximately three well volumes of water were bailed from the wells for development. Sampling was immediately performed utilizing a clean Voss disposable bailer for each well to prevent cross-contamination. Samples were preserved in a 40-ml glass vial . Samples were preserved at 4°C in a cooler and transported under proper chain-of-custody procedures to a NYS-DOH certified commercial laboratory for analysis.

3.0 LABORATORY ANALYSIS

3.1 ANALYTICAL TEST METHODS

The soil and groundwater samples were transported to a New York State Certified Commercial Laboratory for analysis. Selection of the analytical test methods for the soil and groundwater samples were based on the New York State Department of Environmental Conservation (NYSDEC) Petroleum Contaminated Soil Guidance Policy (STARS), Section V, Laboratory Methods.

The analysis performed on the soil samples secured from probe nodes SP-1 through SP-6 consisted of USEPA Test Methods 8021 and 8270 for total volatile and semivolatile organic compounds.

The analysis performed on the groundwater samples secured from probe nodes GWP-1, GWP-2, GWP-3, GWP-4, GW-6, and MW-1 consisted of USEPA Test Methods 8021 and 8270 for total volatile and semivolatile organic compounds.

3.2 ANALYTICAL RESULTS

Laboratory analysis performed on the soil and groundwater samples 97-070-SP-1, 97-070-SP-2, 97-070-SP-3, 97-070-SP-4, 97-070-SP-5, and 97-070-SP-6 (and corresponding GWP numbers) detected several target analytes. The laboratory analysis sheets as prepared by ICM Laboratories are presented in **Appendix B** of this document. The detected analytes are presented in **Table 2**, Detected Organic Compounds, **Table 3**, Detected Organic Compounds in Groundwater.

TABLE 2

DETECTED ORGANIC COMPOUNDS IN SUBSURFACE SOILS

Sample ID	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6	STARS Regulatory Level
Unit	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatiles:							
Benzene	ND	68	25	140	ND	ND	14
Ethylbenzene	7.9	**320**	**100**	**390**	ND	19	100
Toluene	52	**500**	77	**320**	ND	20	100
o-Xylene	63	**2,300**	**230**	**1,500**	**330**	12	100
m+p-Xylene	55	**2,200**	**330**	**1,700**	ND	ND	100
n-Propylbenzene	6.7	**380**	31	**210**	ND	ND	100
p-Isopropyltoluene	ND	**270**	14	ND	ND	6.6	100
1.2.4-Trimethylbenzene	**140**	**5,200**	**440**	**5,200**	**3,700**	12	100
1.3.5-Trimethylbenzene	25	**2,400**	**190**	**1,500**	**540**	48	100
n-Butylbenzene	17	**3,000**	**140**	**2,600**	**1,600**	ND	100
Napthalene	**39,000**	**470,000**	**200,000**	**230,000**	**160,000**	**2,800**	200
t-Butyl-benzene	39	**3,400**	**210**	**2,600**	**860**	ND	100
Semi-Volatiles:							
Acenaphthylene	22,000	**61,000**	24,000	**69,000**	3,300	2,200	41,000*
Acenaphthene	**11,000**	**55,000**	**21,000**	**59,000**	**10,000**	**2,400**	400
Fluorene	**41,000**	**170,000**	**68,000**	**190,000**	**7,300**	**5,500**	1,000
Phenanthrene	**160,000**	**770,000**	**320,000**	**640,000**	**18,000**	**14,000**	1,000
Anthracene	**20,000**	**72,000**	**36,000**	**93,000**	**5,900**	**3,400**	1,000
Fluoranthene	**60,000**	**200,000**	**61,000**	**170,000**	**9,400**	**9,500**	1,000
Pyrene	**140,000**	**440,000**	**200,000**	**410,000**	**18,000**	**16,000**	1,000
Benzo(a)anthracene	**56,000**	**160,000**	**67,000**	**140,000**	**6,700**	**4,900**	220
Chrysene	**68,000**	**200,000**	**88,000**	**180,000**	**6,800**	**5,600**	0.04
Benzo(b)fluoranthene	**61,000**	**170,000**	**74,000**	**140,000**	**4,700**	**3,100**	220
Benzo(a)pyrene	**42,000**	**110,000**	**50,000**	**110,000**	**7,300**	**4,000**	61
Indeno(1.2.3-cd)pyrene	**12,000**	**33,000**	**17,000**	**32,000**	**2,000**	ND	0.04
Dibenz(a.h)anthracene	**6,200**	**17,000**	**8,900**	**15,000**	ND	ND	1,000
Benzo(g.h.I)perylene	**16,000**	**39,000**	**19,000**	**34,000**	**2,100**	ND	0.04

*-Derived from TAGM 4046

Bold values represent concentrations above guidance values.

ND = Not present above laboratory detection limits.

TABLE 3

DETECTED ORGANIC COMPOUNDS IN GROUNDWATER

Sample ID	GWP-1	GWP-2	GWP-3	GWP-4	GWP-6	MW-1	NYSDEC Ambient Groundwater quality standards and limitations
Unit	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Volatiles:							
Benzene	**8.7**	**150**	**300**	**300**	ND	ND	0.7
Toluene	**6.3**	ND	ND	ND	ND	ND	5
o-Xylene	**7.1**	**68**	ND	ND	ND	ND	5
m+p-Xylene	**6.6**	**76**	**120**	**110**	ND	ND	5
1,2,4-Trimethylbenzene	**8.7**	**80**	**170**	**170**	ND	ND	5
Napthalene	**270**	**1200**	**2000**	**2600**	**120**	ND	10
Semi-Volatiles:							
Acenaphthylene	78	390	160	420	4	ND	NA
Acenaphthene	**24**	**360**	**140**	**310**	9.7	ND	20
Fluorene	**90**	**980**	**470**	**1,100**	10	ND	50
Phenanthrene	**290**	ND	**920**	**2100**	17	ND	50
Anthracene	43	**430**	**220**	**550**	3.7	ND	50
Fluoranthene	**140**	**1,100**	**280**	**620**	10	ND	50
Pyrene	**300**	ND	**560**	**1,500**	12	ND	50
Benzo(a)anthracene	**110**	**640**	**210**	**660**	**4**	ND	0.002
Chrysene	**150**	**760**	**250**	**640**	**4.5**	ND	0.002
Benzo(b)fluoranthene	**120**	**560**	**170**	**510**	**4.8**	ND	0.002
Benzo(a)pyrene	**93**	**410**	**160**	**460**	**3.5**	ND	ND
Indeno(1,2,3-cd)pyrene	**31**	**85**	**29**	**77**	**1.6**	ND	0.002
Dibenz(a,h)anthracene	ND	44	17	43	ND	ND	NA
Benzo(g,h,i)perylene	36	98	40	86	18	ND	NA

Bold values represent concentrations above guidance value.
ND = Not present above laboratory detection limits.

4.0 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES (QA/QC)

Sampling protocol was conducted in accord with USEPA accepted sampling procedures for hazardous waste streams (Municipal Research Laboratory, 1980, Sampling and Sampling Procedures for Hazardous Material Waste Streams, USEPA, Cincinnati, Ohio EPA- 600\280-018) and ASTM Material Sampling Procedures. All samples were collected by or under the auspices of USEPA trained personnel having completed the course Sampling of Hazardous Materials, offered by the Office of Emergency and Remedial Response. Separate QA/QC measures were implemented for each of the instruments used in soil-gas and soil sampling.

Separate QA/QC measures were implemented for each of the instruments used in the Sampling and Analysis Program. Sampling instruments included a stainless steel Geoprobe with probe sections, ponar grab, organic vapor analyzer and sample vessels.

Prior to arrival on the subject property and between sample locations, the probes sections and ponar grab were decontaminated by washing with a detergent (alconox/liquinox) and potable water solution with distilled water rinse. The organic vapor analyzer was calibrated prior to sampling using a span gas of known concentration. All sample vessels were "level A" certified decontaminated containers. Samples were placed into vessels consistent with the analytical parameters. After acquisition, samples were preserved in the field. All containerized samples were refrigerated to 4^{o} C during transport.

A sample represents physical evidence, therefore, an essential part of liability reduction is the proper control of gathered evidence. To establish proper control, the following sample identification and chain-of-custody procedures were followed.

Sample Identification

Sample identification was executed by use of a sample tag, log book and manifest. Documentation provides the following:

1. Project Code
2. Sample Laboratory Number
3. Sample Preservation
4. Instrument Used for Source Soil Grabs
5. Composite Medium Used for Source Soil Grabs
6. Date Sample was Secured from Source Soil
7. Time Sample was Secured from Source Soil
8. Person Who Secured Sample from Source Soil

Chain-of-Custody Procedures

Due to the evidential nature of samples, possession was traceable from the time the samples were collected until they were received by the testing laboratory. A sample was considered under custody if:

It was in a person's possession, or
It was in a person's view, after being in possession, or
It was in a person's possession and they were to lock it up, or
It is in a designated secure area.

When transferring custody, the individuals relinquishing and receiving signed, dated and noted the time of the Chain-of- Custody Form.

Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the information on the sample tags matched that on the Chain-of-Custody records. Pertinent information as to shipment, pick-up, courier, etc. was entered in the "remarks" section. The custodian then entered the sample tag data into a bound logbook which was arranged by project code and station number.

The laboratory custodian used the sample tag number or assigned an unique laboratory number to each sample tag and assured that all samples were transferred to the proper analyst or stored in the appropriate source area.

The custodian distributed samples to the appropriate analysts. Laboratory personnel were responsible for the care and custody of samples from the time they were received until the sample was exhausted or returned to the custodian.

All identifying data sheets and laboratory records were retained as part of the permanent site record. Samples received by the laboratory were retained until after analysis and quality assurance checks were completed.

5.0 SUMMARY AND CONCLUSION

This investigation was completed to comply with the requests of the New York State Department of Environmental Conservation. A sampling and analysis program was designed to determine the impact the underground gasoline storage tanks have had on the quality of subsoil and groundwater. The SAP consisted of soil screening using probes and head space analysis of discreet soil samples, temporary groundwater well installation, groundwater sampling and laboratory confirmation of subsoil and groundwater quality using analytical test methods consistent with expected parameters and agency soil cleanup objectives. The following presents an evaluation of the results of this investigation.

1. Head space analysis performed on the samples secured from probe nodes SP-1, SP-2, SP-3, SP-4, SP-5 and SP-6 detected significant of hydrocarbon contamination. These results suggest that the operation of the USTs has caused the release of gasoline to the subsurface soil. This supposition is supported by the results of the analysis performed on samples 97-070-SP-1, 97-070-SP-2, 97-070-SP-3, 97-070-SP-4, 97-070-SP-5 and 97-070-SP-6 which detected several gasoline related contaminants above the laboratory detection limits.

2. Laboratory analysis performed on the soil samples secured from probe nodes SP-1, SP-2, SP-3, SP-4, SP-5 and SP-6 displayed concentrations of organic contaminants exceeding the NYSDEC STARS regulatory level. Further, the detected volatile organic compounds are characteristic of components of gasoline. The detected semi-volatile organic compounds are characteristic of components of diesel fuel.

3. Laboratory analysis performed on the groundwater samples secured from GWP-1, GWP-2, GWP-3, GWP-4, and GWP-6 displayed several gasoline related organic contaminants above the applicable NYSDEC Ambient Groundwater Quality Standards and Limits. Additionally, the detected semi-volatile organic compounds are characteristic of components of diesel fuel.

4. Laboratory analysis performed on the groundwater sample secured from MW-1 failed to detect any gasoline related organic compounds. Further, the laboratory analysis did not detect any semi-volatile organic compounds. These results suggest the contaminants detected from GWP-1, GWP-2, GWP-3, GWP-4, and GWP-6 are a result of an on-site source.

The subject site has been evaluated consistent with the NYSDEC's request for additional work to further identify the extent of contamination resulting from the spill occurance on the subject property, and in accordance with standard practice for the industry. This investigation report addresses only the specific areas of the site warranting further analysis as documented in the NYSDEC June 20, 1994 correspondance, and can only provide conclusions regarding the subsoil quality in those specific areas tested. The report is limited to the evaluation of site conditions at the time of completion of the field sampling program.

Date of Completion
NELSON, POPE & VOORHIS, LLC

Charles J. Voorhis, CEP, AICP
Project Manager

6.0 REFERENCES

New York State Department of Environmental Conservation (NYSDEC), 1992, Sampling Guidelines and Protocols, Technology Background and Quality Control/Quality Assurance for NYSDEC Spill Response Program, NYSDEC, Albany, New York.

NYSDEC, 1993, Spill Technology and Remediation Series (STARS), Memo 1, Guidance Document for Petroleum Contaminated Soils, NYSDEC, Albany, New York.

NYSDEC, 1994, Technical Administrative Guidance Memorandum, HWR-94-4046, Determination of soil cleanup objectives and cleanup levels, Division of Hazardous Waste Remediation, Albany, New York.

ATTACHMENTS

ATTACHMENT A

NYSDEC SPILL RESPONSE LETTER

New York State Department of Environmental Conservation
47-40 21st Street, Long Island City, New York 11101

Thomas C. Jorling
Commissioner

June 20, 1994

Mario J. Spina Jr.
Facilities Specialist
Administrative Support
UNITED STATES POSTAL SERVICE
TRIBORO DISTRICT
142-02 20th Avenue
Flushing, New York 11351-9991

Re: U.S. Post Office
11th St. & 2nd Ave.
Brooklyn
Spill #: 9214380
PBS #: 2-452440

Dear Mr. Spina,

New York State Department of Environmental Conservation has reviewed the submitted Tank-Field Excavation Assessment and the Subsurface Investigation Report for the above mentioned facility.

After review of these documents, it was shown that a contravention of groundwater quality standards exists. Therefore, a delineation of the extent of groundwater contamination is required.

NYSDEC wants the installation of six (6) test borings/monitoring wells as shown on the attached map, as access permits. Split spoon sampling with PID screening. If the PID does not indicate that any of the samples are contaminated, then the final sample from the soil/water interface should be analyzed for EPA Method 8021 & 8270. Following well development and well survey, the water samples should be analyzed for EPA Method 8021 & 8270. Upon completion of this work, NYSDEC is expecting the investigation report to include a proposal for remediation of the contamination.

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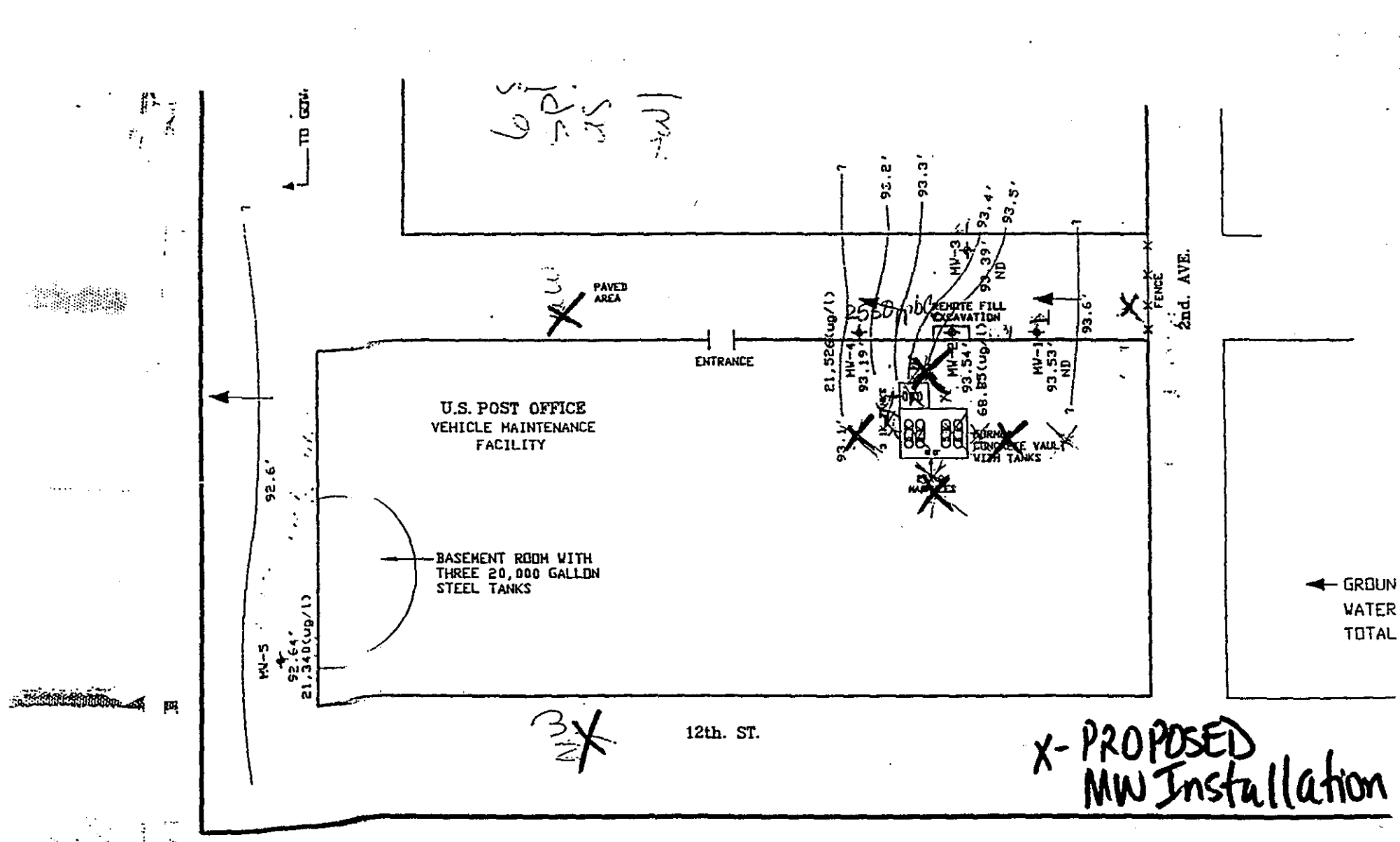
If you have any questions concerning this matter, please call my office at (718) 482-4933 Ext. 7130.

Sincerely,

Kerri-Ann A. Dowd
Environmental Engineer I
Spills Management Division
Region 2

cc: Austin, NYSDEC
Applebaum, Unico


TO GRN.
PAVED AREA
ENTRANCE
FENCE
2nd. AVE.
REMOTE FILL EXCAVATION
U.S. POST OFFICE
VEHICLE MAINTENANCE
FACILITY
BASEMENT ROOM WITH
THREE 20,000 GALLON
STEEL TANKS
MW-1
93.53'
ND
MW-2
93.54'
68.85(ug/l)
MW-3
93.39'
ND
MW-4
93.19'
21,526(ug/l)
MW-5
92.64'
21,340(ug/l)
92.6'
93.2'
93.3'
93.4'
93.5'
93.6'
12th. ST.
GROUN
WATER
TOTAL
X- PROPOSED
MW Installation

ATTACHMENT B

LABORATORY DATA SHEETS

ANALYTICAL RESULTS
Volatile Organics

NEI/GTEL Client ID: QOT01QOT01
Login Number: M7040066
Project ID (number): 97-070
Project ID (name): Impact Environmental 97-070 Kings Park, NY

Method: EPA 624
Matrix: Aqueous

NEI/GTEL Sample Number	M7040066-01
Client ID	97-070-MW-1
Date Sampled	04/02/97
Date Analyzed	04/12/97
Dilution Factor	1.00

Analyte	Reporting Limit	Units	Concentration:
Chloromethane	10.	ug/L	< 10.
Bromomethane	10.	ug/L	< 10.
Vinyl chloride	10.	ug/L	< 10.
Chloroethane	10.	ug/L	< 10.
Methylene chloride	5.0	ug/L	< 5.0
Trichlorofluoromethane	5.0	ug/L	< 5.0
Acrolein	20.	ug/L	< 20.
Acrylonitrile	20.	ug/L	< 20.
1,1-Dichloroethene	5.0	ug/L	< 5.0
1,1-Dichloroethane	5.0	ug/L	< 5.0
1,2-Dichloroethene (total)	5.0	ug/L	< 5.0
Chloroform	5.0	ug/L	< 5.0
1,2-Dichloroethane	5.0	ug/L	< 5.0
1,1,1-Trichloroethane	5.0	ug/L	< 5.0
Carbon tetrachloride	5.0	ug/L	< 5.0
Bromodichloromethane	5.0	ug/L	< 5.0
1,2-Dichloropropane	5.0	ug/L	< 5.0
cis-1,3-Dichloropropene	5.0	ug/L	< 5.0
Trichloroethene	5.0	ug/L	< 5.0
Dibromochloromethane	5.0	ug/L	< 5.0
1,1,2-Trichloroethane	5.0	ug/L	< 5.0
Benzene	5.0	ug/L	< 5.0
2-Chloroethyl vinyl ether	10.	ug/L	< 10.
trans-1,3-Dichloropropene	5.0	ug/L	< 5.0
Bromoform	5.0	ug/L	< 5.0
Tetrachloroethene	5.0	ug/L	< 5.0
1,1,2,2-Tetrachloroethane	5.0	ug/L	< 5.0
Toluene	5.0	ug/L	< 5.0
Chlorobenzene	5.0	ug/L	< 5.0
Ethylbenzene	5.0	ug/L	< 5.0
Xylenes (total)	5.0	ug/L	< 5.0
1,3-Dichlorobenzene	10.	ug/L	< 10.
1,4-Dichlorobenzene	10.	ug/L	< 10.
1,2-Dichlorobenzene	10.	ug/L	< 10.

Notes:

Dilution Factor:
Dilution factor indicates the adjustments made for sample dilution.

EPA 624:
GTEL Milford, NH
M7040066

GTEL Client ID: QOT01QOT01 ANALYTICAL RESULTS
Login Number: H7040066
Project ID (Number): 97-070
Project ID (Name): Impact Environmental 97-070 Kings Park, NY Date of Report: Apr 16, 1997

EPA 625	GTEL Sample Number	H7040066-01
Semivolatile Organics	Client ID	97-070-MW-1
Matrix: Aqueous	Date Sampled	04/02/97
	Date Prepared	04/08/97
	Date Analyzed	04/09/97
	Adjustment Multiplier	1.00

Analyte	Reporting Limit	Units	
N-Nitrosodimethylamine	10	ug/L	< 10
Phenol	10	ug/L	< 10
bis(2-Chloroethyl) ether	10	ug/L	< 10
2-Chlorophenol	10	ug/L	< 10
1,3-Dichlorobenzene	10	ug/L	< 10
1,4-Dichlorobenzene	10	ug/L	< 10
1,2-Dichlorobenzene	10	ug/L	< 10
bis(2-Chloroisopropyl) ether	10	ug/L	< 10
N-Nitrosodi-n-propylamine	10	ug/L	< 10
Hexachloroethane	10	ug/L	< 10
Nitrobenzene	10	ug/L	< 10
Isophorone	10	ug/L	< 10
2-Nitrophenol	10	ug/L	< 10
2,4-Dimethylphenol	10	ug/L	< 10
bis(2-Chloroethoxy)methane	10	ug/L	< 10
2,4-Dichlorophenol	10	ug/L	< 10
1,2,4-Trichlorobenzene	10	ug/L	< 10
Naphthalene	10	ug/L	< 10
Hexachlorobutadiene	10	ug/L	< 10
4-Chloro-3-methylphenol	20	ug/L	< 20
Hexachlorocyclopentadiene	10	ug/L	< 10
2,4,6-Trichlorophenol	10	ug/L	< 10
2-Chloronaphthalene	10	ug/L	< 10
Dimethyl phthalate	10	ug/L	< 10
Acenaphthylene	10	ug/L	< 10
2,6-Dinitrotoluene	10	ug/L	< 10
Acenaphthene	10	ug/L	< 10
2,4-Dinitrophenol	50	ug/L	< 50
4-Nitrophenol	50	ug/L	< 50
2,4-Dinitrotoluene	10	ug/L	< 10
Diethyl phthalate	10	ug/L	< 10
4-Chlorophenyl phenyl ether	10	ug/L	< 10
Fluorene	10	ug/L	< 10
4,6-Dinitro-2-methylphenol	50	ug/l	< 50
N-Nitrosodiphenylamine	10	ug/L	< 10
1,2-Diphenylhydrazine	50	ug/L	< 50
4-Bromophenyl phenyl ether	10	ug/L	< 10
Hexachlorobenzene	10	ug/L	< 10
Pentachlorophenol	50	ug/L	< 50
Phenanthrene	10	ug/L	< 10
Anthracene	10	ug/L	< 10
Di-n-butyl phthalate	10	ug/L	< 10
Fluoranthene	10	ug/L	< 10
Benzidine	50	ug/L	< 50
Pyrene	10	ug/L	< 10
Butylbenzyl phthalate	10	ug/L	< 10
3,3'-Dichlorobenzidine	20	ug/L	< 20

GTEL Client ID: QOT01QOT01 ANALYTICAL RESULTS
Login Number: M7040066
Project ID (Number): 97-070
Project ID (Name): Impact Environmental 97-070 Kings Park, NY Date of Report: Apr 16, 1997

EPA 625	GTEL Sample Number	M7040066-01
Semivolatile Organics	Client ID	97-070-MW-1
Matrix: Aqueous	Date Sampled	04/02/97
	Date Prepared	04/08/97
	Date Analyzed	04/09/97
	Adjustment Multiplier	1.00

Analyte	Reporting Limit	Units	
Benzo[a]anthracene	10	ug/L	< 10
Chrysene	10	ug/L	< 10
bis(2-Ethylhexyl) phthalate	10	ug/L	< 10
Di-n-octyl phthalate	10	ug/L	< 10
Benzo[b]fluoranthene	10	ug/L	< 10
Benzo[k]fluoranthene	10	ug/L	< 10
Benzo[a]pyrene	10	ug/L	< 10
Indeno[1,2,3-cd]pyrene	10	ug/L	< 10
Dibenzo[a,h]anthracene	10	ug/L	< 10
Benzo[g,h,i]perylene	10	ug/L	< 10

:M Laboratories
Industrial Corrosion Management, Inc.
152 Route 10
andolph, NJ 07869
none: 201-584-0330 FAX: 201-584-0515

APRIL 16, 1997
16:13:18

lient:
IMPACT ENVIRONMENTAL
ource:
97-070

ANALYTICAL DATA SUMMARY REPORT FOOTNOTE PAGE

U = Indicates a compound was analyzed for but not detected.
For results marked U, the numerical value is the compound MDL.

J = Indicates an estimated value. It is utilized when a reported value meets the identification.
criteria but the result is less than the specified detection limit and greater than zero.

B = Indicates that the analyte was found in the blank as well as the sample. It indicates possible/probable blank contamination.

W = Analytical Spike recovery for furnace AA analysis was not within control limits but was greater than or equal to 40%.

NA = Not Applicable.

Trip Blank pH is measured in laboratory.

IND = Indeterminable - compound decomposes in water.

\+ = Indicates that an MDL was not available for this compound. PQL was reported.

++ = Sample boiled at 100 degree C with no flash

P = Positive

N = Negative

ATT

CM Laboratories
Industrial Corrosion Management, Inc.
152 Route 10
andolph, NJ 07869
hone: 201-584-0330 FAX: 201-584-0515

APRIL 16, 1997
16:12:56

Client:
IMPACT ENVIRONMENTAL
Source:
97-070

ANALYTICAL DATA SUMMARY REPORT

Client Sample Number	SP-1		SP-2		SP-3		SP-4		SP-5		SP-6	
ICM Sample Number	260189		260190		260191		260192		260193		260194	
Sampling Date	04/05/97		04/05/97		04/05/97		04/05/97		04/05/97		04/02/97	
Units	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
GC Method 8021 Parameters												
Benzene	2.5	U	68		25		140		130	U	2.6	U
Ethylbenzene	7.9		320		100		390		160	U	19	
Toluene	52		500		77		320		130	U	20	
o-Xylene	63		2300		230		1500		330		12	
m+p-Xylene	55		2200		330		1700		290	U	5.8	U
Isopropylbenzene	3.2	U	51	J	5.8	J	64	U	160	U	3.2	U
n-Propylbenzene	6.7		380		31		210		290	U	5.8	U
p-Isopropyltoluene	3.2	U	270		14		110	J	160	U	6.6	
1,2,4-Trimethylbenzene	140		5200		440		5200		3700		12	
1,3,5-Trimethylbenzene	25		2400		190		1500		540		48	
n-Butylbenzene	17		3000		140		2600		1600		3.2	U
sec-Butylbenzene	3.2	U	33	U	3.2	U	64	U	160	U	3.2	U
Naphthalene	1000		84000		3100		76000		160000		410	
MTBE	3.2	U	33	U	3.2	U	64	U	160	U	3.2	U
t-Butyl-benzene	39		3400		210		2600		860		3.2	U

CM Laboratories
Industrial Corrosion Management, Inc.
52 Route 10
Randolph, NJ 07869
Phone: 201-584-0330 FAX: 201-584-0515

RUSH

APRIL 16, 1997
16:15:24

Client:
IMPACT ENVIRONMENTAL
Source:
97-070

TENTATIVE FAX PRELIMINARY RESULTS

These results are tentative, subject to change pending QA/QC review.

Client Sample Number	SP-1	SP-2	SP-3	SP-4	SP-5	SP-6
ICM Sample Number	260189	260190	260191	260192	260193	260194
Sampling Date	04/05/97	04/05/97	04/05/97	04/05/97	04/05/97	04/02/97
Units	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
SEMIVOLATILE PARAMETERS (BASE/NEUTRAL)						
Naphthalene	39000	470000	200000	230000	12000	2800
Acenaphthylene	22000	61000	24000	69000	3300	2200
Acenaphthene	11000	55000	21000	59000	10000	2400
Fluorene	41000	170000	68000	190000	7300	5500
Phenanthrene	160000	770000	320000	640000	18000	14000
Anthracene	20000	72000	36000	93000	5900	3400
Fluoranthene	60000	200000	61000	170000	9400	9500
Pyrene	140000	440000	200000	410000	18000	16000
Benzo(a)anthracene	56000	160000	67000	140000	6700	4900
Chrysene	68000	200000	88000	180000	6800	5600
Benzo(b)fluoranthene	61000	170000	74000	140000	4700	3100
Benzo(k)fluoranthene	2100 U	11000 U	2100 U	11000 U	1100 U	2200 U
Benzo(a)pyrene	42000	110000	50000	110000	7300	4000
Indeno(1,2,3-cd)pyrene	12000	33000	17000	32000	2000	2200 U
Dibenz(a,h)anthracene	6200	17000	8900	15000	910 J	2200 U
Benzo(g,h,i)perylene	16000	39000	19000	34000	2100	2200 U
Total Non-Target Compounds	NA	NA	NA	NA	NA	NA

ICM Laboratories
Industrial Corrosion Management, Inc.
1152 Route 10
Randolph, NJ 07869
Phone: 201-584-0330 FAX: 201-584-0515

RUSH

APRIL 21, 1997
15:37:59

Client:
IMPACT ENVIRONMENTAL
Source:
97-070

TENTATIVE FAX PRELIMINARY RESULTS

These results are tentative, subject to change pending QA/QC review.

Client Sample Number	GWP-1		GWP-2		GWP-3		GWP-4		GWP-6	
ICM Sample Number	260195		260196		260197		260198		260199	
Sampling Date	04/05/97		04/05/97		04/05/97		04/05/97		04/05/97	
Units	UG/L		UG/L		UG/L		UG/L		UG/L	
SEMIVOLATILE PARAMETERS (BASE/NEUTRAL)										
Naphthalene	270		3200		3300		4500		32	
Acenaphthylene	78		390		160		420		4	
Acenaphthene	24		360		140		310		9.7	
Fluorene	90		980		470		1100		10	
Phenanthrene	290		3000		920		2100		17	
Anthracene	43		430		220		550		3.7	
Fluoranthene	140		1100		280		620		10	
Pyrene	300		1700		560		1500		12	
Benzo(a)anthracene	110		640		210		660		4	
Chrysene	150		760		250		640		4.5	
Benzo(b)fluoranthene	120		560		170		510		4.8	
Benzo(k)fluoranthene	7.0	U	7.0	U	7.0	U	7.0	U	0.7	U
Benzo(a)pyrene	93		410		160		460		3.5	
Indeno(1,2,3-cd)pyrene	31		85		29		77		1.6	
Dibenz(a,h)anthracene	5.0	U	44		17		43		0.5	U
Benzo(g,h,i)perylene	36		98		40		86		1.8	
Total Non-Target Compounds	NA		NA		NA		NA		NA	

ICM Laboratories
Industrial Corrosion Management, Inc.
1152 Route 10
Randolph, NJ 07869
Phone: 201-584-0330 FAX: 201-584-0515

RUSH

APRIL 21, 1997
15:38:16

Client:
IMPACT ENVIRONMENTAL
Source:
97-070

TENTATIVE FAX PRELIMINARY RESULTS--FOOTNOTE PAGE

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+ = Indicates that an MDL was not available for this compound. PQL was reported.

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P = Positive

N = Negative

MATT