SUMMARY REPORT OF SUPPLEMENTAL

SUBSURFACE INVESTIGATION

Performed on the Property

Located at

104 Ashburton Avenue
City of Yonkers
Westchester County, New York

June 15, 2000

Prepared By:

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ESI File Number: GY99143.30

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Prepared For:

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The undersigned has reviewed this Report and certifies to the Greyston Foundation that the information provided in this document is accurate as of the date of issuance by this office.

Any and all questions or comments, including requests for additional information, should be submitted to the undersigned.

Paul H. Ciminello
President

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1.0 INTRODUCTION

1.1 Purpose

This Summary Report of Supplemental Subsurface Investigation ("Report") documents field work performed by Ecosystems Strategies, Inc. ("ESI") on the property located at 104 Ashburton Avenue in the City of Yonkers, Westchester County, New York. The work summarized in this Report was performed to address potential environmental liabilities on specified portions of the subject property (see Section 1.4, below) identified as the result of a Combined Phase I & Phase II Environmental Site Assessment ("Combined Assessment") dated October 11, 1999 and prepared by ESI.

The specific purpose of this Report is to supplement the work performed by ESI and described in the previously prepared Combined Assessment. This Report is intended to be utilized in conjunction with the Combined Assessment to provide a complete characterization of site soil and groundwater conditions. All work performed in this Report was performed in accordance with the Scope of Work prepared by ESI and approved by the Greyston Foundation.

This Report describes all field work methodologies for the work conducted by this office, includes discussions of the resulting analytical data from collected samples, and provides conclusions and recommendations drawn from the field work and analytical data.

1.2 Limitations

This written analysis summarizes the site characterization activities conducted on specified portions of the property located at 104 Ashburton Avenue, City of Yonkers, Westchester County, New York and is not relevant to other portions of this property or any other property. It is a representation of those portions of the property analyzed as of the respective dates of field work. This Report cannot be held accountable for activities or events resulting in contamination after the dates of field work.

Services summarized in this Report were performed in accordance with generally accepted practices and established NYSDEC protocols. Unless specifically noted, the findings and conclusions contained herein must be considered not as scientific certainties, but as probabilities based on professional judgement.

1.3 Site Location and Description

The subject property consists of a specified portion of the approximately 1.61-acre property located at 104 Ashburton Avenue, City of Yonkers, Westchester County, New York. The site is located in a historically industrial area of the City of Yonkers. A map depicting the location of the subject property is provided in Appendix A of this Report.

The subject property is an irregularly-shaped parcel which has approximately 195 feet of frontage on the northern side of Ashburton Avenue, approximately 216 feet of frontage on the eastern side of Alexander Street, and which extends approximately 295 feet northward from Ashburton Avenue. The western and northern portions of the subject property are comprised of unpaved, fenced-in areas overgrown with vegetation. The central eastern portion of the property is a fenced, macadam-paved parking lot. On the eastern portion of the subject property, a one-story, brick structure occupied by a Metro-North substation is present. The substation extends along a portion of the eastern property border. A concrete retaining wall separates the subject property from adjoining railroad tracks to the east. A Field Work Map indicating specific site characteristics is located in Appendix A of this Report.

1.3.1 Site Hydrogeology

Groundwater was encountered at approximately 2-5 feet below grade during the subsurface investigation performed on the subject property. The direction of on-site groundwater flow is in a south westerly direction, toward the Hudson River located approximately 0.08 miles west of the subject property. A more complete discussion of site hydrogeology is found in Section 6.0, Tidal Fluctuation Study, of this Report.

1.3.2 Site Topography

According to observations made during the subsurface investigation, the topography of the Site is generally level with the surrounding properties and has a gentle downslope toward the Hudson River. The topography of the subject property has surface elevations ranging from approximately 10 to 15 feet above mean sea level (msl).

1.4 Previous Environmental Reports

A Combined Phase I & Phase II Environmental Site Assessment ("Assessment") dated October 11, 1999 was prepared by ESI. The Assessment was conducted by ESI to determine the presence of any environmental concerns with the potential to represent a financial liability. The Phase I portion of the Assessment involved the review of available historical maps, City of Yonkers records, federal and state computer databases and printed records for documentation of potential liabilities, and a visual inspection of the Site ("site inspection"). The Phase II portion of the Assessment included documenting existing groundwater conditions at the subject property by development and sampling five of six pre-existing groundwater wells. The sixth on-site well could not be located during the Site investigation.

Samples collected by ESI from the five wells were analyzed for volatile organic compounds (VOCs) and a category of semi-volatile organic compounds (SVOCs) commonly associated with fuel oils and polynuclear aromatic hydrocarbons (PAHs). Laboratory analysis of these samples identified the presence of VOC compounds and semi-volatile (PAH) petroleum compounds at concentrations exceeding NYSDEC established action levels. A comparison of this laboratory data with laboratory data generated during previous sampling rounds indicated a decrease in VOC concentrations. PAH concentrations did not demonstrate a reduction in concentration. However, contamination persists on the Site at concentrations warranting remediation.

Three areas of concern were identified on-site. Area #1 is defined as the petroleum contamination encountered in the vicinity of boring B-1 which was extended within the on-site parking area, approximately 80 feet southwest from the northeastern property corner. Creosote product was encountered in soil samples collected from this area. Area #2 is the area identified in the vicinity of soil boring B-3. Petroleum-contaminated soil has been identified in this area. Utility trenches are likely to be placed in this area. Area #3 is the northwestern portion of the Site where the prospective building will be constructed.

1.5 Objectives

The services conducted by ESI on April 26 and 27, 2000 summarized in this Report were performed to determine the magnitude of the above-referenced previously identified areas of concern. The objectives of the work conducted by ESI were outlined in a Scope of Work prepared for the Client and were as follows:

- To document general site conditions and in particular concentrations of metals in on-site soil and groundwater;

- To document concentrations of metals and petroleum contamination within the "footprint" of the prospective building construction area;
- To determine, if possible, the lateral extent of free product (Creosote and/or petroleum) in the vicinity of boring B-1 (Area #1);
- To conduct a tidal fluctuation study to determine tidal influence on on-site groundwater;
- To suggest, if appropriate, further investigative and/or remedial options regarding identified subsurface or surface contamination; and
- To prepare a Report documenting all field work activities, resulting analytical data and conclusions and recommendations pertaining to the subsurface investigation.

2.0 SUMMARY OF SERVICES

2.1 Summary of Field Work Services

In order to address the previously identified areas of environmental concern, the following services were conducted by ESI on selected portions of the Site:

- Ten borings were extended on the Site: five in the vicinity of boring B-1 (Area #1) to determine the presence or absence of free product (Creosote and/or petroleum), one in the vicinity of B-3 (Area #2), and four in the vicinity of the proposed building footprint (Area #3).

- Twenty-two soil samples were collected from the ten on-site borings. Based upon field observations, samples from seven of the borings were submitted for analysis. Various analyses were performed on these samples, including RCRA metal analysis [8 RCRA metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver) plus Cyanide], PAHs, and product identification.

  One 4" product recovery well and one 2" groundwater monitoring well were installed on the northeastern quadrant of the Site in the vicinity of boring B-1.

- Five groundwater samples were obtained from existing on-site groundwater monitoring wells (MPI-1, MP1-2, MPI-3, MPI-4B, and MPI-6). Groundwater samples were analyzed to determine the presence or absence of dissolved metals.

- A tidal fluctuation study was conducted on the Site by ESI to determine the impact of tidal influence on existing groundwater monitoring well depths. All five wells sampled were utilized by ESI for this tidal influence analysis.

2.2 Field Work Preparation Activities

2.2.1 Utility Markout

Prior to the initiation of field work, a request for a complete utility markout of the subject property was submitted by ESI as required by New York State Department of Labor regulations. Confirmation of underground utility locations was secured and a field check of the utility markout was conducted prior to the extension of soil cores.

2.2.2 Equipment Decontamination and Calibration

Prior to the initiation of field work, all field equipment was properly decontaminated in accordance with NYSDEC guidelines, and all field instruments were properly calibrated in accordance with procedures set forth by the equipment manufacturer(s). A Thermal Instruments 580B photo-ionization detector (PID) was used for site-screening of organic vapors. The 580B PID was calibrated to read parts per million calibration gas equivalents (ppm-cge) of isobutylene.

2.3 Field Work Logs

An assessment of subsurface soil characteristics, including soil type, the presence of foreign materials, field indications of contamination (e.g., unusual coloration patterns or odors), and instrument indications of contamination (i.e., PID readings) was made by ESI personnel during the extension of each soil boring. ESI personnel maintained independent field logs documenting the physical characteristics, PID readings and any field indications of contamination for all encountered material at each boring location. Relevant information from ESI logs for each boring location is summarized in each task section.

Independent boring logs were also maintained by Soiltesting during the extension of soil borings and the installation of the product recovery well and groundwater monitoring well.

2.4 Sample Collection

All soil and water samples were collected in a manner consistent with NYSDEC sample collection protocols (see Soil and Water sections, below). Subsequent to sample collection, the sample containers were placed in a cooler prior to transport to a NYSDOH-approved laboratory for analysis. Appropriate chain of custody procedures were followed.

Notations were made regarding the sampled material's physical characteristics (e.g., material composition, color, odor, viscosity). At each sample location and for each sample type (soil, liquid, and sludge), a sufficient volume of material was collected for the known required analyses and for any potential additional analyses.

ESI personnel maintained field logs documenting the physical characteristics, PID readings, and any field indications of contamination for all encountered material at each boring location. Relevant information from ESI logs for each boring location is summarized in Section 2.3, below.

2.4.1 Soil

All soil samples were collected in a manner consistent with NYSDEC sample collection protocols. Decontaminated stainless steel trowels and dedicated gloves were used at each sample location to place the material into jars pre-cleaned at the laboratory. Prior to and after the collection of each material sample, the sample collection instrument was decontaminated to avoid cross-contamination between samples. Decontamination procedures were consistent with established USEPA and NYSDEC protocols, as outlined below:

- soapy water rinse
- de-ionized water rinse
- methanol rinse
- nitric acid rinse (10% solution)
- air drying
- de-ionized water rinse

2.4.2 Groundwater

Groundwater monitoring well development was performed in order to clear fine-grained material that might have settled around the well screen and to enhance the natural hydraulic connection between the well screen and the surrounding soils. Prior to development, each monitoring well casing was opened and the well column immediately screened with a PID to document the presence of any volatile organic vapors. Each monitoring well was then purged with a mechanical pump properly decontaminated between wells in accordance with standard decontamination protocol. All groundwater samples were collected with dedicated, disposable polyethylene bailers to further avoid cross-contamination of samples. Water removed from each monitoring well was visually inspected for indications of petroleum contamination and observations duly recorded in fieldwork observation logs.

All soil and water samples (accompanied by properly completed chain of custody records) were transported via courier to York Analytical Laboratories, Inc., a New York State Department of Health-certified laboratory (ELAP Certification Number 10854), for chemical analyses.

3.0 SOIL CORES

3.1 Methodology

On April 26, 2000, ESI personnel oversaw the extension of 10 soil borings and collected five surface soil samples and 17 subsurface samples on the Site within potential areas of concern described in Section 1.4 above and for the purpose of characterizing on-site soil conditions. Soil borings were extended using a truck-mounted boring rig with a hollow stem auger operated by personnel from Soiltesting, Inc.

Four soil sores were extended in the vicinity of boring B-1 to determine the presence or absence of free product (Creosote and/or petroleum). Creosote contamination may be the result of historic usage of the Site as a coal/gasification plant. Petroleum storage has also been documented on this Site.

The 580B Thermal Instruments PID was utilized to screen the soils encountered during the extension of the soil cores to document the presence or absence of any volatile organic vapors.

3.2 Observations

Subsurface soils encountered on the subject property during the extension of the soil borings generally consisted of coarse to fine-grained, medium brown to black sandy soil layers with traces of clay and silt and varying degrees of wetness. Layers of peat were also encountered at depths greater than 10 feet bsg. Fill material encountered consisted of brick fragments and decaying wood. Areas where Creosote contamination was encountered contained a thick black sludge substance.

Field observations for all soil borings and subsurface soil samples are described in detail in Table 1, below. A Field Investigation Map indicating the boring locations and associated selected site features is provided in Appendix A of this Report.

Table 1: Field Observations of Soil Borings

BORING	LOCATION	DEPTH	SOIL CHARACTERISTICS	PID READING	FIELD OBSERVATIONS
SS-1	Northwestern corner of the subject property; approximately 69 feet from the western property border and 80 feet from the northern property border	1 - 3' sample	Fill material consisting of dark brown to black material intermixed with gravel, ash, coal and brick fragments	0	No evidence of contamination
		2 - 3'	Moist, same as above		
SS-2	Northwestern corner of the subject property; approximately 71 feet from the western property border and 122 feet from the northern property border	1 - 2' sample	Fill material consisting of dark brown to black material intermixed with gravel, ash, coal and brick fragments	0	No evidence of contamination
		2.5 - 3' sample	Damp, hard packed black ash and coal dust.	3.5	Burned, oily odor
SS-3	Northwestern corner of the subject property; approximately 43 feet from the western property border and 83 feet from the northern property border	Upper 1'	Dark Brown fine gravel and silt	0	No evidence of contamination
		1 - 2' sample	Moist, light brown to tan in color	0	No evidence of contamination

BORING	LOCATION	DEPTH	SOIL CHARACTERISTICS	PID READING	FIELD OBSERVATIONS
SS-4	Northwestern corner of the subject property; approximately 44 feet from the western property border and 125 feet from the northern property border	1 - 2' sample	Majority of material brick powder and fragments	0	No evidence of contamination
HB-1A	Southern central portion of the site; approximately 20 feet north of the Ashburton Ave. property border and 12 feet west of the chain link fence extending across the central portion of the site.	1 - 5' sample	Brown fine to medium grained sand and intermixed gravel	0	No evidence of contamination
		5 - 7' sample	Loose brown sand intermixed with gravel and silt	0	No evidence of contamination
		7 - 9' sample	Silt and sand mixed with wood and brick fragments	0	Strong petroleum odor
		10 - 11' sample	Samples very wet and contained a gravel-sand mix which was stained gray.	0	Strong petroleum odor
B-1A (Converted to monitoring well EMW-1)	Approximately 3 feet west of soil boring B-1	4 - 5' sample 9 - 10' sample 11' sample 12 - 14' sample 18 - 20' sample	Material encountered from surface to 5' consisted of sand and silt with intermixed gravel. Material encountered from 9' to 20; consisted of sand and silt intermixed with a black sludge. Peet layers were encountered at a depth of approximately 13' bsg.	75 = 200	A strong gasoline odor was encountered at depths ranging from 3' to 12'. Material encountered at greater depths consisted of a black petroleum/creosote sludge which had a very strong odor.
EMW-2R	Approximately 4 feet east of monitoring well EMW-1	No sampling Conducted	Material consisted of brown to black sand and silt intermixed with gravel and a black sludge	100 - 150	Strong petroleum odor and free creosote product
B-3A	Northeastern portion of site in vicinity of B-1; approximately 37 feet south of the northern property line and 36 feet west of the eastern property line	1 - 3' sample	Brown fine to medium grained sand and intermixed gravel and traces of silt	0	Strong gasoline odor
		3 - 5'	same	0	Strong gasoline odor
		5 - 6.5'	same intermixed with brick fragments	0	Strong gasoline odor

BORING	LOCATION	DEPTH	SOIL CHARACTERISTICS	PID READING	FIELD OBSERVATIONS
B-4A	Northeastern portion of site in vicinity of B-1; approximately 27 feet south of the northern property line and 36 feet west of the eastern property line	1 - 3' 4 - 5' 5 - 6' sample	Sand intermixed with brick fragments Brown fine to medium grained sand and silt with intermixed gravel same	60	Petroleum odor/sheen and coal tar odor.
B-5A	Northeastern portion of site near B-1; approximately 62 south of the northern property line and 57 feet west of the eastern property line	1 - 3' 4 - 6' 5 - 7' sample	Brown sand with fine gravel, silt, and brick fragments intermixed Sheen on soil Black color	0	No evidence of contamination Sheen, odor and staining.
B-6A	Central eastern portion of site; approximately 99 feet south of the northern property line and 34 feet west of the eastern property line	3 - 7'	Petroleum sheen on soil. Course grained sand with strong petroleum odor from 5 - 7' bsg	0	Petroleum sheen and odor

4.0 PRODUCT RECOVERY/GROUNDWATER MONITORING WELL INSTALLATION

Two of the boreholes extended on April 26 and 27, 2000 were completed as monitoring wells. Monitoring well EMW-1 was constructed of 2" internal diameter, schedule 40, polyvinyl chloride (PVC) well casing and #10 slotted well screen. Monitoring well EMW-2R was constructed with schedule 40, polyvinyl chloride (PVC) well casing and #20 slotted well screen. The depths of the installed wells range from 16' to 10', respectively, below land surface. Each monitoring well was secured with locked, flush-mounted casing. Observations made during the installation of these wells are included in Table 1 on page 7.

These two wells installed by ESI are intended for use during remedial activities proposed for this Site. Development of these wells and subsequent operation will be conducted upon approval of the Workplan for Site Closure prepared for the Client.

5.0 GROUNDWATER MONITORING WELL SAMPLING

5.1 Methodology

On April 26, 2000, ESI personnel sampled five existing groundwater monitoring wells designated MPI-1, MPI-2, MPI-3, MPI-4B, and MPI-6) located at various locations on the Site. Samples were obtained for the purpose of determining concentrations of dissolved metals in on-site groundwater. A tidal fluctuation study was also conducted to determine the tidal influence of the nearby Hudson River on site groundwater. Details regarding the tidal fluctuation study are provided in Section 6.0, below.

Each monitoring well was purged with a mechanical pump properly decontaminated between wells in accordance with standard decontamination protocol. All groundwater samples were collected with dedicated, disposable polyethylene bailers to further avoid cross-contamination of samples

The 580B Thermal Instruments PID was utilized to screen each monitoring well for the presence of any volatile vapors.

5.2 Observations

Field observations made during the sampling of the five groundwater monitoring wells are detailed below in Table 2. A Field Investigation Map illustrating the groundwater monitoring well locations and associated selected site features is provided in Appendix A of this Report.

Table 2: Groundwater Monitoring Well Sampling Observations

WELL #	LOCATION	TIME	DEPTH TO WATER FROM PVC	DEPTH TO WATER FROM STEEL CASING	PID READING
MP-1	Approximately 12 feet northeast of the southwestern corner of the Site	13:45	2.80'	3.15'	0
MPI-2	Centrally located along the western property border approximately 50 feet west of MPI-5A.	13:45	3.06'	3.54'	0
MPI-3	Located in the northwestern corner of the property approximately 50 feet southwest of MPI-4B	13:52	3.51'	3.90'	0
MPI-4B	Located on the northeastern portion of the property approximately 50 feet north of MPI-5A	13:58	2.59'	2.87'	0
MPI-6	Approximately 20 feet from the southeastern corner of the property	14:04	1.57'	1.96'	0 Petroleum Odor

MPI-1

Approximately 15 gallons of water were purged from groundwater monitoring well MPI-1 prior to sampling. The water purged was dark brown and silty at initial purge and quickly cleared. No odor or sheen were noted, and the well exhibited a good recharge rate.

MPI-2

The first two gallons of water purged from groundwater monitoring well MPI-2 prior to sampling were dark and silty. After the two-gallon purge, the purge water was clear. A total of 12 gallons were purged at which point the well was purged dry. No odors or sheen were noted in purge water.

MPI-3

The first five gallons purged from groundwater monitoring well MPI-3 consisted of black silty purge water. The well was pumped dry at eleven gallons. No odor or sheen were noted in purged water.

MPI-4B

The first four gallons of water purged from groundwater monitoring well MPI-4B were black. Petroleum sheen and odor were observed in the purge water. The water became clear at 5-6 gallons. Purging was continued to 15 gallons.

MPI-5

The well casing at MPI-5 was damaged and no water sample was obtained from this groundwater monitoring well.

MPI-6

A strong gasoline odor was noted during purging of groundwater monitoring well MPI-6. A sheen was also present on the purge water. The well was purged of 15 gallons of water, and good recharge was observed.

6.0 TIDAL FLUCTUATION STUDY

6.1 Methodology

On May 18, 2000, a Tidal Fluctuation Study was conducted between the hours of 10:00 - 10:15 a.m. (high tide) and 4:00 - 4:15 p.m. (low tide) to document potential groundwater fluctuations due to tidal influences. Tidally-influenced water level fluctuations were recorded at 30-minute intervals over a period of 10 hours, the period of time deemed sufficient to generate the necessary data. Depth to groundwater was measured to an accuracy of 0.01 feet in monitoring wells MPI-1, MPI-2, and MPI-3 (located on the western portion of the property, approximately 450 feet east of the Hudson River); in monitoring wells MPI-4 and MPI-6 (located on the eastern portion of the property, approximately 555 feet east of the Hudson River); and in the Hudson River itself.

A gauge was installed on the bulkhead in the river approximately 420 feet west of the Site to measure actual tidal fluctuations at this location.

Tidal influence was monitored in the monitoring wells and the river with rounds of water level measurements conducted every 30 minutes, beginning at approximately 9:30 a.m. EST, before high tide, and ending at around 7:00 p.m., approximately three hours after low tide. The water level elevations were compiled, and contour maps of groundwater elevation variation were prepared to illustrate the tidal influence on groundwater and the direction of flow at 10:00 a.m. EST and at 4:00 p.m. EST, coinciding with high tide and low tide, respectively. Groundwater Elevation Contour Maps are provided in Appendix A of this Report.

6.2 Findings

6.2.1 Mean Groundwater Elevations

Information gathered during the field work conducted by this office on May 18, 2000 indicates that groundwater is present on the site at between 2.74 and 4.86 feet below well casing grade. Groundwater elevation information gathered during the field work conducted is provided in Tables 4 and 5 in Appendix C.

6.2.2 Tidal Influence and Groundwater Flow Direction

The direction of groundwater flow on the subject property is graphically represented on the Groundwater Contours Maps provided in Appendix A. A review of the depth to groundwater information provided in Tables 4 and 5 in Appendix C supports groundwater measurements taken on April 26, 2000 which documented the direction of groundwater flow to be in a southwesterly direction.

Groundwater flow from the uplands on the east to the Hudson River on the west side of the site is the most important element of the subsurface flow regime. However, because the tidal influence is strong next to the river, it is impossible to consider hydraulic gradients and direction of groundwater flow without observing the tidal influence.

As shown in Tables 4 and 5 in Appendix C, no significant tidal influence was observed in the on-site wells. Moreover, as illustrated in the Groundwater Contour Maps, the southwesterly direction of groundwater flow is not significantly altered during the tidal cycle.

7.0 LABORATORY ANALYSIS

7.1 Terminology

7.1.1 Action Levels

The term "action level," as defined in this Report, refers to the concentration of a particular contaminant above which remedial actions are considered more likely. The overall objective of setting action levels is to assess the integrity of on-site soils relative to conditions which are likely to present a threat to public health, given the existing and probable future uses of the site. On-site soils with contaminant levels exceeding these action levels are considered more likely to warrant remediation. No independent risk assessment was performed as part of this investigation.

The action levels identified in this Report for petroleum hydrocarbons in soils are determined based on the NYSDEC Spill Technology and Remediation Series (STARS) Memo #1: Petroleum-Contaminated Soil Guidance Policy (reprinted July 1993) and the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) (January 24, 1994) as modified by subsequent, relevant NYSDEC Records of Decision (ROD).

Action levels for metals are also based on the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) (January 24, 1994) as modified by subsequent, relevant NYSDEC RODS.

Action levels for metals and cyanide in groundwater are based on the NYSDEC's Water Quality Regulations for Surface Waters and Groundwaters, 6 NYCRR Parts 700-705, effective September 1, 1991.

All data have been analyzed in accordance with applicable standards contained in the aforementioned documents. All detected compounds with their respective action levels are provided in the data summary tables.

7.1.2 Background Levels

The term "background level", as defined in this Report, is the concentration of a particular metal which is known to naturally occur in Eastern United States soils. The overall objective of setting background levels for metals is to assess the concentrations of metals in on-site soils relative to those that are naturally occurring.

On-site soils with metal concentrations exceeding these background levels are considered more likely to have been affected by anthropogenic contributions. The background levels for metals provided in this Report are based on the NYSDECs TAGM (January 24, 1994).

Refined petroleum hydrocarbons are not naturally occurring and therefore, no discussion of background levels for these compounds is appropriate.

7.2 Laboratory Findings

Provided below is a summary of the findings generated by the laboratory analysis of the soil and groundwater samples collected during the field work documented in this Report. Copies of referenced laboratory reports are included as Appendix B of this Report. Recommendations regarding detected contaminants are located in Section 8.0, Conclusions and Recommendations of this Report.

7.2.1 Soil

Samples of soil material were collected from each of the soil borings where appropriate. Sampling for laboratory analysis was based on observations made by ESI personnel during the extension of the soil cores, including, the presence or absence of elevated PID readings, unusual odors, discoloration, or any other unusual patterns. A sufficient number of samples were submitted for analysis to provide a general screening of the Site.

Metals

Soil samples SS-1 (1-3'), SS-2 (1-2'), SS-2 (2.5-3'), SS-3 (1-2'), SS-4 (1-2') (collected from Area #3)and B-3A (1-3') (collected from Area #1) were submitted to the laboratory for analysis to determine the presence or absence of the 8 RCRA metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver) and Cyanide. Metals were detected at levels exceeding established action levels in five of the six samples submitted for analysis. Sample SS-3 (1-2") did not contain metals at levels exceeding their respective guidance values.

Several metals were either not detected or detected consistently at levels below their established action levels. Cadmium, Cyanide, Mercury, and Silver were detected in various samples at concentrations at or below their respective action levels.

Arsenic was detected at concentrations exceeding its action level (7.5 mg/kg) in three samples. Arsenic was detected at 49.4 mg/kg in sample SS-1 (1-3'), at 63.8 mg/kg in sample SS-2 (2.5-3'), and at 84.3 mg/kg in sample SS-4 (1-2').

Barium was detected at concentrations exceeding its action level (300 mg/kg) in two samples. Sample SS-2 (1-2') contained Barium at a concentration of 669 mg/kg, and sample B-3A (1-3') contained Barium at a concentration of 371 mg/kg.

Chromium was detected above its action level (50 mg/kg) in one sample. Laboratory analysis indicated that Chromium was present at 154 mg/kg in sample SS-2 (1-2').

Lead was detected above the action level for lead in urban soils (400 mg/kg) in three samples. Sample SS-1 (1-3') contained 543 mg/kg of lead, sample SS-2 (2.5-3') contained 522 mg/kg of lead, and sample B-3A (1-3') contained 529 mg/kg of lead.

Selenium was detected above its established action level (2 mg/kg) in one sample. Sample B-3A (1-3') contained selenium at 3.51 mg/kg.

PAHs

Soil sample SS-2 (2.5-3') was submitted for laboratory analysis to determine the presence or absence of PAHs in the asphalt paved area located in the northwest quadrant of the Site. Laboratory analysis indicated high action level exceedances for all PAHs with the exception of Anthracene, Benzo (g,h,i) Perylene, Dibenzo (a,h) Anthracene, and Indeno (1,2,3-cd) Pyrene. Exceedances ranged from a low of approximately 11.5 times action level for Napthalene to a high of approximately 7,727 times the action level for Benzo(a) Anthracene.

Soil samples B-1A (4-5') and B-1A (18-20') were submitted for the expressed purpose of delineating the extent of vertical contamination in Area #1. The presence of contaminants found in both samples indicate high action level exceedances for all PAHs with the exception of Benzo(g,h,i) Perylene and Indeno (1,2,3-cd) Pyrene. Gross contamination is present in both samples. However, the concentration of contaminants increases greatly with sample depth for all PAHs detected. Exceedances for the samples range from a low of approximately 22 times the action level (Fluorene at the 4-5 foot depth) to a high of approximately 7,000 times the action level (Napthalene at the 18-20 foot depth).

Soil samples B-3A (1-3'), B-4A (5-6.1'), B-5A (5-7') and B-6A (5-7') were extended radially from the central portion of Area #1. Borings were extended in these locations for the expressed purpose of delineating lateral contamination in this area. Samples collected from these borings were not submitted for analysis. Field observations indicated gross evidence of contamination (see Table 1: Field Observations of Soil Borings, above). The obvious presence of contamination made analysis of these samples unnecessary.

Product Identification

Soil sample B-1A (18-20') was submitted for product identification. Product identification indicated free product to be weathered gasoline and #4 or #6 fuel oil. Creosote was not identified in this sample. A subsequent sample of product collected from boring B-1A after completion as monitoring well EMW-1 identified Creosote product in this area.

7.2.2 Groundwater

Groundwater samples MPI-1, MPI-2, MPI-3, MPI-4B, and MPI-6 were analyzed to detect the presence or absence of dissolved metals utilizing applicable USEPA methods. Barium was detected in all five samples at concentrations significantly below the NYSDEC established guidance level of 1,000 μg/l. Lead was detected in one sample (MPI-6) at 14 μg/l, which is significantly below the NYSDEC guidance level for lead of 50 μg/l. No other metals were detected in the samples. Laboratory detection limits for all metals were below established action levels.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This office has completed the services summarized in Section 2.0 and Section 3.0 on specified portions of the approximately 1.61-acre property located at 104 Ashburton Avenue, City of Yonkers, Westchester County, New York. Services included the extension of ten (10) soil borings and collection of twenty-one (21) soil samples from various locations on the northern portion of the property, the installation and development of one groundwater monitoring well and one product recovery well, the collection of five (5) water samples, and the completion of a tidal fluctuation survey. Sampling locations were scattered to provide a profile of existing site subsurface and surface soil conditions with the exception of borings extended in the vicinity of B-1 to delineate the lateral and vertical extent of creosote or petroleum contamination.

A Workplan For Site Closure Activities (dated June 9, 2000) has been prepared by ESI to address issues related to the three specified portions of the Site requiring remedial field work. These areas are considered to be concerns because future Site development will require intrusion into known contaminated soil and groundwater present on the Site.

Based on the services provided and data generated, the following conclusions and recommendations (in **bold**) have been made.

Area #1

1. Laboratory analysis of samples collected to delineate the vertical extent of contamination at boring B-1 indicate extremely high PAH levels which increase with depth. Contamination levels at the 18 to 20 foot depth indicate the presence of free product. A product sample submitted for analysis identified the substance as creosote, weathered gasoline, and #4 or #6 fuel oil.

   The presence of this contamination appears to be the result of prior industrial activities conducted on the Site. The operation of portions of the Site as a coal gasification plant is likely to have resulted in the contamination of Area #1 with creosote. Former petroleum bulk storage tanks were historically present on the Site. The presence of weathered gasoline and fuel oil compounds in subsurface soil and groundwater is likely a result of releases from these former tanks.

   During the extension of soil borings in Area #1, creosote contamination was identified at levels warranting remediation.

   It is recommended that a product recovery system be installed and operated on the Site. Groundwater wells designated EMW-1 and EMW-2R should be utilized as potential extraction points.

Area #2 and Area #3

2. RCRA metals were found in soil samples at levels exceeding their respective NYSDEC established guidance values. However, with the exception of arsenic, these exceedances are low and unlikely to impact usage of the Site given its industrial location. The levels of metals indicated do not warrant remediation.

   Laboratory analysis of soil samples indicates the persistent presence of high level exceedances of PAHs in on-site soils. Efforts to delineate the extent of PAH contamination revealed widespread contamination in the northeastern quadrant of the Site. Lateral contamination was indicated in each of the borings extended to further define the on-site area of concern. Findings indicate that the entire northern portion of the parking area is effected by the PAH contamination.

   Given the large area of low level PAH and metals contamination throughout the Site it is recommended that surface soils be capped to minimize direct contact with these soils.

Site development activities including the extension of utility trenches are likely to involve the handling and management of petroleum contaminated soils (specifically in Area #2)

All encountered petroleum contaminated soil should be stockpiled on and covered with 6-mil plastic prior to off-site disposal.

Site Groundwater

3. Analysis of metals in groundwater did not reveal the presence of metals at concentrations exceeding their respective action levels.

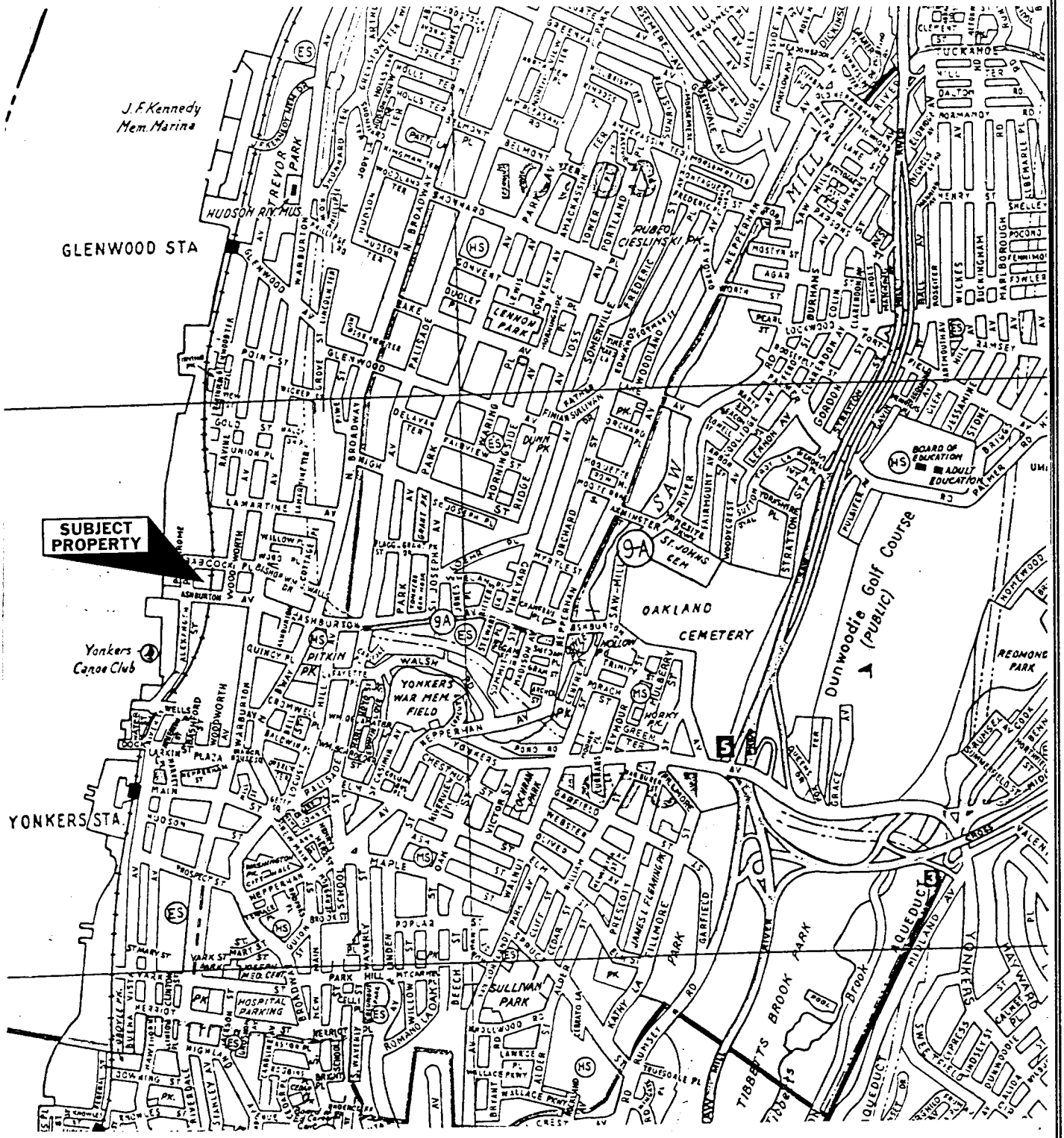
   No further action is recommended with respect to remediation of groundwater for metals.

4. A review of the data generated during the tidal fluctuation study indicate that on-site groundwater is not significantly affected by tidal fluctuations occurring in the nearby Hudson River.

   No further investigation is recommended.

APPENDIX A

Maps



Source: DeLorme Street Atlas USA, Version 6.0

Site Location Map

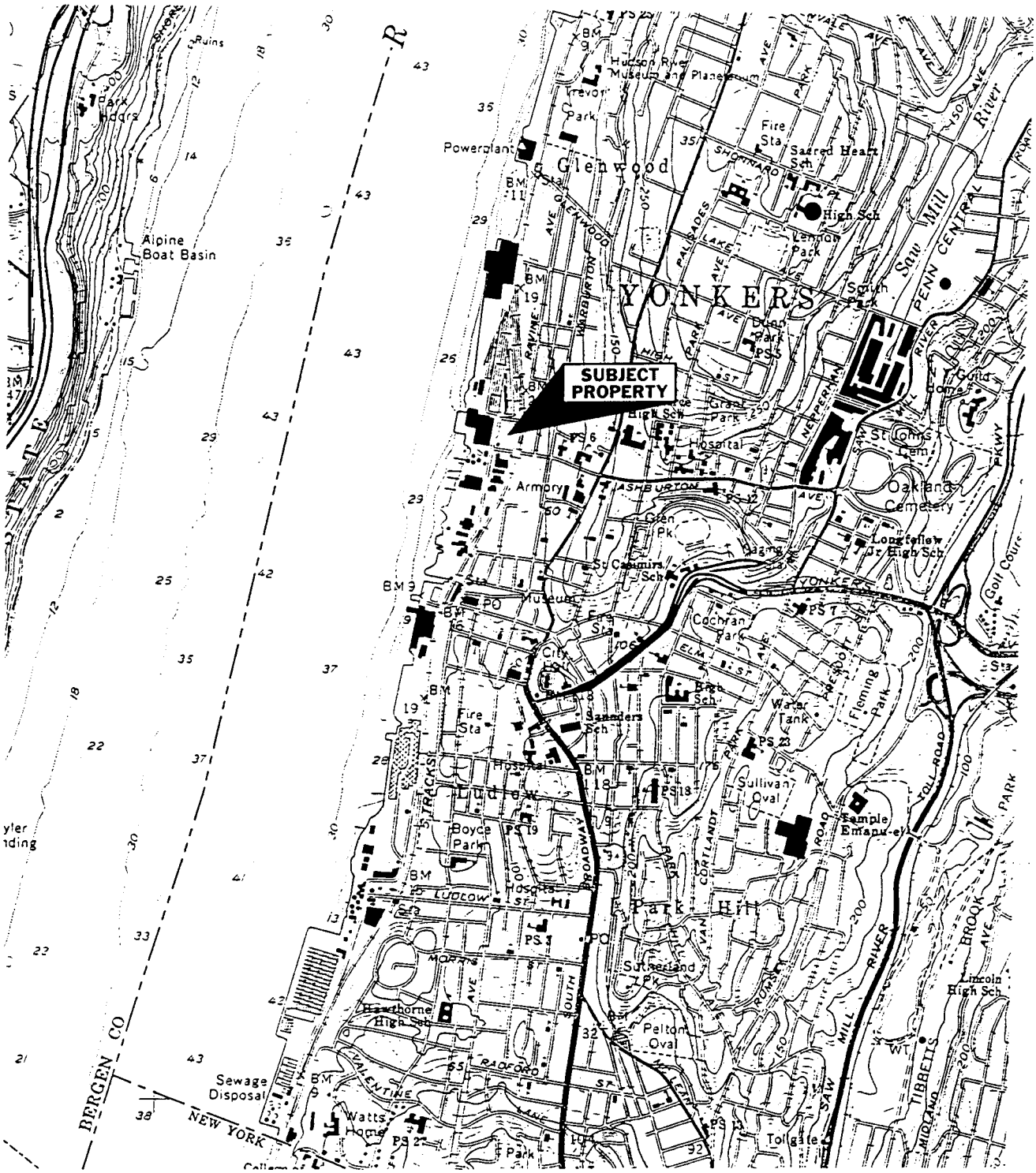
104 Ashburton Avenue
City of Yonkers, Westchester County, New York

N

ESI File: GY99143.30

Date: June 2000

Appendix A

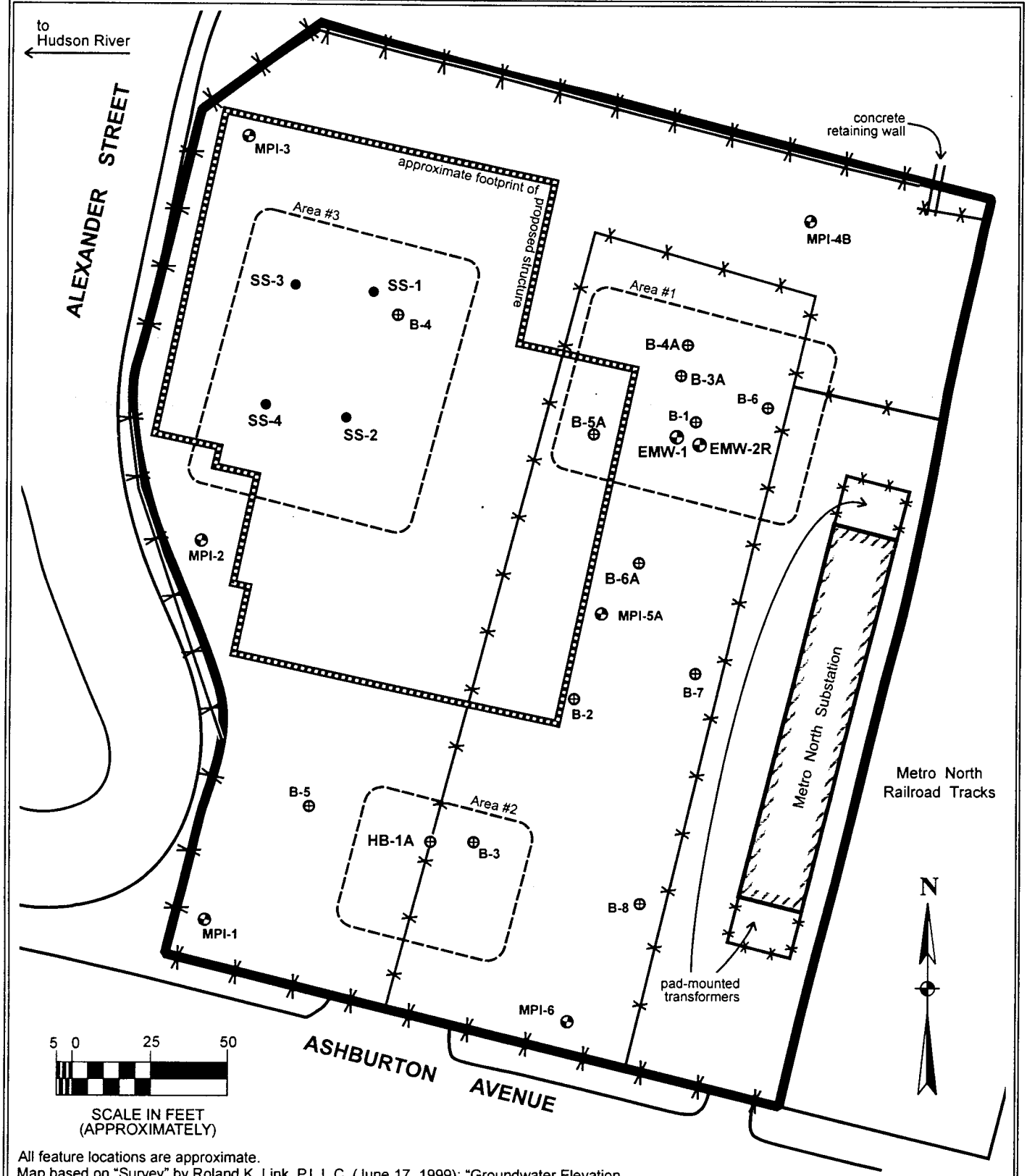


Source: U.S. Department of the Interior Geological Survey Topographic Map of the Yonkers, NY-NJ Quadrangle, dated 1966 (photorevised 19 79)

U.S.G.S. Topographic Map
104 Ashburton Avenue
City of Yonkers, Westchester County, New York

N

ESI File: Gt99143.30
Date: June 2000
Appendix A



All feature locations are approximate.
Map based on "Survey" by Roland K. Link, P.L.L.C. (June 17, 1999); "Groundwater Elevation Contour Map" by Malcom Pirnie (July 1, 1994); and "Site Plan" by Cybul & Cybul A.I.A. Architects (June 21, 2000).

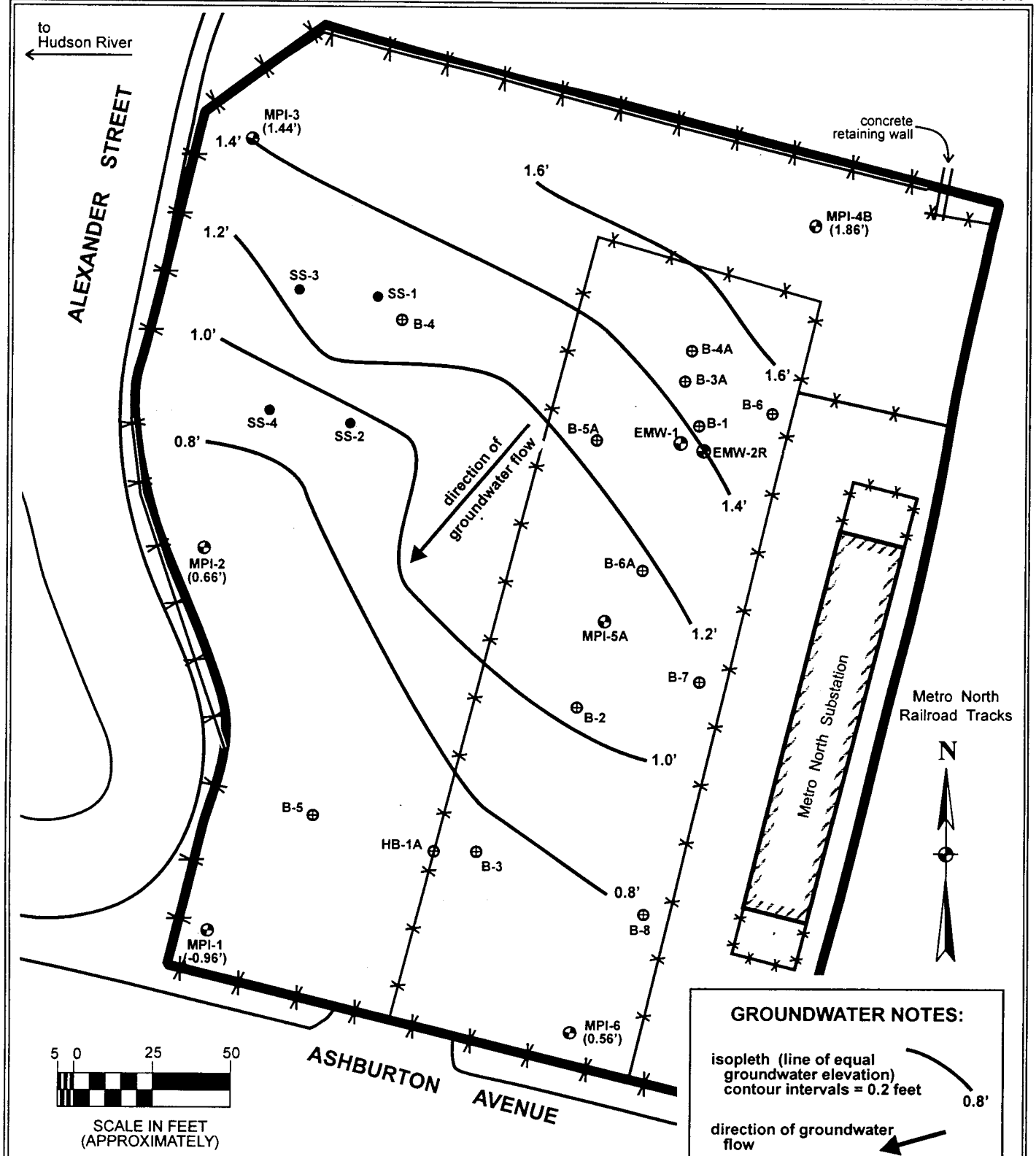
Field Work Map

104 Ashburton Avenue
City of Yonkers
Westchester County
New York

Legend:

- subject property border
- chain-link fence
- Area of Concern (see report) — Area #2
- structure
- surface soil sample ●
- soil boring ⊕
- monitoring well

ESI File: GY99143.30
June 2000
Scale: 1" = 45' (approximately)
Appendix A



GROUNDWATER NOTES:

isopleth (line of equal groundwater elevation) contour intervals = 0.2 feet — 0.8'

direction of groundwater flow

All elevations are expressed in feet above mean sea level (msl).

All feature locations are approximate.
Map based Survey by Roland K. Link, P.L.L.C., dated June 17, 1999 and
Groundwater Elevation Contour Map as prepared by Malcom Pirnie, dated July 1, 1994.

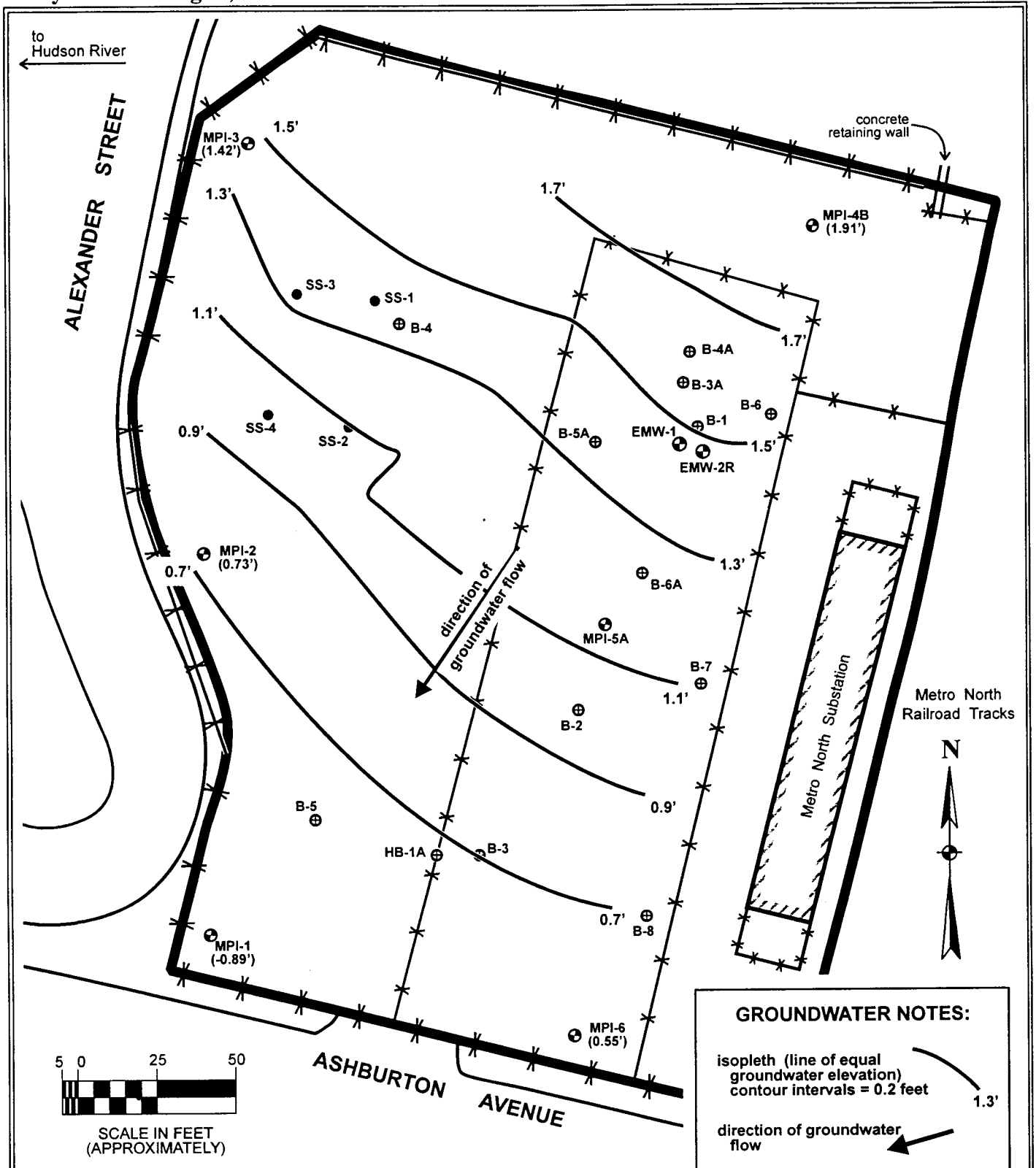
Groundwater Elevation Contour Map

May 18, 2000 (10 am)

104 Ashburton Avenue
City of Yonkers
Westchester County, New York

Legend:
- subject property border
- chain-link fence
- structure
- monitoring well
- surface soil sample
- soil boring

ESI File: GY99143.30
June 2000
Scale: 1" = 45' (approximately)
Appendix A



GROUNDWATER NOTES:

isopleth (line of equal groundwater elevation) contour intervals = 0.2 feet — 1.3'

direction of groundwater flow

All elevations are expressed in feet above mean sea level (msl).

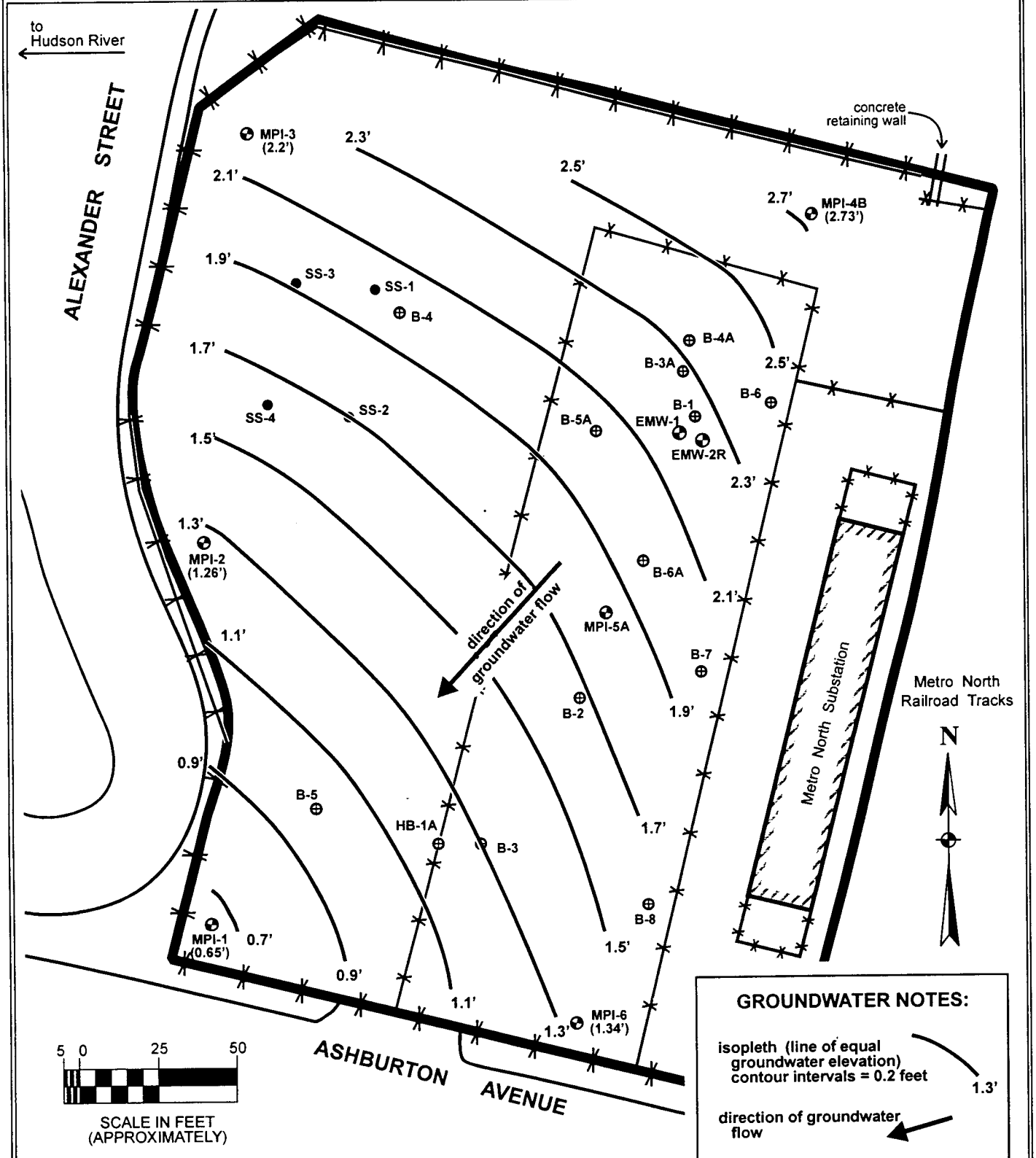
All feature locations are approximate.
Map based Survey by Roland K. Link, P.L.L.C., dated June 17, 1999 and
Groundwater Elevation Contour Map as prepared by Malcom Pirnie, dated July 1, 1994.

Groundwater Elevation Contour Map

May 18, 2000 (4:00 pm)
104 Ashburton Avenue
City of Yonkers
Westchester County, New York

Legend:
- subject property border
- chain-link fence
- structure
- monitoring well
- surface soil sample
- soil boring

ESI File: GY99143.30
June 2000
Scale: 1" = 45' (approximately)
Appendix A



GROUNDWATER NOTES:

isopleth (line of equal groundwater elevation) contour intervals = 0.2 feet — 1.3'

direction of groundwater flow

All elevations are expressed in feet above mean sea level (msl).

All feature locations are approximate.
Map based Survey by Roland K. Link, P.L.L.C., dated June 17, 1999 and
Groundwater Elevation Contour Map as prepared by Malcom Pirnie, dated July 1, 1994.

Groundwater Elevation Contour Map

April 26, 2000 (1:45-2:04 pm)
104 Ashburton Avenue
City of Yonkers
Westchester County, New York

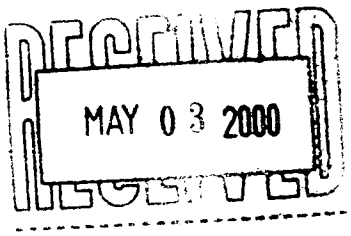
Legend:
- subject property border
- chain-link fence
- structure
- monitoring well
- surface soil sample
- soil boring

ESI File: GY99143.30
June 2000
Scale: 1" = 45' (approximately)
Appendix A

APPENDIX B

Laboratory Reports

YORK
ANALYTICAL LABORATORIES, INC.



Technical Report

prepared for

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Report Date: 4/28/2000
Re: Client Project ID: GY99143.21
York Project No.: 00040548

CT License No. PH-0723 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 93 EPA I.D. No. CT00106

ONE RESEARCH DRIVE STAMFORD, CT 06906 (203) 325-1371 FAX (203) 357-0166

Report Date: 4/28/2000
Client Project ID: GY99143.21

York Project No.: 00040548

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 04/25/00. The project was identifed as your project "GY99143.21 ".

The analysis was conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

The results of the analysis are summarized in the following table(s).

Analysis Results

Client Sample ID			MPI-1		MPI-2	
York Sample ID			00040548-01		00040548-02	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Silver, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Arsenic, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Barium, Dissolved	SW846-6010	mg/L	0.034	0.010	0.062	0.010
Cadmium, Dissolved	SW846	mg/L	Not detected	0.005	Not detected	0.005
Chromium, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Mercury, Dissolved	SW-846-7470	mg/L	Not detected	0.0002	Not detected	0.0002
Lead, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Selenium, Dissolved	SW846-6010	mg/L	Not detected	0.010	Not detected	0.010

Client Sample ID			MPI-3		MPI-4B	
York Sample ID			00040548-03		00040548-04	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Silver, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Arsenic, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Barium, Dissolved	SW846-6010	mg/L	0.063	0.010	0.144	0.010
Cadmium, Dissolved	SW846	mg/L	Not detected	0.005	Not detected	0.005
Chromium, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005

YORK

Client Sample ID			MPI-3		MPI-4B	
York Sample ID			00040548-03		00040548-04	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Mercury, Dissolved	SW-846-7470	mg/L	Not detected	0.0002	Not detected	0.0002
Lead, Dissolved	SW846-6010	mg/L	Not detected	0.005	Not detected	0.005
Selenium, Dissolved	SW846-6010	mg/L	Not detected	0.010	Not detected	0.010

Client Sample ID			MPI-6	
York Sample ID			00040548-05	
Matrix			WATER	
Parameter	Method	Units	Results	MDL
Silver, Dissolved	SW846-6010	mg/L	Not detected	0.005
Arsenic, Dissolved	SW846-6010	mg/L	Not detected	0.005
Barium, Dissolved	SW846-6010	mg/L	0.159	0.010
Cadmium, Dissolved	SW846	mg/L	Not detected	0.005
Chromium, Dissolved	SW846-6010	mg/L	Not detected	0.005
Mercury, Dissolved	SW-846-7470	mg/L	Not detected	0.0002
Lead, Dissolved	SW846-6010	mg/L	0.014	0.005
Selenium, Dissolved	SW846-6010	mg/L	Not detected	0.010

Client Sample ID			SS-1 (1-3')		SS-2 (1-2')	
York Sample ID			00040548-06		00040548-07	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Total RCRA Metals	SW846	mg/kG	---	---	---	---
Arsenic, total			49.4	1.00	Not detected	1.00
Barium, total			196	0.50	669	0.50
Cadmium, total			Not detected	0.50	Not detected	0.50
Chromium, total			32.6	0.50	154	0.50
Lead, total			543	0.50	192	0.50
Selenium, total			Not detected	1.00	Not detected	1.00
Silver, total			1.07	0.50	1.57	0.50
Cyanide, total	SM412B	mg/kg	10.7	1.00	1.19	1.00
Mercury	SW846-7471	mg/kG	0.66	0.25	0.96	0.25

Client Sample ID			SS-2 (2.5-3')		SS-3 (1-2')	
York Sample ID			00040548-08		00040548-09	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Total RCRA Metals	SW846	mg/kG	---	---	---	---
Arsenic, total			63.8	1.00	4.91	1.00
Barium, total			76.6	0.50	86.3	0.50
Cadmium, total			Not detected	0.50	Not detected	0.50
Chromium, total			22.8	0.50	17.3	0.50
Lead, total			522	0.50	184	0.50
Selenium, total			Not detected	1.00	Not detected	1.00
Silver, total			Not detected	0.50	Not detected	0.50
Cyanide, total	SM412B	mg/kg	9.27	1.00	8.68	1.00
Mercury	SW846-7471	mg/kG	1.00	0.25	0.81	0.25

YORK

Client Sample ID			SS-4 (1-2')	
York Sample ID			00040548-10	
Matrix			SOIL	
Parameter	**Method**	**Units**	**Results**	**MDL**
Total RCRA Metals	SW846	mg/kG	---	---
Arsenic, total			84.3	1.00
Barium, total			79.0	0.50
Cadmium, total			Not detected	0.50
Chromium, total			20.6	0.50
Lead, total			133	0.50
Selenium, total			Not detected	1.00
Silver, total			Not detected	0.50
Cyanide, total	SM412B	mg/kg	2.22	1.00
Mercury	SW846-7471	mg/kG	0.96	0.25

Units Key:

For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes:

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. If dilution factor is reported at the end of the compound list, the MDL is determined by multiplying the MDL times the listed dilution factor.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.

Approved By: _____ **Date:** 4/28/2000

Robert Q. Bradley
Managing Director

YORK

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Report Date: 5/1/2000
Re: Client Project ID: GY99143.21
York Project No.: 00040549

ONE RESEARCH DRIVE STAMFORD, CT 06906 (203) 325-1371 FAX (203) 357-0166

Report Date: 5/1/2000
Client Project ID: GY99143.21

York Project No.: 00040549

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 04/25/00. The project was identifed as your project "GY99143.21 "

The analysis was conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables

The results of the analysis are summarized in the following table(s)

Analysis Results

Client Sample ID			MPI-1		MPI-2	
York Sample ID			00040549-01		00040549-02	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Cyanide, total	EPA 335.2	mg/L	0.03	0.01	0.06	0.01

Client Sample ID			MPI-3		MPI-4B	
York Sample ID			00040549-03		00040549-04	
Matrix			WATER		WATER	
Parameter	Method	Units	Results	MDL	Results	MDL
Cyanide, total	EPA 335.2	mg/L	0.02	0.01	0.17	0.01

Client Sample ID			MPI-6	
York Sample ID			00040549-05	
Matrix			WATER	
Parameter	Method	Units	Results	MDL
Cyanide, total	EPA 335.2	mg/L	0.04	0.01

YORK

Client Sample ID			SS-2 (2.5-3')	
York Sample ID			00040549-06	
Matrix			SOIL	
Parameter	Method	Units	Results	MDL
Polynuclear Aromatic Hydroc.(BN)	SW846-8270	ug/kG	---	---
Acenaphthene			13000	1700
Anthracene			Not detected	1700
Benzo[a]anthracene			1700000	1700
Benzo[a]pyrene			5600	1700
Benzo[b]fluoranthene			9200	1700
Benzo[g,h,i]perylene			4500	1700
Benzo[k]fluoranthene			12100	1700
Chrysene			1500000	1700
Dibenz[a,h]anthracene			Not detected	1700
Fluoranthene			7700	1700
Fluorene			5300	1700
Indeno[1,2,3-cd]pyrene			4600	1700
Naphthalene			2300	1700
Phenanthrene			51000	1700
Pyrene			17000	1700

Units Key:

For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm , ug/kg = ppb

Notes:

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. If dilution factor is reported at the end of the compound list, the MDL is determined by multiplying the MDL times the listed dilution factor.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.

Approved By: _____ **Date:** 5/1/2000

Robert Q. Bradley
Managing Director

YORK

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Ecosystems Strategies, Inc.
50 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Report Date: 5/4/2000
Re: Client Project ID: GY99143.21
York Project No.: 00040648

CT License No. PH-0723 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 98 EPA I.D. No. CT00106

ONE REBEARCH DRIVE STAMFORD, CT 06906 (203) 325-1371 FAX (203) 357-0166

Report Date: 5/4/2000
Client Project ID: GY99143.21

York Project No.: 00040648

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 04/27/00. The project was identifed as your project "GY99143.21 ".

The analysis was conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

The results of the analysis are summarized in the following table(s).

Analysis Results

Client Sample ID			B-3A(1-3')	
York Sample ID			00040648-01	
Matrix			SOIL	
Parameter	Method	Units	Results	MDL
Total RCRA Metals	SW846	mg/kG	---	---
Arsenic, total			2.32	1.00
Barium, total			371	0.50
Cadmium, total			Not detected	0.50
Chromium, total			21.8	0.50
Lead, total			529	0.50
Selenium, total			3.51	1.00
Silver, total			Not detected	0.50
Mercury	SW846-7471	mg/kG	Not detected	0.25
Cyanide, total	SM412B	mg/kg	1.21	1.00

Units Key:

For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes:

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. If dilution factor is reported at the end of the compound list, the MDL is determined by multiplying the MDL times the listed dilution factor.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.

Approved By: _____ **Date:** 5/4/2000
Robert Q. Bradley
Managing Director

YORK

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Report Date: 5/8/2000
Re: Client Project ID: G499143.21
York Project No.: 00050037

CT License No. PH-0722 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 93 EPA I.D. No. CT00105

ONE RESEARCH DRIVE STAMFORD, CT 06906 (203) 325-1371 FAX (203) 357-0166

Report Date: 5/8/2000
Client Project ID: G499143.21

York Project No.: 00050037 A

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 05/01/00. The project was identifed as your project "G499143.21 ".

The analysis was conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

The results of the analysis are summarized in the following table(s).

Analysis Results

Client Sample ID			B-1A (4-5')		B-1A (18-20')	
York Sample ID			00050037-01		00050037-02	
Matrix			SOIL		SOIL	
Parameter	Method	Units	Results	MDL	Results	MDL
Polynuclear Aromatic Hydroc.(BN)	SW846-8270	ug/kG	---	---	---	---
Acenaphthene			35000	3300	680000	3300
Anthracene			24000	3300	27000	3300
Benzo[a]anthracene			37000	3300	194000	3300
Benzo[a]pyrene			27000	3300	142000	3300
Benzo[b]fluoranthene			12000	3300	66000	3300
Benzo[g,h,i]perylene			15000	3300	22000	3300
Benzo[k]fluoranthene			25000	3300	130000	3300
Chrysene			41000	3300	210000	3300
Dibenz[a,h]anthracene			2100	3300	5700	3300
Fluoranthene			60000	3300	250000	3300
Fluorene			22000	3300	350000	3300
Indeno[1,2,3-cd]pyrene			Not detected	3300	Not detected	3300
Naphthalene			48000	3300	1400000	3300
Phenanthrene			76000	3300	620000	3300
Pyrene			130000	3300	310000	3300

YORK

Client Sample ID			SS-2 (2.5-3')	
York Sample ID			00050037-03	
Matrix			SOIL	
Parameter	Method	Units	Results	MDL
Oil Identification			See Note*	

*Note: Weathered gasoline and Weathered Fuel Oil #4 or #6.

Units Key:

For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes:

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. If dilution factor is reported at the end of the compound list, the MDL is determined by multiplying the MDL times the listed dilution factor.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.

Approved By: Robert Q. Bradley
Managing Director

Date: 5/8/2000

YORK

YORK
ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Report Date: 5/11/2000
Re: Client Project ID: GY99143.21
York Project No.: 00050261

CT License No. PH-0723 New York License No. 10854 Mass. License No. M-CT106 Rhode Island License No. 98 EPA I.D. No. CT00106

ONE RESEARCH DRIVE STAMFORD, CT 06906 (203) 325-1371 FAX (203) 357-0166

Report Date: 5/11/2000
Client Project ID: GY99143.21

York Project No.: 00050261

Ecosystems Strategies, Inc.
60 Worrall Avenue
Poughkeepsie, NY 12603
Attention: Jerald A. Kaplan

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on 05/09/00. The project was identifed as your project "GY99143.21 ".

The analysis was conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables .

The results of the analysis are summarized in the following table(s).

Analysis Results

Client Sample ID			SS-2 (2.5-3')	
York Sample ID			00050261-01	
Matrix			SOIL	
Parameter	**Method**	**Units**	**Results**	**MDL**
Acid Extractables	SW846-8270	ug/kg	---	---
2,4,5-Trichlorophenol			Not detected	3300
2,4,6-Trichlorophenol			Not detected	3300
2,4-Dichlorophenol			Not detected	3300
2,4-Dimethylphenol			Not detected	3300
2,4-Dinitrophenol			Not detected	16000
2-Chlorophenol			Not detected	3300
2-Nitrophenol			Not detected	3300
4,6-Dinitro-2-methylphenol			Not detected	16000
4-Chloro-3-methylphenol			Not detected	3300
4-Nitrophenol			Not detected	16000
Pentachlorophenol			Not detected	16000
Phenol			Not detected	3300

YORK

Report Date: 5/11/2000
Client Project ID: GY99143.21

York Project No.: 00050261

Units Key:

For Waters/Liquids: mg/L = ppm ; ug/L = ppb For Soils/Solids: mg/kg = ppm ; ug/kg = ppb

Notes:

1. The MDL (Minimum Detectable Limit) reported is adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. If dilution factor is reported at the end of the compound list, the MDL is determined by multiplying the MDL times the listed dilution factor.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.

Approved By: _____ **Date:** 5/11/2000

Robert Q. Bradley
Managing Director

YORK

YORK
ANALYTICAL LABORATORIES, INC.
ONE RESEARCH DRIVE
STAMFORD, CT 06906
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

Company Name	Report To:	Invoice To:	Project ID/No.	Samples Collected By (Signature) / Name (Printed)
[illegible]	[illegible]	[illegible]	5199113.21	J Kaplan / [illegible]

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	OTHER	ANALYSES REQUESTED	Container Description(s)
	[illegible]	1/26/06		X			Hold	[illegible]
	[illegible]						Hold	[illegible]
	[illegible]						Hold	[illegible]
	[illegible]						Hold	[illegible]
	[illegible]						Hold	[illegible]
	[illegible]						Hold	[illegible]
	B-1A (4-5')						PAH (8270)	[illegible]
	[illegible]						Hold	[illegible]
	[illegible]						Hold	[illegible]
	[illegible]						Hold	[illegible]
	B-1A (15-20')						PAH (8270) Product ID	[illegible]

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Sample Relinquished by	Date/Time	Sample Received by	Date/Time
Bottles Received in Field by	Date/Time	Sample Relinquished by	Date/Time	Sample Received in LAB by	Date/Time

Comments/Special Instructions

Turn-Around Time
___Standard ___RUSH(define)

YORK
ANALYTICAL LABORATORIES, INC.
ONE RESEARCH DRIVE
STAMFORD, CT 06906
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

Company Name	Report To:	Invoice To:	Project ID/No.	Samples Collected By (Signature) / Name (Printed)
[illegible]	[illegible] / [illegible]	[illegible]	G/99143.21	[illegible] / [illegible]

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	OTHER	ANALYSES REQUESTED	Container Description(s)
	MP1-1	4/20/00	X				RCRA 8 metals + cyanide	2-1 l
	MP1-2		X				RCRA 8 metals + cyanide	2-1 l
	MP1-3		X				RCRA 8 metals + cyanide	2-1 l
	MP1-4B		X				RCRA 8 metals + cyanide	2-1 l
	MP1-6		X				RCRA 8 metals + cyanide	2-1 l
	SS-1 (1-3')			X			RCRA 8 metals	1-4oz
	SS-2 (1-2')			X			RCRA 8 metals	1-4oz
	SS-2 (2.5-3')			X			RCRA 8 metals, 8270 PAHs (only)	1-4oz
	SS 3 (1-2')			X			RCRA 8 metals	1-4oz
	SS-4 (1-2')			X			RCRA 8 metals	1-4oz

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Sample Relinquished by	Date/Time	Sample Received by	Date/Time
		[illegible signature]	4/20/00 [illegible]	[illegible signature]	[illegible]

Bottles Received in Field by	Date/Time	Sample Relinquished by	Date/Time	Sample Received in LAB by	Date/Time

Comments/Special Instructions
Water samples will require filtration at lab!

Turn-Around Time
___ Standard X RUSH(define) [illegible]

YORK
ANALYTICAL LABORATORIES, INC.
ONE RESEARCH DRIVE
STAMFORD, CT 06906
(203) 325-1371 FAX (203) 357-0166

Field Chain-of-Custody Record

Company Name	Report To:	Invoice To:	Project ID/No.	Samples Collected By (Signature)
Ecosystems	Jay Kaplan	Pam	G/991/13.21	J Kaplan (Name Printed)

Sample No.	Location/ID	Date Sampled	Sample Matrix: Water	Soil	Air	OTHER	ANALYSES REQUESTED	Container Description(s)
	B-3A (1-3')	4/26/00		X			RCRA & Metals + cyanide	1-4oz
	B-4A (5-6')	4/26/00		X			VOA	1-8oz
	B-5A (5-7')	4/26/00		X			Hold	1-8oz
	B-6A (5-7')	4/26/00		X			Hold	1-4oz

Chain-of-Custody Record

Bottles Relinquished from Lab by	Date/Time	Sample Relinquished by	4/27/00 1515 Date/Time	R. Van Dorsten Sample Received by	4-27-00 1515 Date/Time
Bottles Received in Field by	Date/Time	Sample Relinquished by	Date/Time	Sample Received in LAB by	Date/Time

Comments/Special Instructions

Turn-Around Time

X Standard ____ RUSH(define)_____

APPENDIX C

Tables

Table 1: Summary of RCRA Metals Plus Cyanide in Soils - April 26, 2,000 - 104 Ashburton Avenue, City of Yonkers, Westchester County, New York (All data provided in mg/kg. Concentrations shown in **bold** exceed NYSDEC established action levels.)

Metals	Background Levels [1]	Action Levels [1]	Sample Identification					
			SS-1 (1-3')	SS-2 (1-2')	SS-2 (2.5-3')	SS-3 (1-2')	SS-4 (1-2')	B-3A (1-3')
Arsenic	3.0 - 12.0	7.5[1]	**49.4**	ND	**63.8**	4.91	**84.3**	2.32
Barium	15 - 600	300[1]	196	**669**	76.6	86.3	79.0	**371**
Cadmium	0.1 - 1.0	10[1]	ND	ND	ND	ND	ND	ND
Chromium	1.5 - 40	50[1]	32.6	**154**	22.8	17.3	20.6	21.8
Lead	200 - 500	400[1]	**543**	192	**522**	184	133	**529**
Mercury	0.0001 - 0.2	1[1]	0.66	0.96	1.00	0.81	0.96	ND
Selenium	0.1 - 3.9	2[1]	ND	ND	ND	ND	ND	**3.51**
Silver	NE	NE	1.07	1.57	ND	ND	ND	ND
Cyanide	NE	NE	10.7	1.19	9.27	8.68	2.22	1.21

Notes: 1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 (January 24, 1994) as modified by relevant NYSDEC Records of Decision (RODs)
ND = Not detected above specified detection limit
NE = Not Established
NA = Not Analyzed

F:\DATA\WPDATA\PROJECTS\1999\GY99143\GY99143-30\TOTAL METALS IN SOIL TABLE.WPD

Table 2: Summary of PAHs in Soils - April 26, 2,000 - 104 Ashburton Avenue, City of Yonkers, Westchester County, New York (All data provided in μg/kg. Concentrations shown in **bold** exceed NYSDEC established action levels.)

			Sample Identification		
	Compound (Method 8270C)[3]	Action Level[1,2]	B-1A (4-5')	B-1A (18-20')	SS-2 (2.5-3')
PAHs	Acenaphthene	400[2]	35,000	680,000	13,000
	Anthracene	1,000[2]	24,000	27,000	ND
	Benzo (a) Anthracene	220[2]	37,000	194,000	1,700,000
	Benzo (a) Pyrene	61[2]	27,000	142,000	5,600
	Benzo (b) Fluoranthene	220[2]	12,000	66,000	9,200
	Benzo (k) Fluoranthene	220[2]	25,000	130,000	12,100
	Benzo (g,h,i) Perylene	50,000[1]	15,000	22,000	4,500
	Chrysene	400[1]	41,000	210,000	1,500,000
	Dibenzo (a,h) Anthracene	14[2]	2,100	5,700	ND
	Fluoranthene	1,000[2]	60,000	250,000	7,700
	Fluorene	1,000[2]	22,000	350,000	5,300
	Indeno (1,2,3-cd) Pyrene	3,200[1]	ND	ND	4,600
	Naphthalene	200[2]	48,000	1,400,000	2,300
	Phenanthrene	1,000[2]	76,000	620,000	61,000
	Pyrene	1,000[2]	130,000	310,000	17,000

Notes:: 1. Source: NYSDEC Technical and Administrative Guidance Memorandum #4046 (TAGM) (January 24, 1994)
2. Source: Spill Technology and Remediation Series (STARS) Memo #1, July 1993
3. Any compounds not listed were not detected in any of the samples analyzed.
ND = Not Detected above specified detection limit.

F:\DATA\WPDATA\PROJECTS\1999\GY991 43\GY991 43-30\PAH TABLE FOR SOILS.WPD

Table 3: Summary of Metals Plus Cyanide in Groundwater - April 26, 2,000 - 104 Ashburton Avenue, City of Yonkers , Westchester County, New York All data provided in μg/l. (Concentrations shown in **bold** exceed NYSDEC established action levels.)

Metals	Action Levels[1]	SAMPLE IDENTIFICATION				
		MPI-1	MPI-2	MPI-3	MPI-4B	MPI-6
Arsenic Dissolved	25	ND	ND	ND	ND	ND
Barium Dissolved	1,000	34	62	63	144	159
Cadmium Dissolved	10	ND	ND	ND	ND	ND
Chromium Dissolved	50	ND	ND	ND	ND	ND
Lead Dissolved	50	ND	ND	ND	ND	14
Mercury Dissolved	2	ND	ND	ND	ND	ND
Selenium Dissolved	10	ND	ND	ND	ND	ND
Silver Dissolved	50	ND	ND	ND	ND	ND
Cyanide, Total	100	30	60	20	17	40

Notes: 1. Source: 6NYCRR Parts 700-705, effective September 1, 1991.
ND = Not detected above specified detection limit

F:\DATA\WPDATA\PROJECTS\1999\GY991143\GY991143-30\DISSOLVED METALS IN WATER TABLE.WPD

Table 4: Groundwater Elevation at High Tide

Location	Depth to Groundwater (in ft. from well casing)	Monitoring Well Elevation (in ft. above mean sea level)	Groundwater Elevation (in ft. above mean sea level)
MPI-1	4.86'	3.90'	-0.96'
MPI-2	4.14'	4.80'	0.66'
MPI-3	4.66'	6.10'	1.44'
MPI-4	3.74'	5.60'	1.86'
MPI-6	2.74'	3.30'	0.56'
Depth to water measurements collected between 10:00 - 10:15 a m.			

Table 5: Groundwater Elevation at Low Tide

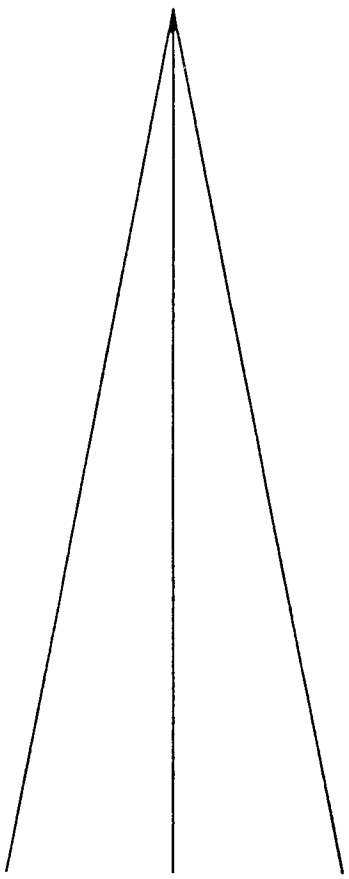
Location	Depth to Groundwater (in ft from well casing)	Monitoring Well Elevation (in ft above mean sea level)	Groundwater Elevation (in ft above mean sea level)
MPI-1	4.79'	3.90'	-0.89'
MPI-2	4.07'	4.80'	0.73'
MPI-3	4.68'	6.10'	1.42'
MPI-4	3.69'	5.60'	1.91'
MPI-6	2.75'	3.30'	0.55'
Depth to water measurements collected between 4:00 - 4:15 p.m.			

APPENDIX D

Boring Logs

SOILTESTING, INC.

TO Ecosystems Strategies DATE April 28, 2000
ADDRESS 60 Worrall Avenue - Poughkeepsie, New York 12603
SITE LOCATION 143 Ashburton Avenue - Yonkers, New York
REPORT SENT TO Jay Kaplan
SAMPLES SENT TO Picked up @ site by client



140 Oxford Road
Oxford, Connecticut 06478
203-888-4531

Branch Office:
White Plains, New York 10607
914-946-4850

JOB NO. 5847

SOILTESTING, INC.
140 OXFORD RD.
OXFORD, CT 06478
CT (203) 888-4531
NY (914) 946-4850

CLIENT: Ecosystems Strategies

PROJECT NO. E39-5847-00

PROJECT NAME
143 Ashburton Avenue

LOCATION
Yonkers, New York

FOREMAN - DRILLER
RD/dj

INSPECTOR

GROUND WATER OBSERVATIONS
AT 3' FT AFTER 0 HOURS
AT __ FT AFTER __ HOURS

	CASING	SAMPLER	CORE BAR
TYPE	HSA	SS	
SIZE I.D.	4 1/4"	1 3/8"	
HAMMER WT.		140#	BIT
HAMMER FALL		30"	

SHEET 1 OF 1
HOLE NO. HB-1A

BORING LOCATIONS
as directed

OFFSET

DATE START 4-25-00

DATE FINISH 4-25-00

SURFACE ELEV.

GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												3"	ASPHALT
		1	ss	24"	12"	3'0"	18	13			wet		Brn F-M SAND,lit silt,tr F-gravel
							9	7			compact		
		2	ss	24"	10"	5'0"	8	5			wet		SAME
5							23	6			compact		
		3	ss	24"	10"	7'0"	3	4			wet		Brn F-C SAND,sm F-C gravel,lit silt
							3	4			loose		
		4	ss	24"	10"	9'0"	1	2			wet		Blk F-SAND & SILT,tr clay
							1	2			loose		
10		5	ss	24"	12"	11'0"		1			wet		Brn F-SAND & SILT,lit F-M gravel,tr clay
							18	2			compact	11'0"	E.O.B.
15													
20													
25													
30													
35													E.O.B. 11'0"
40													

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT.

HOLE NO HB-1A

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST
WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS
SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER
PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE
M = MEDIUM
F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. SS-1
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: / 140# HAMMER FALL: / 30"	OFFSET DATE START 4-25-00 DATE FINISH 4-25-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS		BIT

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3"	ASPHALT
		1	ss	24"	12"	3'0"	9 / 18		dry		Brn F-C SAND,sm F-C gravel,tr silt
							12 / 9		dense	3'0"	E.O.B.
5											
10											
15											
20											
25											
30											
35											E.O.B. 3'0"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO SS-1

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. SS-2
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: / 140# (BIT) HAMMER FALL: / 30"	OFFSET DATE START 4-25-00 DATE FINISH 4-25-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3"	ASPHALT
		1	ss	24"	18"	3'0"	25 / 10 7 / 5		dry / compact	3'0"	Brn F-C SAND,sm F-C gravel,tr silt E.O.B.
5											
10											
15											
20											
25											
30											
35											E.O.B. 3'0"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO SS-2

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. SS-3
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: 140# HAMMER FALL: 30"	OFFSET DATE START 4-25-00 DATE FINISH 4-25-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS		BIT

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3"	ASPHALT
		1	ss	24"	12"	3'0"	8 / 11		dry		Brn F-M SAND,sm silt,lit F-C gravel
							37 / 20		dense	3'0"	E.O.B.
5											
10											
15											
20											
25											
30											
35											E.O.B. 3'0"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO SS-3

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. SS-4
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: / 140# HAMMER FALL: / 30"	OFFSET DATE START 4-25-00 DATE FINISH 4-25-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT none FT AFTER 0 HOURS AT FT AFTER HOURS		BIT

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3"	ASPHALT
		1	ss	24"	12"	3'0"	16 / 18		dry		Brn F-M SAND,sm F-M gravel,tr silt,tr
							18 / 19		dense	3'0"	brick frags E.O.B.
5											
10											
15											
20											
25											
30											
35											E.O.B. 3'0"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO SS-4

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. B-3A
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR Jay Kaplan	CASING / SAMPLER / CORE BAR TYPE: HSA / SS / ____ SIZE I.D.: 4 1/4" / 1 3/8" / ____ HAMMER WT.: ____ / 140# / BIT HAMMER FALL: ____ / 30" / ____	OFFSET DATE START 4-26-00 DATE FINISH 4-26-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 3' FT AFTER 0 HOURS AT __FT AFTER __HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												3"	ASPHALT
		1	ss	24"	10"	3'0"	8	7			wet		Brn F-M SAND,sm F-C gravel,tr silt
							26	24			dense		
		2	ss	24"	12"	5'0"	9	10			wet		SAME
5							45	30			v-dense		
		3	ss	15"	12"	6'3"	20	40			wet		Brn F-M SAND & F-C GRAVEL,lit silt,
							50/3				v-dense	6'3"	brick frags E.O.B.
10													
15													
20													
25													
30													
35													E.O.B. 6'3"
40													

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-3A

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS C = COARSE

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. B-4A
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR Jay Kaplan	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: / 140# HAMMER FALL: / 30"	OFFSET DATE START 4-26-00 DATE FINISH 4-26-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 3' FT AFTER 0 HOURS AT FT AFTER HOURS		BIT

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												3"	ASPHALT
		1	ss	20"	10"	2'8"	8	17			dry dense wet compact wet v-dense		BRICK FRAGS
							17	50/2					
		2	ss	24"	10"	5'0"	8	14					Brn F-M SAND,sm silt,lit F-C gravel
5							14	19					
		3	ss	13"	10"	6'1"	63	14					Brn F-M SAND,sm silt,lit F-C gravel
							50/1					6'1"	E.O.B.
10													
15													
20													
25													
30													
35													E.O.B. 6'1"
40													

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-4A

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

C = COARSE M = MEDIUM F = FINE

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies PROJECT NO. E39-5847-00 PROJECT NAME 143 Ashburton Avenue LOCATION Yonkers, New York	SHEET 1 OF 1 HOLE NO. B-5A BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj INSPECTOR Jay Kaplan GROUND WATER OBSERVATIONS AT 3' FT AFTER 0 HOURS AT FT AFTER HOURS	CASING / SAMPLER / CORE BAR TYPE HSA / SS SIZE I.D. 4 1/4" / 1 3/8" HAMMER WT. / 140# HAMMER FALL / 30" BIT	OFFSET DATE START 4-26-00 DATE FINISH 4-26-00 SURFACE ELEV. GROUND WATER ELEV.

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3"	ASPHALT
		1	ss	24"	10"	3'0"	8 / 12		wet		Brn F-C SAND,sm F-C gravel,tr silt
							14 / 17		compact		
		2	ss	24"	8"	5'0"	8 / 10		wet		SAME
5							12 / 26		compact		
		3	ss	24"	10"	7'0"	8 / 17		wet		Brn F-M SAND,sm F-C gravel,tr silt
							17 / 24		dense	7'0"	E.O.B.
10											
15											
20											
25											
30											
35											E.O.B. 7'0"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-5A

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. B-6A
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
OREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR Jay Kaplan	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: / 140# HAMMER FALL: / 30"	OFFSET DATE START 4-26-00 DATE FINISH 4-26-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 3' FT AFTER 0 HOURS AT FT AFTER HOURS		BIT

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6	6 - 12	12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
												3"	ASPHALT
		1	ss	24"	10"	3'0"	5	18			wet		Brn F-M SAND,sm F-C gravel,tr silt,brick
							12	10			dense		frags
		2	ss	24"	6"	5'0"	6	16			wet		SAME
5							5	8			compact		
		3	ss	24"	8"	7'0"	5	4			wet		Brn F-C SAND,sm F-C gravel,lit silt
							4	5			loose	7'0"	E.O.B.
10													
15													
20													
25													
30													
35													E.O.B. 7'0"
+0													

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO B-6A

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

M = MEDIUM

F = FINE

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. EMW-1
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR Jay Kaplan	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 4 1/4" / 1 3/8" HAMMER WT.: / 140# HAMMER FALL: / 30"	OFFSET DATE START 4-25-00 DATE FINISH 4-25-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 3' FT AFTER 0 HOURS AT FT AFTER HOURS		BIT

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	Type	PEN	REC	DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0 - 6 / 6 - 12 / 12 - 18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										3"	ASPHALT
		1	ss	24"	12"	3'0"	5 / 10		wet		Brn F-M SAND,sm F-M gravel,lit silt
							9 / 10		compact		
		2	ss	24"	12"	5'0"	6 / 7		wet		SAME; brick frags
5							7 / 6		compact		
		3	ss	24"	14"	7'0"	8 / 20		wet		Brn F-C SAND,sm F-M gravel,wood frags
							30 / 50		dense		
		4	ss	24"	10"	10'0"	1 / 2		wet		Brn F-M SAND,sm F-M gravel,tr silt
10							2 / 1		loose		
		5	ss	24"	8"	12'0"	1 / 2		wet		SAME
							3 / 5		loose		
		6	ss	24"	8"	14'0"	4 / 6		wet		SAME
							5 / 4		compact		
15		7	ss	24"	10"	16'0"	3 / 2		wet		Brn F-C sand,sm F-M gravel,tr silt
							1 / 2		loose		
		8	ss	24"	18"	18'0"	2 / 2		wet		Brn ORGANICS (peat)
							3 / 5		medium		
		9	ss	24"	14"	20'0"	5 / 2		wet		SAME
20							2 / 3		soft		
		10	ss	24"	12"	22'0"	1 / 2		wet		Brn ORGANICS (peat) & SILT
							3 / 5		medium	22'0"	E.O.B.
25											
30											
35											E.O.B. 22'0"
40											

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. **HOLE NO EMW-1**

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

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SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER M = MEDIUM

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50% F = FINE

Phone
(203) - 888-4531

Telefax
(203) - 888-6247

WHITE PLAINS, N.Y.
(914) - 946-4850

MONITOR WELL INSTALLATION DETAIL

SOILTESTING, INC.

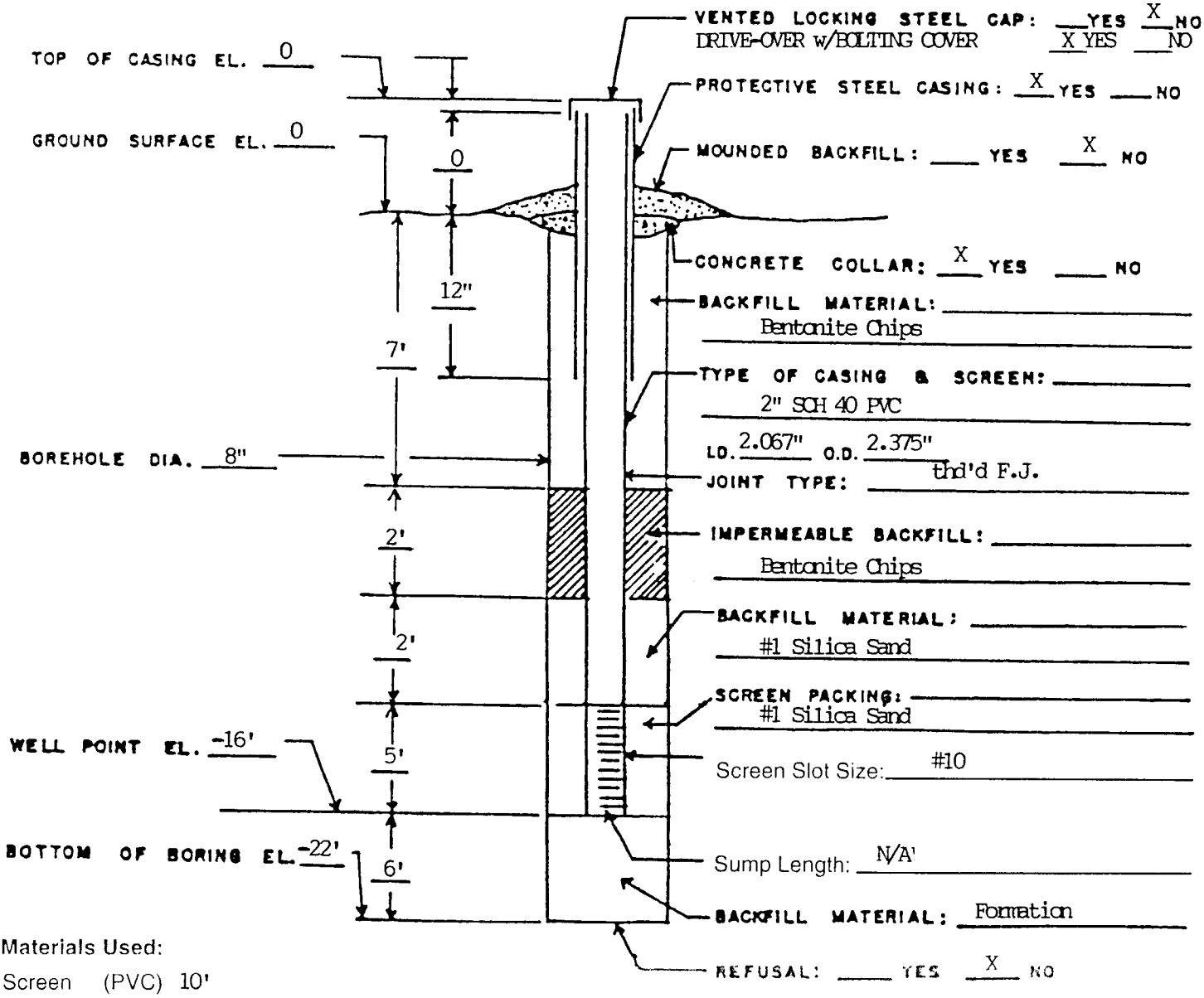
140 OXFORD ROAD - OXFORD, CONN. 06478-1943

GEOTECHNICAL / ENVIRONMENTAL SUBSURFACE INVESTIGATIONS - Test Borings - Core Drilling
Monitoring Wells - Recovery Wells - Direct Push/Probe Sampling

MONITOR WELL # MW-1

Client: Ecosystems Strategies

Job #: E39-5847-00



Materials Used:

Screen	(PVC) 10'	
Riser	(PVC) 15'	
Plug	(PVC) (1)	Bentonite Pellets
Slipcap	(PVC)	Bentonite Chips 2 bags
Silica Sand	300#	Concrete Mix 1 bag
Powdered Bentonite		Portland

Locking Exp Plug (1)
Lock
D/O (1) "
S/U -

SOILTESTING, INC. 140 OXFORD RD. OXFORD, CT 06478 CT (203) 888-4531 NY (914) 946-4850	CLIENT: Ecosystems Strategies	SHEET 1 OF 1 HOLE NO. EMW-2R
	PROJECT NO. E39-5847-00	
	PROJECT NAME 143 Ashburton Avenue	BORING LOCATIONS as directed
FOREMAN - DRILLER RD/dj	LOCATION Yonkers, New York	
INSPECTOR Jay Kaplan	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 6 5/8" / 1 3/8" HAMMER WT.: / 140# (BIT) HAMMER FALL: / 30"	OFFSET DATE START 4-26-00 DATE FINISH 4-26-00 SURFACE ELEV. GROUND WATER ELEV.
GROUND WATER OBSERVATIONS AT 3' FT AFTER 0 HOURS AT __ FT AFTER __ HOURS		

DEPTH	CASING BLOWS PER FOOT	SAMPLE NO	SAMPLE Type	SAMPLE PEN	SAMPLE REC	SAMPLE DEPTH @ BOT	BLOWS PER 6 IN ON SAMPLER (FORCE ON TUBE) 0-6 6-12 12-18	CORING TIME PER FT (MIN)	DENSITY OR CONSIST / MOIST	STRATA CHANGE DEPTH / ELEV	FIELD IDENTIFICATION OF SOIL REMARKS INCL. COLOR, LOSS OF WASH WATER, SEAMS IN ROCK, ETC.
										6"	ASPHALT
5									wet		Brn F-M SAND,sm F-C gravel,lit silt
											BOULDER
10									wet	10'0"	Brn F-M SAND,sm F-C gravel,lit silt E.O.B.
15											
20											
25											
30											
35											E.O.B. 10'0"

GROUND SURFACE TO _____FT. USED _____CASING THEN _____ CASING TO _____FT. HOLE NO EMW-2R

A = AUGER UP = UNDISTURBED PISTON T = THINWALL V = VANE TEST

WOR = WEIGHT OF RODS WOH = WEIGHT OF HAMMER & RODS

SS = SPLIT TUBE SAMPLER H.S.A. = HOLLOW STEM AUGER

PORPORTIONS USED: TRACE = 0 - 10% LITTLE = 10 - 20% SOME = 20 - 35% AND =35 - 50%

C = COARSE

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F = FINE