# Appendix 11

Port of Rochester Environmental Management Plan



Engineering Architecture Environmental

# Port of Rochester Environmental Management Plan

Location:

Port of Rochester Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality 30 Church Street Room 300B Rochester, New York 14614

LaBella Project No. 205182

July 2005

# Port of Rochester Environmental Management Plan

Location: Port of Rochester Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality 30 Church Street Room 300B Rochester, New York 14614

LaBella Project No. 205182

July 2005

# **Table of Contents**

1.0	INTRO	DDUCTION	.1
2.0	OBJE	CTIVE	.1
	2.1	Applicability of Environmental Management Plan	. 1
3.0	BACK	GROUND AND SUPPORTING ANALYTICAL DATA	. 2
	3.1	Supporting Analytical Data	3
4.0	ENVIF	RONMENTAL MANAGEMENT PLAN	.4
	4.1 4.2 4.3 4.4 4.5 4.6	Identification of Solid Waste Impacted Media Identification of Petroleum Impacted Media On-Site Management of Solid Waste Impacted Media & Petroleum Impacted Media Off-Site Disposal of Solid Waste and Petroleum Impacted Media Waste Stream Tracking Unknown Environmental Issues	5 6 7 7
5.0	IMPLI	EMENTATION OF EVIRONMENTAL MANAGEMENT PLAN	. 8
6.0	DECO	NTAMINATION OF EQUIPMENT	. 8
7.0	HEAL	TH AND SAFETY PLAN	.9
8.0	COMN	IUNITY AIR MONITORING PLAN	.9

# **APPENDICES:**

Figure 1	Site Location Map
Figure 2	Approximate Boundary of MCEMC Waste Disposal Site
Figure 3	Port of Rochester Environmental Management Plan Study Area
Figure 4	Site Characterization of Subsurface Environmental Issues
Figure 5	Cross-Section of Slag Fill Material
Figure 6	Site Characterization Map with Historical Buildings
Appendix 1	Miscellaneous Letters
Appendix 2	Analytical Summary Tables from Phase II Environmental Site Assessment
Appendix 3	Boring, Test Pit, and Monitoring Well Logs
Appendix 4	Photographs of Slag Fill
Appendix 5	Example of Material Tracking Spreadsheet
Appendix 6	Example of Health & Safety Plan
Appendix 7	Community Air Monitoring Plan

## **1.0 INTRODUCTION**

The Port of Rochester has experienced a broad range of commercial, industrial, marine, and recreational development and redevelopment. Over the years these properties have left subsurface environmental impacts at the Site. Recent subsurface investigations were completed at the Port of Rochester in conjunction with the Port of Rochester Harbor Improvement and Harbor Ferry Terminal Project (2000-2004). These subsurface investigations identified:

- Various but limited areas of petroleum impacted soil and groundwater, and
- Widespread iron manufacturing ash/cinder and slag waste, and widespread miscellaneous fill materials such as bricks, concrete, and railroad ties.

During development and construction, the presence of these subsurface impacts and fill materials will require special handling procedures that are detailed in this Environmental Management Plan (EMP).

The Port of Rochester encompasses an area bounded on the north by Lake Ontario Beach State Park, on the east by the Genesee River, on the west by Lake Avenue, and on the south by land owned by CSX Transportation. In addition the Monroe County Boat Launch (likely to be purchased by the City of Rochester) will be included in this EMP. The City of Rochester is the owner of most of the parcels within the Port of Rochester. The location of the properties where this EMP applies is depicted on Figure 1.

The majority of the Port of Rochester Site is listed as a suspect fill site by the Monroe County Environmental Management Council (MCEMC), as it reportedly contains ash, cinder, and slag fill. Figure 2 depicts the approximate boundary of this MCEMC waste disposal site. The designation of the Port of Rochester Site as a waste disposal site by the MCEMC may impact future development as any new re-development plan may need to be reviewed and approved of by a state, county, and/or local governing body. Figure 3 depicts the Port of Rochester Site shall follow the procedures outlined in this EMP. No solid waste generated from the Port of Rochester Site may be physically removed from the Port of Rochester Site without the expressed written permission from the City of Rochester Division of Environmental Quality (DEQ) Project Manager. This procedure is presented in detail in Section 4.5.

# 2.0 **OBJECTIVE**

This EMP is intended to provide guidance regarding the characterization and management of subsurface impacted soil, groundwater, and man-made industrial derived fill materials generated during development activities at the Port of Rochester Site.

### 2.1 Applicability of Environmental Management Plan

This EMP applies to any owner, Planner, Developer, Contractor, utility Contractor, and municipal agency that disturb the subsurface at the Port of Rochester Site.

# **3.0 BACKGROUND AND SUPPORTING ANALYTICAL DATA**

This EMP utilizes data gathered from the previous subsurface investigative reports and observations made during construction of the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project. The reports utilized for reference are as follows:

- Phase I Environmental Site Assessment Charlotte Port of Rochester, New York by Galson dated April 1999.
- Port of Rochester Harbor Improvement and Harbor Ferry Terminal Phase II Environmental Site Assessment, Preliminary Site Characterization Report by LaBella Associates, P.C. dated May 31, 2001.
- Phase III Environmental Site Assessment: Remediation Closure Report NYSDEC Spill Number 990601 Area #1 by LaBella Associates, P.C. dated October 2002.
- Geotechnical Site Characterization, Port of Rochester Harbor Improvement and Harbor Ferry Terminal by Haley & Aldrich of New York dated January 22, 2001.

In addition to the above reports prepared for the Port of Rochester, several miscellaneous environmental documents were generated by LaBella Associates and the City of Rochester during construction of the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project in regard to New York State Department of Environmental Conservation (NYSDEC) Spill #990601. The documents are:

- Phase II Environmental Site Assessment: Underground Storage Tank Closure Report Soil Sampling and Analysis: Port of Rochester Orphan Tank Discovered September 2003 by LeCesse Constriction.
- Underground Storage Tank Removal, Excavation Closure Sampling and Groundwater Sampling Report North Warehouse, Port of Rochester; Rochester New York: Remediation Closure Report dated January 2003;
- Memo January 15, 2003, Vortex Excavation Port of Rochester Parking Lot Improvements;
- Memo February 17, 2004, Groundwater Sample Results Future Underground Storage Tank Excavation, Port of Rochester Fast Ferry Terminal, Rochester, New York;
- Memo September 11, 2002, Questionable wastewater discharge relating to groundwater encountered and pumped at the South 24" sewer outfall trench; Beach Avenue and North Parking Lot Improvements Project Port of Rochester; and
- Drawing showing approximate areas where these issues were addressed.
- Letter from the City of Rochester of NYSDEC Active Spill #990601 to the NYSDEC dated May 6, 2004.
- Letter from the NYSDEC of Spill #990601 to the City of Rochester dated June 14, 2004.

The documents were submitted to the NYSDEC in a letter from the City of Rochester Division of Environmental Quality ("City DEQ") to the NYSDEC dated May 6, 2004, requesting No Further Remedial Action regarding the above listed issues and that the NYSDEC close NYSDEC Spill #990601. The NYSDEC responded to the City DEQ in a letter dated June 14, 2004 and indicated the NYSDEC does not require further remedial work regarding Spill #9970601 at this time. A copy of this NYSDEC No Further Action letter is included in Appendix 1. It should noted that this letter applies only to previously identified petroleum releases at the Port of Rochester; and it does not apply to slag or any man-made fill materials.

These reports and miscellaneous environmental documents may be reviewed at the City of Rochester's Department of Environmental Services located at City Hall, Room 300B. These reports detail locations of impacted soil and groundwater and areas where man-made fill materials have been identified.

### 3.1 Supporting Analytical Data

Representative samples of slag material from the Port of Rochester have been analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs), eight (8) Resource Conservation and Recovery Act (RCRA) Metals, cyanide, and Polychlorinated Biphenyls (PCBs). Results of analysis indicate that the slag material is not representative of hazardous waste. The only compounds detected in these slag samples were arsenic, cadmium, and barium. Arsenic was the only compound that appeared to be consistently elevated above eastern USA background levels as published in the NYSDEC Technical and Administrative Guidance Manual (TAGM) 4046. Appendix 2 contains tables summarizing analytical results of the slag and man-made fill materials from samples referenced in the Port of Rochester Harbor Improvement and Harbor Ferry Terminal - Phase II Environmental Site Assessment, Preliminary Site Characterization Report by LaBella Associates, P.C. dated May 31, 2001.

In approximately 20 percent of the soil samples analyzed the levels of arsenic were elevated above the NYSDEC TAGM #4046 Eastern USA background levels and above the New York State Department of Health (NYSDOH) recommended level of 20 part per million (ppm). In addition to the elevated concentrations of arsenic there is the potential presence for elevated levels of additional heavy metals and SVOCs.

Table 1 below details sample locations and the associated arsenic concentrations that were considered representative of slag fill in areas in the area of the Port of Rochester Harbor Improvement and Harbor Ferry Terminal Project (2000-2004).

Sample Location	Arsenic Concentration (mg/Kg)	Exceed USA Eastern Background Concentration (2-12 mg/Kg)
Bourne TP #1	20.6	Yes
LBA TP #1	3.1	No
LBA TP #6 (4')	17.8	Yes
LBA TP #6 (white slag)	<6.23	No
LBA TP #6 (black slag)	17.5	Yes
LBA TP #8	52	Yes
LBA TP #9	<4.90	No
LBA TP #10	51.1	Yes
LBA TP #15	7.12	No
LBA TP #18	<4.40	No
HA #114	3.91	No
HA #116	2.81	No

Table 1
Arsenic Concentration of Slag Fill Material at the Port of Rochester

Petroleum hydrocarbon related compounds from ash/cinders have been detected at the Port of Rochester Site. Analyses of the ash/cinders have typically detected low-levels of petroleum related SVOCs. In addition, petroleum hydrocarbon related compounds were detected in the soil and groundwater (not from ash/cinders) at intermittent locations in the vicinity of petroleum storage tanks, potential historical spills

3

# **IVBELIV**

from former railroad activities (e.g. locomotives and historical operations) at the Port of Rochester. Samples have typically detected low levels of VOCs and SVOCs.

In general, test results from soil samples taken as part of the Phase II Environmental Site Assessment; Preliminary Site Characterization Report prepared for the Port of Rochester Harbor Improvement and Harbor Ferry Terminal may be considered sufficient for waste characterization of slag, coal, cinders, railroad ballast, and ash (fill) that is present at the Port of Rochester Site.

Test results from subsurface Petroleum Impacted Media, not including slag, coal, cinders, railroad ballast, and ash, are included as Part of the Phase II Environmental Site Assessment. Tables summarizing the analytical results from the Phase II Environmental Site Assessment are included in Appendix 2. Existing test results are likely not sufficient for waste characterization of subsurface Petroleum Impacted Media.

The cumulative findings of these reports indicate a large portion of the Port of Rochester Site contains slag, ash and foundry waste. The layer of slag and foundry waste is found in an approximately 625,000 square foot area (Figure 4) and averages approximately 4-feet thick (Figures 4 and 5). Estimates of the total volume of slag, ash, and foundry waste indicate that approximately 93,000 cubic yards of this material is present at the Port of Rochester Site. The depth of current ground surface elevation to the slag layers varies widely over the Port of Rochester Site. The depth from ground surface to the slag layers in the outlying portions of the Port of Rochester Site ranges from 3 to 5-feet below ground surface, whereas depth from ground surface to slag layers in the center portion range from as little as 1-foot below the ground surface (Figure 5).

NYSDEC regulations regarding management of solid waste are contained in NYCCR Part 360. A provision has been included in Part 360 that allows for non-hazardous solid waste to be properly managed and replaced within the confines of an inactive solid waste site with NYSDEC approval. Proper management requires that care be taken in planning, monitoring, and testing of excavated waste and fill material to confirm that it is non-hazardous, and to allow proper replacement and re-use on-site. A letter from LaBella Associates, P.C. to the NYSDEC dated January 21, 2002 documented the NYSDEC's acceptance of the re-use of the man-made fill materials at the Port of Rochester Site. The NYSDEC approval of re-use of man-made fill materials was specifically for the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project. A copy of this letter in included in Appendix 1.

## 4.0 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

This EMP has been designed for development and construction activities at the Port of Rochester Site. This EMP pertains to earthwork activities that will disturb the subsurface at the Port of Rochester.

### 4.1 Identification of Solid Waste Impacted Media

Solid waste layers are present throughout the Port of Rochester as depicted on Figure 4 and cross sections of the slag fill material is depicted on Figure 5. The solid waste is generally present at depths immediately below the "topsoil" layer or pavement/sub-base layer, which varies in depth from 6 inches to 24 inches below ground surface. The logs of the borings, test pits, and monitoring wells depicted on Figure 4 are included in Appendix 3.

Fill materials present at the Port of Rochester Site include but are not limited to the following:

- Slag
- Railroad ties
- Railroad ballast
- Construction and Demolition debris from industrial uses
- Ash
- Cinders
- Railroad lines
- Coal

The presence of these fill man-made fill materials is generally from historical activities at the Port of Rochester Site. Figure 6 depicts historical buildings and structures formerly located at the Port of Rochester.

These fill materials are considered by the NYSDEC as solid waste that cannot be treated as Construction and Demolition (C&D) solid waste, due to the nature of its origin as a solid waste derived from an industrial source. The NYSDEC has indicated during prior re-development activities at the Port of Rochester that the NYSDEC would not approve of the disposal of this material at C&D debris landfills. The NYSDEC indicated during the previous Port of Rochester re-development activities that excavating the fill materials containing slag, coal, ash, cinders, railroad ties, railroad ballast, railroad lines, and C&D debris from industrial uses and placing these solid wastes into similar filled areas within the same site would be acceptable to the NYSDEC and in accordance with 6 NYCRR Part 360-1.7(b)(9). Alternatively, these materials can be disposed off site in a New York State (NYS) Part 360 permitted landfill.

Solid Waste Impacted Media can typically be visually identified by the presence of slag waste ranging in size from approximately 1 inch to 10 inches in diameter. A photographs taken of the slag waste during the Port of Rochester Harbor Improvement and Harbor Ferry Terminal project is included in Appendix 4.

The media containing slag may also exhibit a sulfur odor. The off-gas from the disturbance of this slag waste has been sampled and analyzed. The analytical results indicate that the off-gasses do not represent a worker health and safety concern from Hydrogen Sulfide or VOCs for construction workers at the Site. Refer to letter report issued by LaBella Associates, P.C. to the City of Rochester dated January 24, 2004 and test results included in Appendix 1.

The presence of coal, cinders, railroad ballast and ash can be visually identified during excavation. If questions arise during identification of the solid waste the City DEQ and the Environmental Project Monitor (EPM) shall make the final determination, for the classification on how the spoils generated during the construction activities at the Site will be managed.

### 4.2 Identification of Petroleum Impacted Media

Petroleum Impacted Subsurface Media are known to be located at the Port of Rochester at locations depicted on Figure 4. There is a potential for additional areas of Petroleum Impacted Subsurface Media to be present at the Port of Rochester.

5

**LABELIA** 

Petroleum Impacted Subsurface Media can be identified by the media exhibiting a petroleum-like odor, gray to black staining, and elevated readings of total VOCs on a Photo-Ionization Detector (PID). Groundwater impacted by petroleum may exhibit a petroleum odor or sheen. If questions arise during identification of Petroleum Impacted Media, the City DEQ and the EPM will make the final determination, for the classification on how the spoils generated during the construction activities at the Site will be managed.

The volatilization of contaminants present in Petroleum Impacted Media may represent a worker health and safety concern for construction workers at the Site. Refer to Section 8.0 of this EMP.

### 4.3 On-Site Management of Solid Waste Impacted Media and Petroleum Impacted Media

Solid Waste Impacted Media that is excavated should not be used as backfill in utility trenches. Solid Waste Impacted Media may be relocated on-site or legally disposed of at a NYS Part 360 Landfill. The re-location area of Solid Waste Impacted Media will be approved by the City DEQ and the EPM.

The staging of Solid Waste Impacted Media should be performed in a manner where it is segregated from non-Solid Waste Impacted Media. Staging locations of Solid Waste Impacted Media will be approved by the City DEQ and the EPM.

Prior to excavating in areas where solid waste is anticipated, the Contractor should remove the top layer of non–Solid Waste Impacted Media (i.e. topsoil, asphalt, etc.) as practicable and keep the material segregated from any Solid Waste Impacted Media. If the material is to be relocated for re-use on site, the Solid Waste Impacted Media should be covered with an impervious material (e.g. asphalt or concrete) or with a minimum of 24-inches of non-impacted soil or fill at residential locations or 12-inches of non-impacted soil or fill at commercial locations.

Subsurface Solid Waste Impacted Media is not allowed to leave the Port of Rochester work area without expressed written consent from the City DEQ and the EPM.

Solid (non-aqueous) Petroleum Impacted Media which cannot be separated shall be segregated into separate stockpiles and staged on and covered with one layer of 6-mil thick polyethylene sheeting at the end of each work day. The Contractor shall implement reasonable care to secure sheeting and maintain such stockpiles' integrity.

If necessary, liquid or aqueous Petroleum Impacted Media (i.e. groundwater) shall be pumped into a holding tank, approved of by the EPM.

Petroleum Impacted Media is not allowed to leave the Port of Rochester work area without expressed written consent from the City DEQ and the EPM.

# IVBELIV

Table 2 below details requirements and re-use of Solid Waste and Petroleum Impacted Media at the Port of Rochester Site.

	On-Site Re-Use Requirements						
Material Classification	Material Description	Disposal / Re-use	On-Site Cover Requirements				
Class 1	<ul> <li>Man-made fill materials including but not limited to slag, ash, cinders, railroad ballast and ties, etc. (Railroad ties cannot be re-used on-site in most situations)</li> <li>Petroleum hydrocarbon related compounds that are less than the NYSDEC TAGM 4046 RSCO.</li> </ul>	<ul> <li>Can be re-used at the Port of Rochester Site with NYSDEC approval.</li> <li>If cannot be re-used at the Port of Rochester Site, must be legally disposed of at a NYS Part 360 landfill</li> </ul>	Must be covered with 12 (commercial) or 24 (residential) inches with non-impacted soil or fill, or with asphalt or concrete paving.				
Class 2	• Petroleum hydrocarbon related compounds that are above the NYSDEC TAGM 4046 RSCO.	• Cannot be re-used at the Port of Rochester Site without treatment. Must be legally disposed of at a permitted NYS Part 360 landfill.	Cannot be re-used on- Site. Must be staged on and covered with 6-mil polyethylene sheeting pending disposal at a NYS Part 360 landfill.				

Table 2On-Site Re-Use Requirements

NOTE: NYSDEC TAGM RSCO 4046 denotes New York State Department of Environmental Conservation Technical and Administrative Guidance Manual 4046 Recommended Soil Cleanup Objective

### 4.4 Off-Site Disposal of Solid Waste and Petroleum Impacted Media

The City DEQ, as property owner, shall approve of all proposed Treatment, Storage and Disposal (TSD) facilities and waste transporters prior to use. Removal of any site materials shall be approved in writing by the City DEQ, including submission of completed Waste Profiles and Waste Manifests for signature by the City DEQ.

Copies of all waste disposal manifests, and landfill receipts shall be submitted to the City DEQ and the EPM by the Contractor within two (2) calendar days upon removal from the project location.

Solid Waste Impacted Media that cannot be re-used on-site and solid (non-aqueous) Petroleum Impacted Media that will not be treated on-site shall be transported off-site by a NYS Part 364 permitted vehicles to a NYS Part 360 Permitted Landfill approved by the City DEQ. The EPM shall perform all characterization testing.

Liquid or non-aqueous Petroleum Impacted Media shall be legally disposed of at a location approved of by the City DEQ. The EPM shall perform all characterization testing.

The Contractor shall not dispose of Solid Waste or Petroleum Impacted Media, environmental impacted media, C&D debris, or any on-site derived subsurface material without expressed written permission from the City DEQ Project Manager and the EPM.

### 4.5 Waste Stream Tracking

The EPM shall track the off-site disposal of each waste stream on an appropriate spread sheet tracking log to allow for accurate material quantification. An example of a Material Tracking spread sheet is included in Appendix 5.

7

# **LABELIA**

### 4.6 Unknown Environmental Issues

This EMP includes procedures and protocols to manage known environmental subsurface impacts at the Port of Rochester. If unknown subsurface environmental impacts are encountered, the City DEQ and EPM will determine procedures and protocols to manage any additional environmental impacts.

## 5.0 IMPLEMENTATION OF EMP

During earthwork phases of construction activities at the Port of Rochester, it is recommended that an EPM be assigned to implement the EMP on a part time or full time basis. The responsibilities of the EPM with regard to the EMP are as follows:

- Working with the Developers and Construction Manager, and the City of Rochester Department of Environmental Services or City DEQ to pre-determine off-site disposal locations.
- Working with construction manager and City DEQ to determine re-location areas of Solid Waste Impacted Media.
- Working with Contractors to identify Solid Waste Impacted Media and Petroleum Impacted Solid Waste.
- Work with the City DEQ to characterize and approve off-site disposal of Solid Waste and Petroleum Impacted Media.
- Work with the Contractors to monitor excavations for evidence of environmental impairment.
- Direct the construction manager as to proper staging, covering, and containment of Petroleum Impacted Media.
- Sampling, analysis, and any additional waste stream profiling as required by a receiving NYS Part 360 landfill, or the NYSDEC.
- Implementation of the Health and Safety Plan (HASP) for the EPM and City DEQ personnel at the site. Contractors and other personnel working at the site are responsible for their own HASP (see Section 7.0).
- Implementation of the Community Air Monitoring Plan (CAMP) for the site (see Section 8.0).

# 6.0 DECONTAMINATION OF EQUIPMENT

All equipment used at the Site that comes in contact with Petroleum Impacted Media will require decontamination using clean water to wash off soil and water residue from construction activities. The Contractor shall construct a temporary decontamination pad that will be used to decontaminate the earthwork related equipment.

The decontamination pad shall be constructed of two layers of 6-mil reinforced polyethylene sheeting (or equivalent), with a sump, for the purposes of collecting wash water. Wash water shall be stored in 55-gallon drums, storage tanks or incorporated into tanks for treatment and proper disposal as determined by the EPM. Accumulated sediments shall be legally disposed of in accordance with all applicable regulations at a location approved by the City DEQ and the EPM.

The Contractor shall be responsible for all costs relating to legally disposing of the decontamination pad materials at a facility approved by the City DEQ and the EPM. All permits and waste disposal manifests shall be submitted to the City DEQ and the EPM for review and signature prior to shipment. All permits, waste disposal manifest, and receipts associated with decontamination pad materials disposal shall be submitted to the City DEQ and the EPM.

The Contractor shall provide potable water and high-pressure sprayers for decontamination activities.

Personal decontamination procedures shall follow the procedures set forth in the HASP and the Contractor shall supply a suitable container for disposal of personal protective equipment, such as a steel drum. Disposal of PPE is the responsibility of the Contractor.

# 7.0 HEALTH AND SAFETY PLAN (HASP)

This EMP contains a Site Specific HASP for the Port of Rochester developed by LaBella Associates, P.C. This HASP is designated for the EPM and City DEQ personnel only. A copy of this HASP is included in Appendix 6.

The LaBella Associates, P.C. HASP is included as an example, and contractors disturbing the subsurface at the Port of Rochester will need to develop and rely on their own HASP to manage health and safety issues associated with potential exposure to site chemicals of concern and any other potential issues.

# 8.0 COMMUNITY AIR MONITORING PLAN (CAMP)

This EMP contains a CAMP for earthwork portions of the Site development. This CAMP should be implemented when the subsurface media (i.e. Solid Waste and Petroleum Impacted Media) at the Port of Rochester Site has the potential to be disturbed. A copy of this CAMP is included in Appendix 7.

The EPM will be responsible to implement the CAMP and will direct the Contractor disturbing the subsurface at the Port of Rochester when abatement measures are required to mitigate particulate and VOC emissions. The Contractor shall implement these measures as directed by the EPM. The Contractor will be required to have a sufficient amount of water trucks, polyethylene sheeting, and other mitigative supplies staged and readily available at the site.

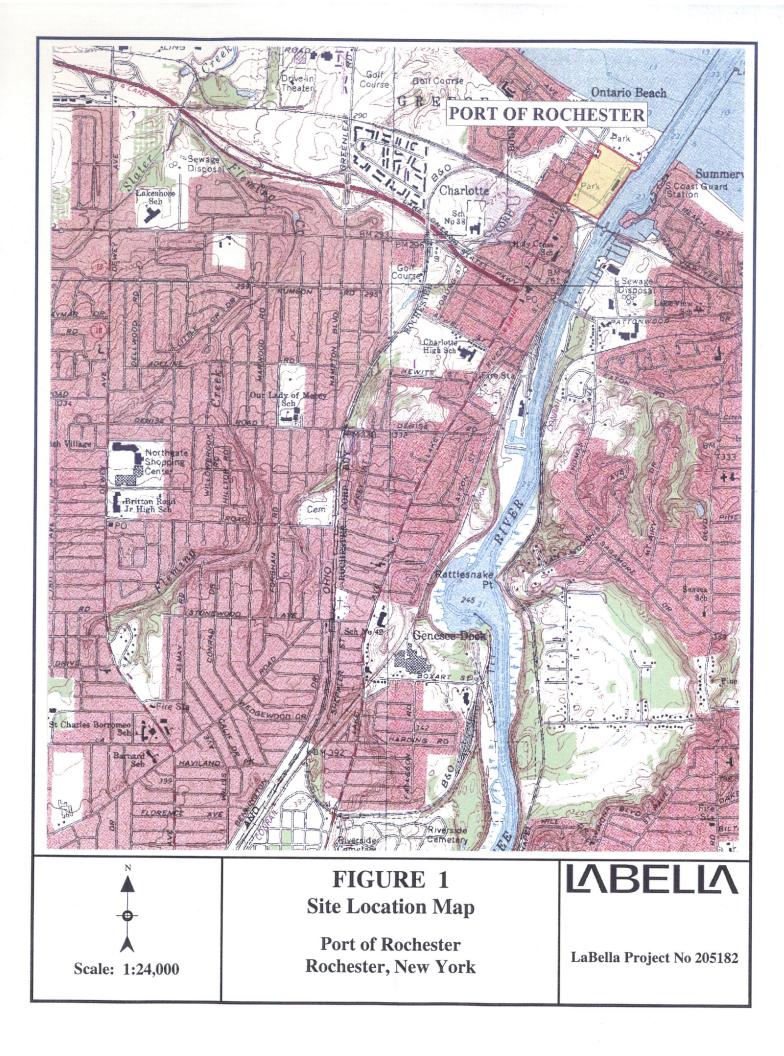
N:\ROCHESTER DEQ\205182\CLERICAL\WORD\RPT\R5G26MP1.DOC

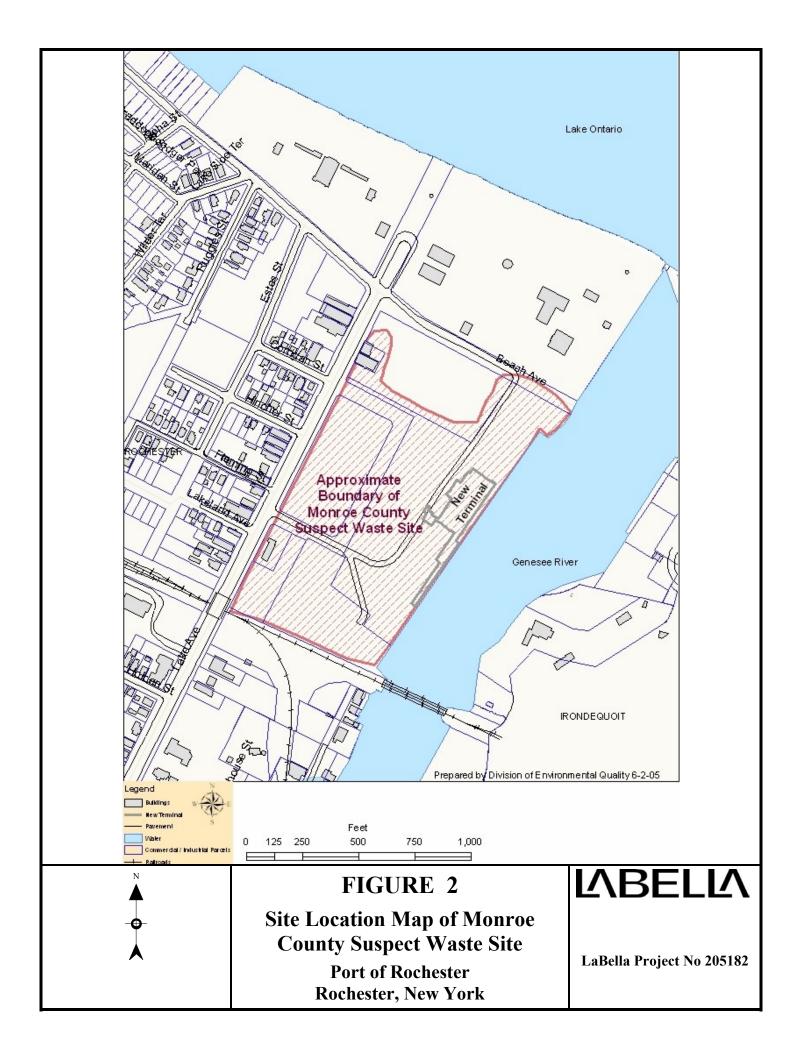
9

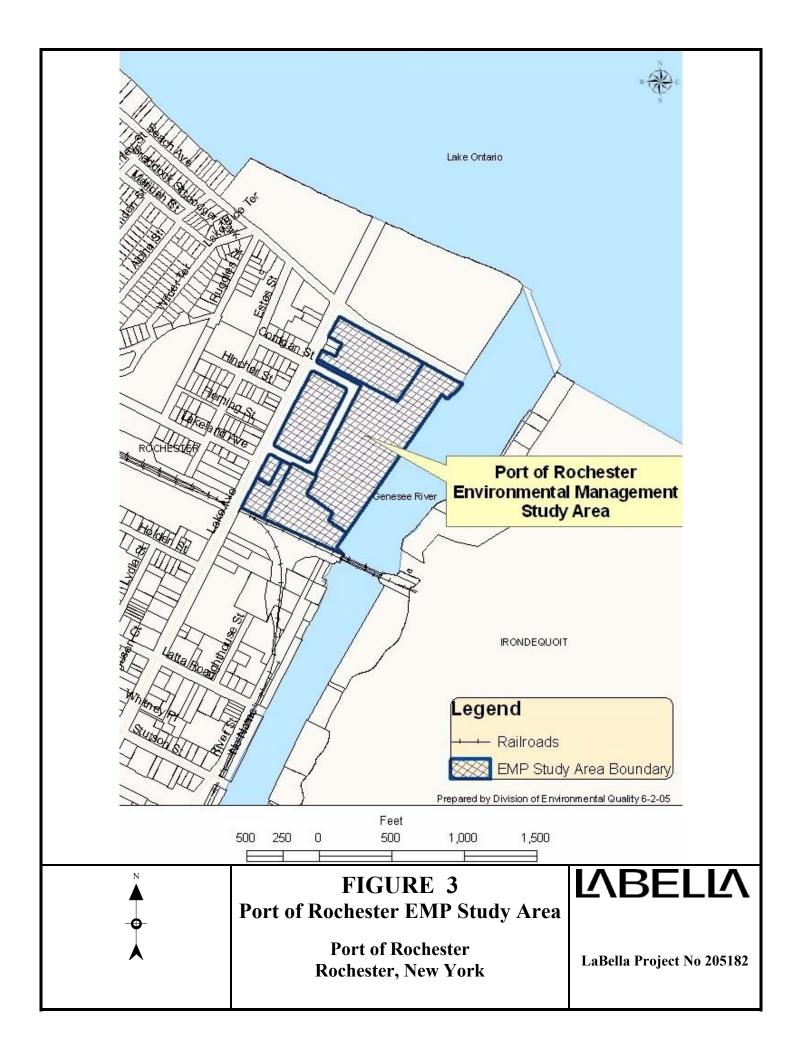
# **LABELIA**

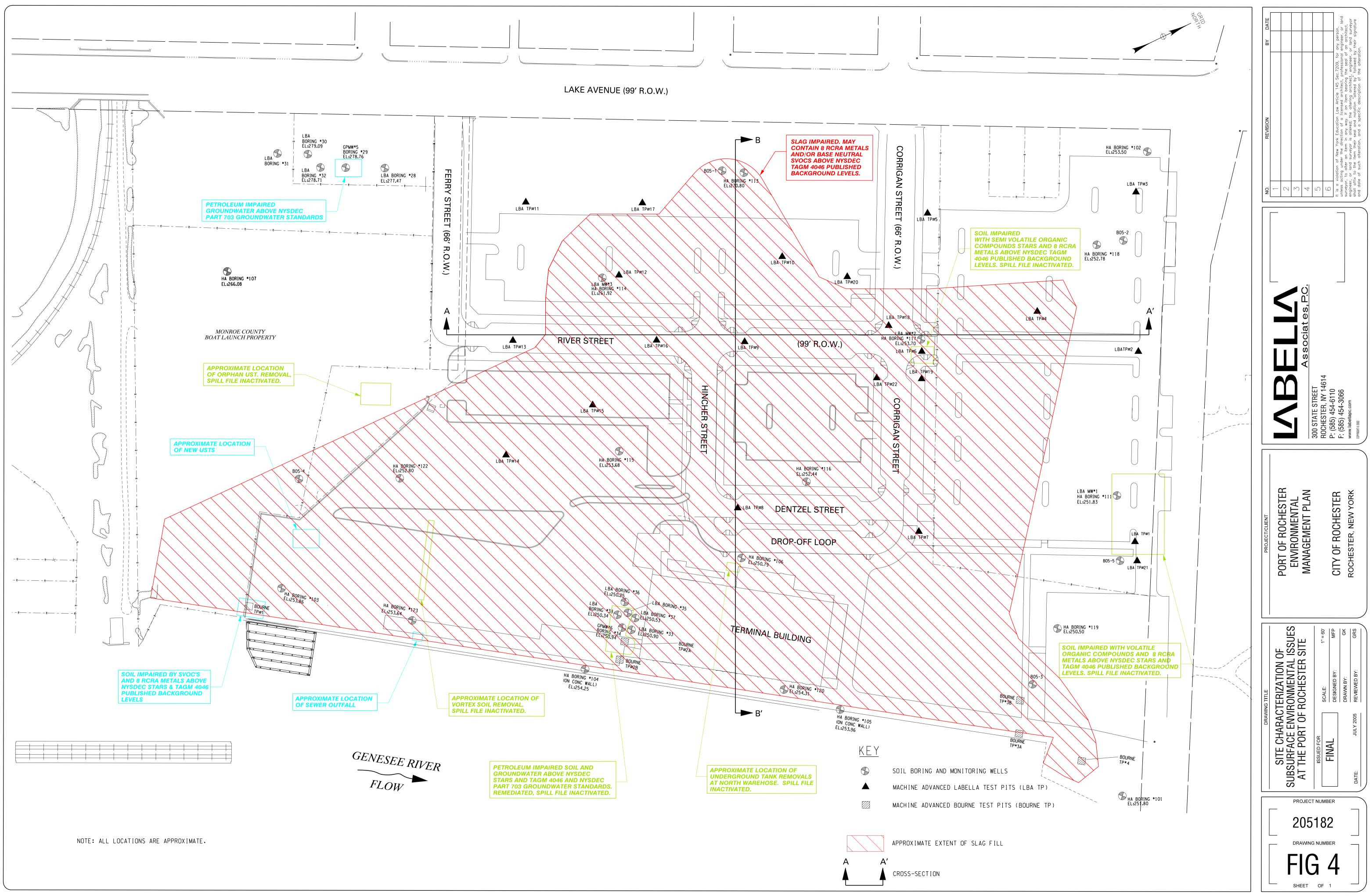


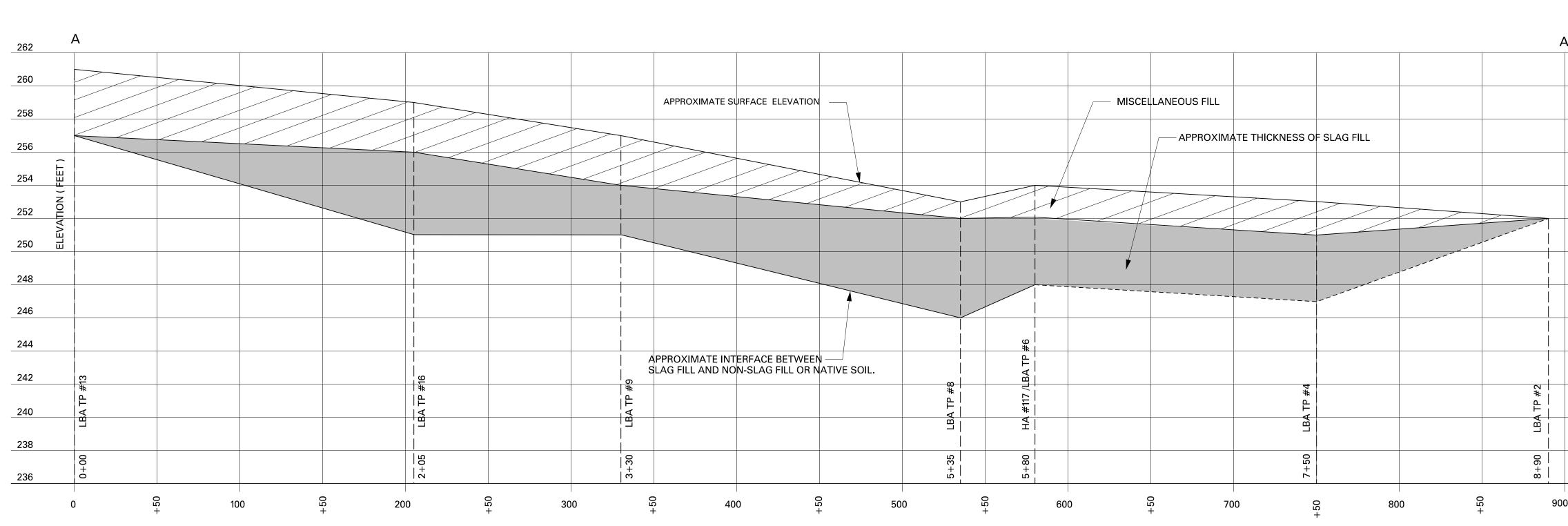
# Figures

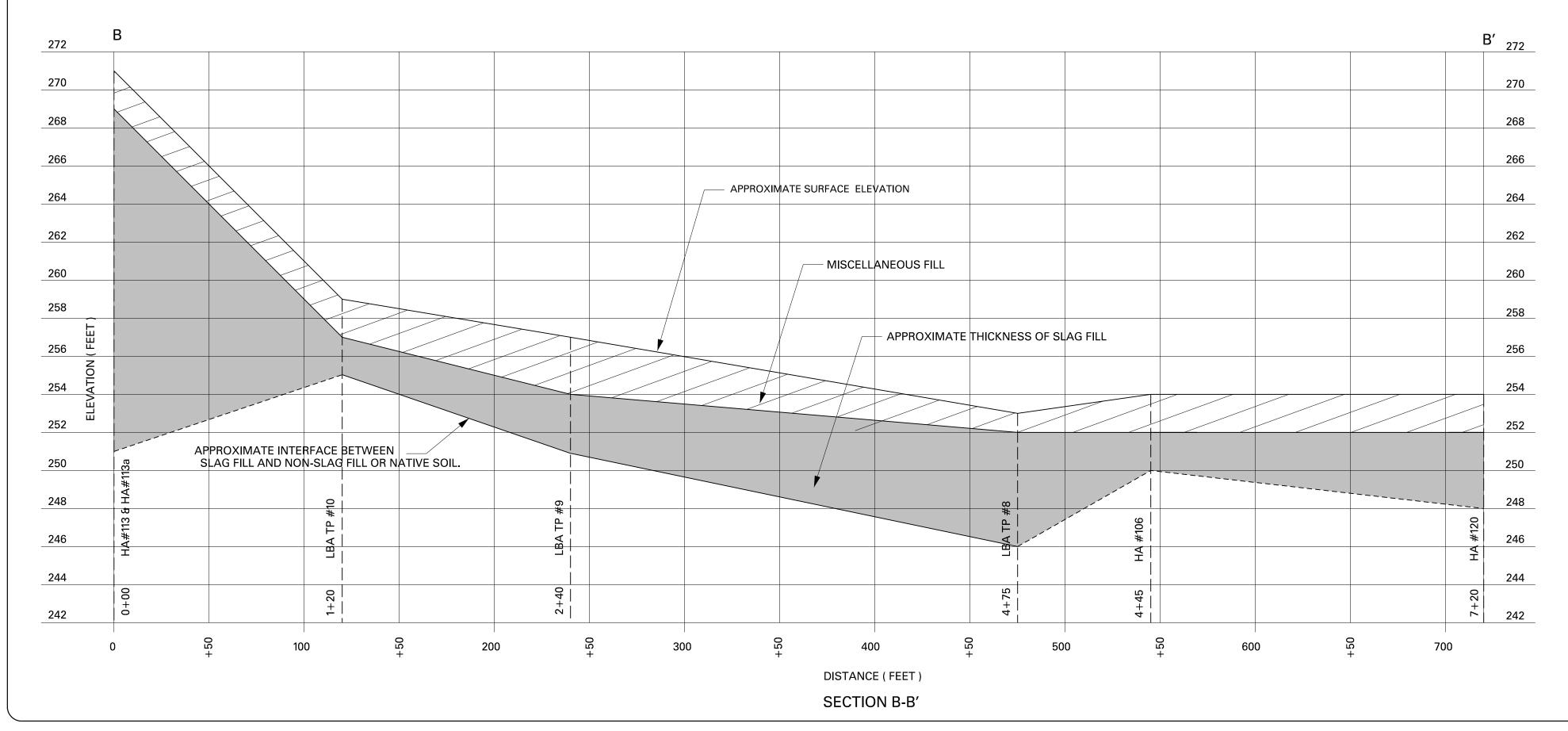












9:05:55 AM n:\Rochester DEQ\205182\ustation\FIGURE 5 071

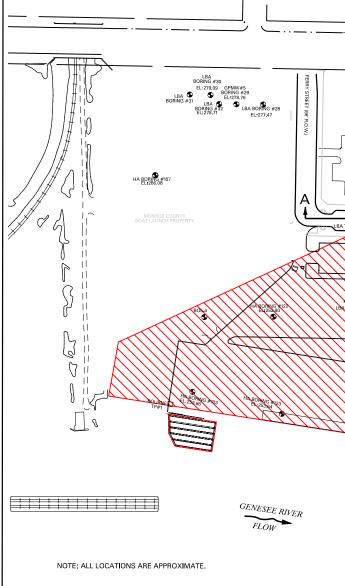
7/25/2005

DISTANCE (FEET)

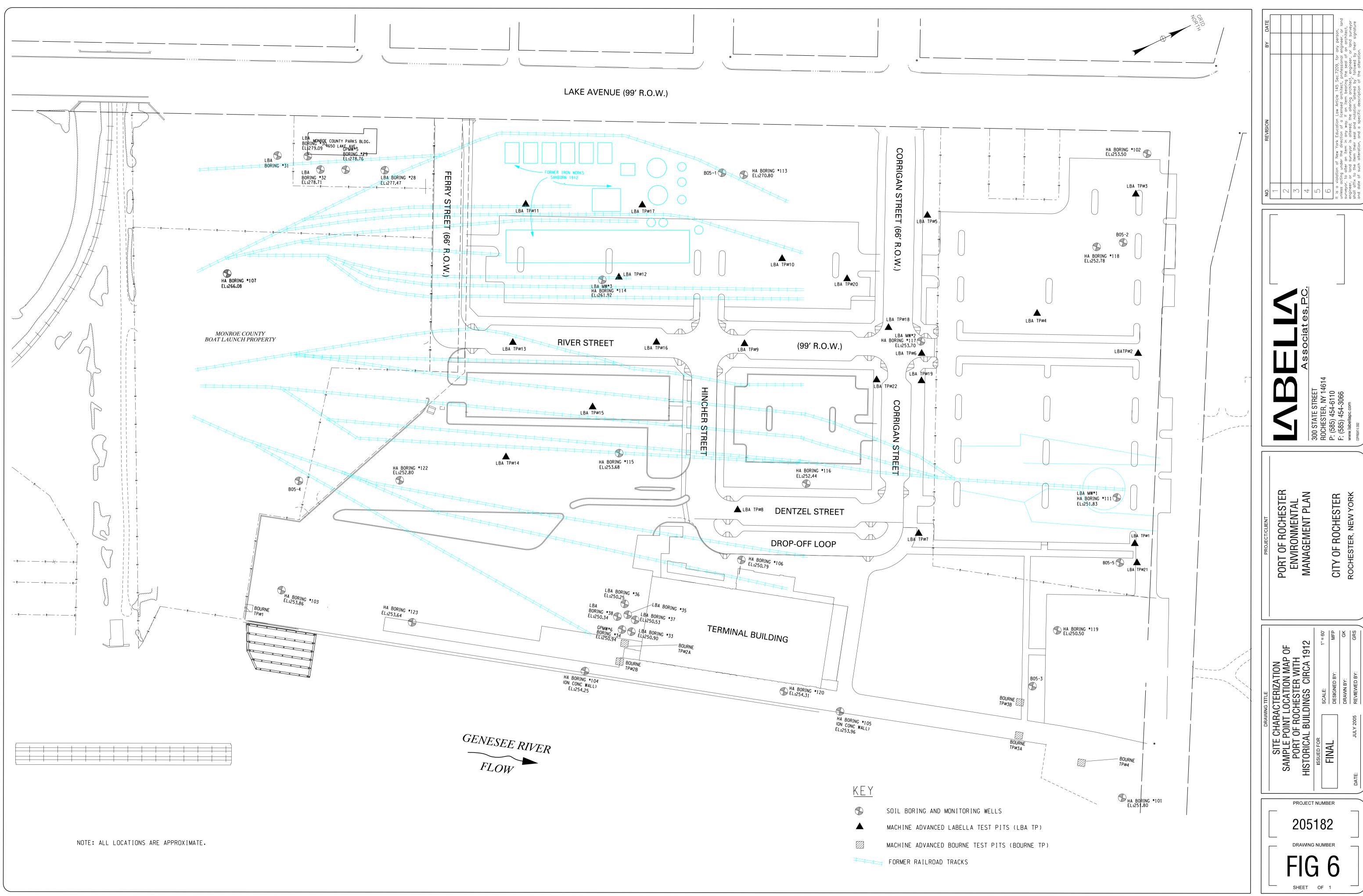
SECTION A-A'

# NOTES:

- 1. ALL ELEVAT
- 2. THICKNESS REFERENCE AND HARBC ASSESSMEN
- 3. THICKNESS APPROXIMA THICKNESS
- 4. THE APPROX CONSTRUCT FILL MATERI
- 5. ELEVATIONS
- 6. DRAWINGS ( SUBSURFAC
- 7. DASHED LIN END OF THE CANNOT BE I



A' 262	BY DATE		Article 145 Sec.7209, for any person, ed architect, professional engineer, or land item bearing the seal of an architect, arring architect, engineer, or land surveyor n "altered by" followed by their signature description of the alteration.
260			cation Law Article 145 S of a licensed architect, way. If an item bearing red, the altering architec and notation altered by a specific description of
258	REVISION		
256	REV		v York e direct syor is their s ation,
254			olation of New ting under the to alter an iter or land survey t to the item th of such alterd
252	NO	- 0 M 4	5 6 8 11 is a violation of unless acting under surveyor, to alter a surveyor, or land s shall affix to the it and date of such a
250			
248			
246			
244			
242			
240			
238			
236		Asso	
00			4614
			STREE R, NY 14 14-6110 4-3066 com
			300 STATE STREET ROCHESTER, NY 14614 P: (585) 454-6110 F: (585) 454-3066 www.labellapc.com
ATIONS AND DISTANCES ARE APPROXIMATE. S OF SLAG WAS DETERMINED FROM INFORMATION CED IN THE PORT OF ROCHESTER HARBOR IMPROVEMENT			BO B
BOR FERRY TERMINAL PHASE II ENVIRONMENTAL SITE ENT BY LABELLA ASSOCIATES, P.C. DATED MAY 31, 2001.			
S AND LOCATION OF SLAG FILL SHALL BE CONSIDERED NATE, ESPECIALLY BETWEEN TEST BORINGS WHERE S OF SLAG WAS INTERPOLATED.		ER VN	rr ×
OXIMATE THICKNESS OF SLAG FILL DOES NOT INCLUDE CTION AND DEMOLITION DEBRIS OR OTHER "NON-SLAG" RIALS.	LIENT	PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN	CITY OF ROCHESTER ROCHESTER, NEW YORK
NS ARE REFERENCED TO THE CITY OF ROCHESTER DATUM. S OF CROSS-SECTIONS ARE NOT INTENDED TO REPRESENT ACE CONDITIONS BENEATH SLAG FILL.	PROJECT/CLIENT	- OF RO VIRONN AGEME	OF RO( ESTER, I
INE INDICATES THAT SLAG WAS STILL PRESENT AT THE HE BORING, AND CONSEQUENTLY THE DEPTH OF SLAG BE DETERMINED WITH CERTAINTY.		Port En Man	<b>CITY</b> ROCHI
			)
LAKE AVENUE (99' R.O.W.)			1" = 40' MFP GK/RCN GRS
		IAL	
Linder Parker Li	щ	CROSS-SECTION OF SLAG FILL MATERIAI	SCALE: DESIGNED BY: DRAWN BY: REVIEWED BY:
	DRAWING TITLE	S-SEC	
	DRA	ROSS .AG F	JULY 2005
		C OF SI	FINAL
Line only and the second secon			
Aberry Constant of the second		PROJEC	
B' HA BORNE GRIDE ION CONCE VALUE EL 2525 ER VIEW KEY FY3A BOUNNE KEY TP#3A BOUNNE KEY TP#3A		205	`
Soil BORING AND MONITORING WELLS			
APPROXIMATE EXTENT OF SLAG FILL A A' GROSS-SECTION		FIG	<b>3</b> 5
		- SHEET	
	L		



B	SOIL BORING AND MONITORING WELLS
	MACHINE ADVANCED LABELLA TEST PITS
	MACHINE ADVANCED BOURNE TEST PITS
+-++++	FORMER RAILROAD TRACKS



# **Appendix 1**

**Miscellaneous Letters** 

## New York State Department of Environmental Conservation

Division of Environmental Remediation

Bureau of Technical Support

6274 East Avon-Lima Road, Avon, New York 14414 Phone: (585) 226-2466 • FAX: (585) 226-8139

Website: www.dec.state.ny.us



1		
Rec LaBella A	ssociates,	A. Crotty

JUN 16 2004

June 14, 2004

Client:
Proj.#:

Mr. Joseph J. Biondolillo Sr. Environmental Specialist City of Rochester Division of Environment Quality 30 Church Street Room 300B Rochester, New York 14614

Dear Mr. Biondolillo:

Re: NYSDEC Spill # 9970601 Port of Rochester Lake Avenue Rochester (C), Monroe County

Let this letter serve as follow up to both your May 24, 2004 submission and the June 8, 2004 meeting and site visit attended by this Department, the City of Rochester and LaBella Associates, regarding the above referenced spill location. Based upon the remedial work completed at the site, the information contained in the May 24, 2004 submission, previously submitted information and the current and expected future use of the property, the Department does not require any additional remedial work at this time. This spill has been removed from the Department's active files. However, be aware that this ruling does not preclude reactivation of this case should new information become available and/or an impact to receptors be discovered in the future.

If there are any questions or comments, feel free to contact me at either the above address or by telephone at 585-226-5438.

Sincerely,

Jomita P.E.

Michael F. Zamiarski, P.E. Environmental Engineer II Bureau of Technical Support Division of Environmental Remediation

Greg Senecal, LaBella Associates, P.C.

CC:



January 21, 2002

Dan David, P.E. New York State Department of Environmental Conservation **Region 8 Solid Waste Division** 6274 East Avon Lima Road Avon, New York 14414

Port of Rochester, North Parking Lot/Beach Avenue Pedestrian Improvements RE: Northern Street Design and Construction Project Port of Rochester, Rochester, New York LaBella Project # 99150 Phase 2320

LaBella Associates, P.C. Engineering, Architecture, Environmental Consulting, and Surveying

÷

Seroio Esteben, P.E. Michael W. Haley, L.S. Robert A. Hasly, A.I.A. Salvatoro A. LaBella, P.E. James R. Molntosh, P.E. Michael S. Schaltion, P.E.

JAN 2 3 2002

SOLID HAZARDOUS MATERIALS **RPGICNB** 

Dear Mr. David:

This letter is a follow up to our conversation on Monday, January 14, 2002, regarding the above referenced construction project.

During our conversation, we discussed the management of fill materials containing slag, coal, cinders, railroad ballast, and ash at the City of Rochester-Port of Rochester Redevelopment Project Site. This area of solid waste/fill encompasses approximately 13 acres on the north portions of the Site, and appears to be from historical filling associated with railroad terminals and sidings and a large iron foundry and blast furnace. The Port of Rochester Redevelopment Plan envisions paved parking lots and commercial development pads in this area of the project Site. See attached Figure.

I indicated to you that the fill materials containing slag, coal, cinders, railroad ballast, and ash had been sampled and analyzed, and that the material contained levels of arsenic above NYSDEC TAGM #4046 published Eastern USA background levels. Representative samples were submitted for TCLP analysis for metals. No TCLP failures were realized in the samples of slag and ash fill that were exposed to the toxicity leaching procedure. A copy of the Phase II Environmental Assessment: Preliminary Site Characterization Report was submitted to the NYSDEC Spills Group in 2001.

In two discreet areas, this material also contained levels of NYSDEC regulated Semi Volatile Organic (Polycyclic Aromatic Hydrocarbons) at levels slightly above NYSDEC TAGM #4046 guidance values. This condition was previously reported to the NYSDEC Region 8 Spills Group. The NYSDEC added the information to the existing spill file; NYSDEC Spill #990601. LaBella is currently addressing issues associated with these two areas with the NYSDEC Spills Group.

Upcoming construction activities that are anticipated to occur within the next year may disturb this layer of solid waste/fill are the re-grading and repaying of the Northern parking lots, and the construction of new roadways, parking lots, and associated utilities in the north central portion of the Site. See attached Figure.

You indicated that the department considers the above referenced materials as solid waste that could not be treated as a Construction and Demolition solid waste, due to the nature of its origin as a solid waste derived from an industrial source. Furthermore you indicated that the department would not approve of the disposal of this material at Construction and Demolition debris landfills.

> FAX (716) 454-3066 (716) 454-6110 300 State Street, Rochester, NY 14614 FAX (607) 324-7665 (607) 324-0222 20 Seneca Street, Hornell, NY 14843 FAX (814) 258-7116 (814) 258-5673 403 E. Main Street, Elkland, PA 16920

P. 03

Dan David, P.E. January 21, 2002 Page 2

We discussed the option of excavating the fill materials containing slag, coal, cinders, railroad ballast, and ash and placing these solid wastes into other similar filled areas of the Site for use as additional fill. You indicated that this solid waste management option was acceptable to the Department and in accordance with 6 NYCRR Part 360-1.7(b)(9) You also indicated that the department would recommend particulate armonitoring and dust suppression measures as necessary during construction activities.

At this time, we anticipate proceeding with the on Site management of the above referenced solid waste in accordance with 6NYCRR Part 360-1.7(b)(9).

If you feel that this letter represents an accurate representation of our conversation and agreement, please sign in the space provided and return a copy of this letter to me via fax (585) 454-3066 to serve as documentation of our conversation and agreement.

Thank you for your assistance in this matter. If you have any questions, please do not hesitate to contact me at (585)-454-6110.

Sincerely.

ł

LABELLA ASSOCIATES, P.C.

egery

Gregory Senecal, CHMM Phase I &II Program Manager

Attachments

cc:

S. Esteban; LaBella

- S. Metzger; LaBella
- R. VenVertloh; LaBella
- C. Ecklund; LaBella
- J. Biondolillo; City of Rochester
- B. Price; City of Rochester
- B. Thee, city of Rocheste

JZA21DP1

Engineering

Architecture





300 State Street, Suite 201, Rochester, NY 14614

January 24, 2002

Phone 585.454.6110 Fax 585.454.3066 www.labellapc.com

William M. Price, RLA Project Manager City of Rochester DES/Engineering and Architecture 30 Church Street, Room 300B Rochester, NY 14614-1279

Re: Worker Health and Safety Related to Excavation of Slag-Containing Materials Port of Rochester Harbor Improvement and Harbor Ferry Terminal City of Rochester ID #99021 NYSDOT PIN 4752.60 and 4752.62 LaBella Project No. 99150

Dear Mr. Price:

We have conducted testing to evaluate the potential for exposure to hazardous gases and vapors as a result of disturbing subsurface slag-containing materials during trenching operations.

Three test pits were excavated to a depth of approximately 6 feet. Slag-containing materials were encountered in each test pit. The sampling procedure consisted of placing an evacuated Silco Canister at the bottom of the pit immediately upon reaching the desired depth, and opening the sample valve. Sample duration was approximately 1 minute or less. The odor of hydrogen sulfide was detected in each test pit.

The Silco Canisters were sent to Performance Analytical, Inc. for sample analysis. The analytical methods applied to the samples include EPA Method TO-15 by GC/MS for Tentatively Identified Compounds (TICs) and GC/SCD Analysis for 20 sulfur compounds. Laboratory results are attached.

The sample results indicate that no sulfur or sulfide compounds were present above the method detection limit. which is in the part per billion range. Hydrogen sulfide is obviously present at concentrations above the odor threshold, but below the method detection limit. A series of light-weight organic com-pounds was detected in each sample. The detected compounds probably represent ambient concentrations of vehicle combustion emissions. They are present at concentrations well below hazardous levels.

Planned excavations of these soils will not present an inhalation hazard to construction workers in the vicinity of excavating.

As noted, the <u>odor</u> of hydrogen sulfide is detectable during active excavation and subsequent disturbance of the slag. As a result there is a possibility that the odor of hydrogen sulfide may present a community nuisance during construction but it is not expected to present a health hazard.

Very truly yours,

LABELLA ASSOCIATES, P.C.

Richard K. Rote, CIH

RKR/deh Attachments Cc: Sergio Esteban, LaBella Associates, P.C. LaBella Project File No. 99150, Nos. 1 and 9 N/J2A24RR1

Relationships, Resources, Results,



ł

į

## **Performance Analytical Inc.**

Air Quality Laboratory A Division of Columbia Analytical Services, Inc. An Employee Owned Company

South Pit

### **RESULTS OF ANALYSIS**

Page 1 of 1

LaBella Associates, PC	
South Pit	PAI Project ID: P2102852
99150-2320	PAI Sample ID: P2102852-001
	LaBella Associates, PC South Pit 99150-2320

### **Tentatively Identified Compounds**

Test Code:	EPA TO-15			Date Collected: 1	2/11/01
Instrument ID:	HP5972/Tekmar AUTOCan Elite			Date Received: 1	2/12/01
Analyst:	Wade Henton	•		Date Analyzed: 1	2/14/01
Sampling Media:	Silco Canister			Volume(s) Analyzed:	0.50 Liter(s)
Test Notes:	т				
Canister ID :	#01194				
		Pi 1 =	0.1	Pf 1 = 3.5	

D.F. = 1.23

GC / MS	Compound Identification	Concentration	Data
Ret. Time		μg/m³	Qualifier
4.49	Propane	60	
4.90	Isobutane	20	
5.21	n-Butane	50	
6.30	2-Methylbutane	40	
6.82	n-Pentane	70	
6.98	C <sub>5</sub> H <sub>10</sub> Compound	20	
8.69	2-Methylpentane	20	
9.16	3-Methylpentane	20	
9.74	n-Hexane	30	
12.82	3-Methylhexane	10	
13.87	n-Heptane	20	
18.46	n-Octane	10	
20.91	m- & p-Xylenes	9	
26.60	C <sub>10</sub> H <sub>14</sub> Aromatic Compound	10	
27.25	C <sub>10</sub> H <sub>14</sub> Aromatic Compound	10	

T = Analyte is a tentatively identified compound, result is estimated.

.

2665 Park Center Drive, Suite D. Suni Valley, California 93065 • Phone (805) 526-7161 • Pax (805) 526-7270

Verified By: RG Date: DDate:

7

Page No

## **Performance Analytical Inc.**



1

ł

•

Ar: Quality Laboratory A Division of Columbia Analytical Services, Inc. An Employee Owned Company BESHLTS

South Pit

**RESULTS OF ANALYSIS** 

Page 1 of 1

Client:	LaBella Associates, PC		
<b>Client Sample ID:</b>	South Pit	PAI Project ID: P2102852	
<b>Client Project ID:</b>	99150-2320	PAI Sample ID: P2102852-001	
:			
Test Code:	ASTM D5504-98	Date Collected: 12/11/01	
Instrument ID:	HP5890A/SCD #5	Time Collected: 10:45	
Analyst:	Annie Calvagna	Date Received: 12/12/01	
Sampling Media:	Silco Canister	Date Analyzed: 12/13/01	
Test Notes:	·	Time Analyzed: 15:20	
Container ID:	#01194	Volume(s) Analyzed: 1.0 n	ml

Pi 1 = 0.1 Pf 1 = 3.5

D.F.= 1.23

3

		Result	MRL	Result	MRL	Data
CAS #	Compound					Qualifier
		µg∕m³	μg/m³	· ppbV	ppbV	
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	
638-02-8	2,5-Dimethylthiophene	_ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

92852SVG RD1 - Sample

Verified By: <u>RG</u> Date: <u>DDD</u> Date: <u>DDD</u>



i

ŧ

### **Performance Analytical Inc.**

Air Quality Laboratory A Division of Columbia Analytical Services. Inc. An Employee Owned Company

Middle Pit

### **RESULTS OF ANALYSIS**

Page 1 of 1

.-

LaBella Associates, PC Client: Client Sample ID: Client Project ID: 99150-2320

West Pit

PAI Project ID: P2102852 PAI Sample ID: P2102852-002

### **Tentatively Identified Compounds**

Test Code:	EPA TO-15			Date Collected: 12/11/01
Instrument ID:	HP5972/Tekmar AUTOCan Elite			Date Received: 12/12/01
Analyst:	Wade Henton			Date Analyzed: 12/14/01
Sampling Media:	Silco Canister			Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:	Т			
Canister ID :	#01203			
		Pi 1 =	0.1	Pf 1 = 3.5

D.F. = 1.23

GC / MS	Compound Identification	Concentration	Data
Ret. Time		μg/m³	Qualifier
4.50	Propane	60	
4.90	Isobutane	20	
5.22	n-Butane	50	
6.29	2-Methylbutane	30	
6.81	n-Pentane	50	
8.69	2-Methylpentane	10	
9.15	3-Methylpentane	10	
9.73	n-Hexane	20	
13.84	n-Heptane	10	
19.30	Hexamethylcyclotrisiloxane (Possible Artifact)	40	
20.91	m- & p-Xylenes	8	
24.79	Unidentified Siloxane (Possible Artifact)	10	
26.58	C10H14 Aromatic Compound	10	
27.24	C <sub>10</sub> H <sub>14</sub> Aromatic Compound	10	
27.72	Unidentified Siloxane (Possible Artifact)	10	

T = Analyte is a tentatively identified compound, result is estimated.

Date: 122701 RU Verified By:

8

Page No.:

02852V0A.RD1 - TIC (2)

2605 Park Center Drive, Sune D. smit Valley, California 93065 ( Phone (805) 526-7461 ( Fax (805) 526-7270

# Performance Analytical Inc.



ì

Air Quality Laboratory A Division of Columbia Analytical Services. Inc. An Employee Owned Company RESULT

Middle Pit

**RESULTS OF ANALYSIS** 

Page 1 of 1

Client:	LaBella Associates, PC	
Client Sample ID:	West Pit	PAI Project ID: P2102852
Client Project ID:	99150-2320	PAI Sample ID: P2102852-002
Test Code:	ASTM D5504-98	Date Collected: 12/11/01

Test Code:	ASTM D5504-98			Date Collected: 12/11/	01
Instrument ID:	HP5890A/SCD #5			Time Collected: 11:00	U C
Analyst:	Annie Calvagna	· · ·		Date Received: 12/12/	01
Sampling Media:	Silco Canister			Date Analyzed: 12/13/	01
Test Notes:				Time Analyzed: 15:40	
Container ID:	#01203			Volume(s) Analyzed:	1.0 ml
		Pi 1 =	0.1	Pf 1 = 3.5	

D.F.= 1.23

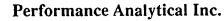
<u> </u>	1	Result	MRL	Result	MRL	Data
CAS #	Compound					Qualifier
		μg/m³	μg/m³	ppbV	ppbV	
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	<u>  </u>
75-66-1	tert-Butyl Mercaptan	ND	18.0 •	ND .	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	l
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	ļ
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	ļ
624-92-0	Dimethyl Disulfide	. ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	<u> </u>
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	<u> </u>

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

92852SVG RD1 - Sample (2)

Verified By: RG Date: 12/21/01 Page No. 4

2665 Park Center Drive, Suite D. Simi Valley, California 93065 • Phone (805) 526-7161• Fax (805) 526-7279





•

ţ

1

Air Quality Laboratory A Division of Columbia Analytical Services, Inc. An Employee Owned Company

North Pit

### **RESULTS OF ANALYSIS**

Page 1 of 1

Client:	LaBella Associates, P	С
<b>Client</b> Sample ID:	North Pit	PAI Project ID: P2102852
Client Project ID:	99150-2320	PAI Sample ID: P2102852-003 -
Client Project ID:	99150-2320	PAI Sample ID: P2102852-003 -

### **Tentatively Identified Compounds**

Test Code:	EPA TO-15			Date Collected: 12/11/01
Instrument ID:	HP5972/Tekmar AUTOCan Elite			Date Received: 12/12/01
Analyst:	Wade Henton			Date Analyzed: 12/14/01
Sampling Media:	Silco Canister			Volume(s) Analyzed: 0.50 Liter(s)
Test Notes:	Т			
Canister ID :	#00600			
		Pi 1 =	0.3	Pf 1 = 3.5
	•			D.F. = 1.21

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data Qualifier
4.49	Propane	10	
4.91	Isobutane	6	
5.21	n-Butane	10	
6.29	2-Methylbutane	10	
6.82	n-Pentane	10	

T = Analyte is a tentatively identified compound, result is estimated.

\_Date:\_12127101\_\_\_\_\_\_Page No.: Verified By: RG

9

PERFORMANCE



1

.

Performance Analytical Inc.

Air Quality Laboratoty A Division of Calumbia Analytical Services, Inc. An Employee Owned Company RESUL

North Pit

Pf1 = 3.5

**RESULTS OF ANALYSIS** 

Page 1 of 1

Client: Client Sample ID: Client Project ID:		PAI Project ID: P2102852 PAI Sample ID: P2102852-003
Test Code:	ASTM D5504-98	Date Collected: 12/11/01
Instrument ID:	HP5890A/SCD #5	Time Collected: 11:20
Analyst:	Annie Calvagna	Date Received: 12/12/01
Sampling Media:	Silco Canister	Date Analyzed: 12/13/01
Test Notes:		Time Analyzed: 15:59
Container ID:	#00600	Volume(s) Analyzed: 1.0 ml

a.

Pi1 = 0.3

D.F.= 1.21

	1	Result	MRL	Result	MRL	Data
CAS #	Compound					Qualifier
		µg/m³	μg/m³	ppbV	ppbV	
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	]
463-58-1	Carbonyl Sulfide	ND	12.0	ND	5.00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	1
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7,80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	1
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	1
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	1
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9,60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	1
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	·····
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	∦
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

(23525VG RD2 - Sample (3)

Verified By: RG \_Date: 1124102 Page No.

2665 Park Center Drive, Suite D, Simi Valley, California 93065 - Phone (805) 526-7161 - Fax (805) 526-7270



ł

ţ

# Performance Analytical Inc.

Air Quality Laborator, A Division of Columbia Analytical Services, Inc. An Employee Owned Company

Blank

# **RESULTS OF ANALYSIS**

Page 1 of 1

Client:	LaBella Associates, PC	
<b>Client Sample ID:</b>	Method Blank	PAI Project ID: P2102852
<b>Client Project ID:</b>	99150-2320	PAI Sample ID: P011214-MB

### **Tentatively Identified Compounds**

Test Code:	EPA TO-15	Date Collected: N	ΓA
Instrument ID:	HP5972/Tekmar AUTOCan Elite	Date Received: N	IA
Analyst:	Wade Henton	Date Analyzed: i	2/14/01
Sampling Media:	Silco Canister	Volume(s) Analyzed:	1.00 Liter(s)
Test Notes:			

D.F. = 1.00

 $\sim$ 

GC / MS Compound Identification		Concentration	Data	
Ret. Time		µg/m³	Qualifier	
	No Compounds Detected			

10 Verified By: R.G Date: 12/27/01 Page No.:





.

ł

ł

Air Quality Laboratory A Division of Columbia Analytical Services, Inc. An Employee Owned Company

Blank

### **RESULTS OF ANALYSIS**

- .

Page 1 of 1

Client:	LaBella Associates, PC	
Client Sample ID:	Method Blank	PAI Project ID: P2102852
<b>Client Project ID:</b>	99150-2320	PAI Sample ID: P011213-MB

Test Code:	ASTM D5504-98	Date Collected: NA	
Instrument ID:	HP5890A/SCD #5	Time Collected: NA	
Analyst:	Annie Calvagna	Date Received: NA	
Sampling Media:	Silco Canister	Date Analyzed: 12/13/01	
Test Notes:		Time Analyzed: 11:36	
		Volume(s) Analyzed:	1.0 ml
		• •	

D.F.= 1.00

		Result	MRL	Result	MRL	Data
CAS #	Compound					Qualifier
		μg/m³	μg/m³	. ppbV	ppbV	
7783-06-4	Hydrogen Sulfide	ND	7.00	ND	5.00	
463-58-1	Carbonyl Sulfide	ND	12.0	ND	<b>5</b> .00	
74-93-1	Methyl Mercaptan	ND	9.80	ND	5.00	
75-08-1	Ethyl Mercaptan	ND	13.0	ND	5.00	
75-18-3	Dimethyl Sulfide	ND	13.0	ND	5.00	
75-15-0	Carbon Disulfide	ND	7.80	ND	2.50	
75-33-2	Isopropyl Mercaptan	ND	16.0	ND	5.00	
75-66-1	tert-Butyl Mercaptan	ND	18.0	ND	5.00	
107-03-9	n-Propyl Mercaptan	ND	16.0	ND	5.00	
624-89-5	Ethyl Methyl Sulfide	ND	16.0	ND	5.00	
110-02-1	Thiophene	ND	17.0	ND	5.00	
513-44-0	Isobutyl Mercaptan	ND	18.0	ND	5.00	
352-93-2	Diethyl Sulfide	ND	18.0	ND	5.00	
109-79-5	n-Butyl Mercaptan	ND	18.0	ND	5.00	
624-92-0	Dimethyl Disulfide	ND	9.60	ND	2.50	
616-44-4	3-Methylthiophene	ND	20.0	ND	5.00	
110-01-0	Tetrahydrothiophene	ND	18.0	ND	5.00	·
638-02-8	2,5-Dimethylthiophene	ND	23.0	ND	5.00	
872-55-9	2-Ethylthiophene	ND	23.0	ND	5.00	
110-81-6	Diethyl Disulfide	ND	12.0	ND	2.50	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

02852SVG.RD1 - MBlank

Verified By: <u>R</u> Date: j2]27]01 Page No.

6



### **Performance Analytical Inc.**

Air Quality Laborator; A Division of Columbia Analytical Services. Inc. An Employee Owned Company

### LABORATORY REPORT

Client:	LABELLA ASSOCIATES, PC		Date of Report:	12/27/01
Address:	300 State Street, 2nd Floor		Date Received:	12/12/01
	Rochester, NY 14614		PAI Project No:	P2102852
Contact	Mr. Richard Rote		Purchase Order	Verbal
Client Project	ID: 99150-2320		New York ELAP ID:	11221
Three (3) Silc	o Canister Samples labeled:	"South Pit"	"West Pit" "N	lorth Pit"

The samples were received at the laboratory under chain of custody on December 12, 2001. The samples were received intact. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time that they were received at the laboratory.

### Sulfur Analysis

The samples were analyzed for twenty sulfur compounds per modified SCAQMD Method 307-91 and ASTM D 5504-98 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). All compounds with the exception of hydrogen sulfide and carbonyl sulfide are quantitated against the initial calibration curve for methyl mercaptan.

Beceived By JAN 97 7007

No. -Linia

Reviewed and Approved:

Wade Henton Senior Chemist

ţ

Reviewed and Approved:

rum John Yokovama

Operations Manager Page 1 of <u>12</u>

2665 Park Center Drive, Suite D. Simt Valley, California 93065 • Phone (805) 526-7164• Fax (805) 526-7270



Performance Analytical Inc.

Air Quality Laboratory A Division of Columbia Analytical Services, Inc. An Employee Owned Company

### Tentatively Identified Compounds Analysis

The samples were also analyzed by combined gas chromatography/mass spectrometry (GC/MS) for tentatively identified compounds. The analyses were performed according to the methodology outlined in EPA Method TO-15. The analyses were performed by gas chromatography/mass spectrometry, utilizing a direct cryogenic trapping technique. The analytical system used was comprised of a Hewlett Packard Model 5972 GC/MS/DS interfaced to a Tekmar AutoCan Elite whole air inlet system/cryogenic concentrator. A 100% Dimethylpolysiloxane capillary column ( $RT_x$ -1, Restek Corporation, Bellefonte, PA) was used to achieve chromatographic separation

The results of analyses are given on the attached data sheets.

# Performance Analytical Inc. Sample Acceptance Check Form

Chent	: LaBella Associates,	PC		Work order:	P2102852			
Project	/ 99150-2320							
•	mple(s) received on:	12/12/01	Date opened:			SM		
<u>Note:</u> This for	nn is used for <u>all</u> samples receiv nonconformity. Thermal prese	ed by PAI. The use of the	his form for custody seal	s is strictly meant to in the request of the client	dicate presence at or as required by	sence and no the method/S	ot as an indic OP.	ation of
compliance of	noncontornary. Themas press	a valion and pri win only	ine evaluated entited at a			Yes	No	<u>N/A</u>
1	Were custody seals on o	outside of cooler/Bo	x?				X	
	Location of seal(s)?			Sealing Lid?				$\mathbf{X}$
	Were signature and date	included?	<u></u>					$\mathbf{X}$
	Were seals intact?							$\mathbf{X}$
	Were custody seals on out	side of sample contain	ег?				$\mathbf{X}$	
	Location of seal(s)?			Sealing Lid?	·			$\mathbf{X}$
	Were signature and date	included?		-				X
	Were seals intact?							$\mathbf{X}$
2	Were sample container	rs marked with clien	t sample ID?			$\boxtimes$		
3	Did sample containers	arrive in good cond	ition?			$\mathbf{X}$		
4	Were chain-of-custody	papers used and fill	ed out?			$\mathbf{X}$		
5	Did sample container l	abels and/or tags ag	ree with custody pa	pers?		$\mathbf{X}$		
6	Was sample volume re	ceived adequate for	analysis?			$\mathbf{X}$		
7	Are samples within spe	-						
8	Was proper temperatu	re (thermal preserva	tion: of cooler at rea			Ģ		$\mathbf{X}$
		Cooler Temperatur	····	_°C				
		Blank Temperature		_°C		-		
9	Is pH (acid) preservati				i information			
	Is there a client indication			preserved?				
	Were <u>VOA vials</u> checke			TT				
	Does the client/method/	SOP require that the ai	alyst check the samp	e pH and <u>if hecessar</u>	y atter it?			
	Lab Sample ID		Required	pł	1	v	OA Heads	pace
	1		pH	(as received,		(Pr	esence/Ab	sence)
Da102062 (	<u>x. 0 0 7 7</u>			<u></u>		1	NA	
P2102852-0 P2102852-0			<u></u>			+	NA	
P2102852-(			***				NA	
	·					·{		
			<u> </u>					
							·····	
l				1		1		

Explain any discrepancies: (include lab sample ID numbers):

•

i

į

11



300 State Street Rochester, New York 14614

# Appendix 2

Analytical Summary Tables from Phase II Environmental Site Assessment The analytical data from the these characterization samples is detailed in the table below:

# Bourne Test Pit Soil Sample Results (ug/kg) USEPA Method 8270 Table 4

#### Bourne Bourne NYSDEC TAGM **TP#1** TP#1 4046 Soil Cleanup NYSDEC STARS (Typical (Slag **Objective to Protect** TCLP Alternative **Groundwater Quality Guidance Value** Fill) Waste) Benzyl Alcohol ND<890 ND<762 N/A N/A Bis (2-chloroethyl) ether ND<356 ND<305 N/A N/A Bis (2-chloroisopropyl) ether ND<356 ND<305 N/A N/A 2-Chlorophenol ND<356 ND<305 800 N/A 1,3-Dichlorobenzene ND<356 ND<305 1,550 N/A 1,4-Dichlorobenzene ND<356 ND<305 8,500 N/A 1,2-Dichlorobenzene ND<356 ND<305 7,900 N/A Hexachloroethane ND<356 ND<305 N/A N/A 2-Methylphenol ND<356 ND<305 100 N/A 900 4-Methylphenol ND<356 ND<305 N/A N-Nitrosodimethylamine ND<356 ND<305 N/A N/A N-Nitroso-di-n-propylamine ND<356 ND<305 N/A N/A Phenol ND<356 ND<305 30 N/A Benzoic Acid ND<890 ND<762 2,700 N/A Bis (2-chloroethoxy) methane ND<356 ND<305 N/A N/A 4-Chloroaniline ND<356 ND<305 220 N/A 4-Chloro-3-methylphenol ND<356 ND<305 240 N/A 2,4-Dichlorophenol ND<356 ND<305 400 N/A 2,6-Dichlorophenol ND<356 ND<305 N/A N/A 2,4-Dimethylphenol ND<356 ND<305 N/A N/A Hexachlorobutadiene ND<356 ND<305 N/A N/A Isophorone ND<356 ND<305 4,400 N/A 2-Methylnapthalene ND<356 ND<305 36,400 N/A Napthalene 945 ND<305 13,000 200 ND<356 ND<305 Nitrobenzene 200 N/A 2-Nitrophenol ND<356 ND<305 330 N/A 1,2,4-Trichlorobenzene ND<356 ND<305 3,400 N/A 2-Chloroaphthalene ND<356 ND<305 N/A N/A Acenaphthene ND<356 ND<305 90,000 400 Acenaphthylene ND<356 ND<305 41,000 N/A 4-Chlorophenyl phenyl ether N/A ND<356 ND<305 N/A Dibenzofuran ND<356 ND<305 6,200 N/A

Page 12

# Bourne Test Pit Soil Sample Results (continued) USEPA Method 8270

	Bourne TP#1 (Typical Fill)	Bourne TP#1 (Slag Waste)	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
Diethyl phthalate	ND<356	ND<305	7,100	N/A
Dimethyl phthalate	ND<890	ND<762	2,000	N/A
2,4-Dinitrophenol	ND<356	ND<305	200	N/A
2,4-Dinitrotoluene	ND<356	ND<305	N/A	N/A
2,6-Dinitrotoluene	ND<356	ND<305	1,000	N/A
Flourene	365	ND<305	350,000	1,000
Hexachlorocyclopentadiene	ND<356	ND<305	N/A	N/A
2-Nitroaniline	ND<890	ND<762	430	N/A
3-Nitroaniline	ND<890	ND<762	500	N/A
4-Nitroaniline	ND<890	ND<762	N/A	N/A
4-Nitrophenol	ND<890	ND<762	100	N/A
2,4,6-Trichlorophenol	ND<356	ND<305	N/A	N/A
2,4,5-Trichlorophenol	ND<890	ND<762	100	N/A
4-Bromophenyl phenyl ether	ND<356	ND<305	N/A	N/A
Di-n-butyl phthalate	ND<356	ND<305	8,100	N/A
4,6-Dinitro-2-methylphenol	ND<890	ND<762	N/A	N/A
Flouranthene	1,900	ND<305	1,900,000	1,000
Hexachlorobenzene	ND<356	ND<305	1,400	N/A
N-nitrosodiphenylamine	ND<356	ND<305	N/A	N/A
Pentachlorophenol	ND<890	ND<762	1000	N/A
Anthracene	495	ND<305	700,000	1,000
Phenanthrene	ND<356	ND<305	220,000	1,000
Benzidine	ND<890	ND<762	N/A	N/A
Benzo (a) anthracene	835	ND<305	3,000	0.04
Bis (2-ethylhexyl) phthalate	ND<356	ND<305	435,000	N/A
Butylbenzylphthalate	ND<356	ND<305	122,000	N/A
Chrysene	856	ND<305	400	0.04
3,3'-Dichlorobenzidine	ND<356	ND<305	N/A	N/A
Pyrene	1,530	ND<305	665,000	1,000
Benzo (b) flouranthene	954	ND<305	1,100	0.04
Benzo (k) flouranthene	1,470	ND<305	1,100	0.04
Benzo (g,h,I) perylene	580	ND<305	800,000	0.04
Benzo (a) pyrene	919	ND<305	11,000	0.04
Dibenz (a,h) anthracene	ND<356	ND<305	165,000,000	1,000
Di-n-octylphthalate	ND<356	ND<305	120,000	N/A
Indeno (1,2,3-cd) pyrene	576	ND<305	3,200	0.04

All sample results and guidance values are listed in ug/kg =ppb

N/A - Not Applicable

ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

Page 13

As noted in the table above there were levels of NYSDEC regulated SVOC's detected in the fill sample from Bourne TP-1. The suite of SVOC's that were detected in the fill sample are consistent with the Polycyclic Aromatic Hydrocarbons. These levels and types of SVOC's may be beneath NYSDEC Soil Inactivation Site Specific Risk Based Guidance Valves, based on the fact that they all have very low volatilization factors. These risk-based calculations could be completed when more detailed development plans (i.e., final elevations, depth of filling, and future use of this portion of the Site) have been arrived at.

#### Bourne Test Pit Soil Sample Results (mg/kg)

8 RCRA Metals

Table 5

	Bourne TP#1 (Typical Fill)	Bourne TP#2 (Slag Waste)	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Cleanup Objectives
Arsenic	20.6	0.875	3-12	7.5 or SB
Barium	188	511	15-600	300 or SB
Cadmium	191	2.84	0.1-1	1 or SB
Chromium	43	<1.96	1.5-40	10 or SB
Lead	191	<9.80	*200-500	SB
Mercury	<0.103	<0.0690	0.001-0.2	0.1
Selenium	<1.08	<0.980	0.1-3.9	2 or SB
Silver	<1.08	<0.980	N/A	SB

\* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

> All sample results and guidance values are listed in mg/kg=ppm N/A - Not Applicable ND = Not Detected Bold denotes constituents above NYSDEC Guidance Values SB= Site Background

#### Bourne Test Pit Soil Sample Results (mg/kg) Cyanide Reactivity Table 6

	Bourne TP#1 (Slag Waste)	Bourne TP#1 (Typical Fill)			
Cyanide Reactivity	ND<1, Non-Reactive	ND<1, Non Reactive			
	ample results and guidance values a ld denotes constituents above NYSE	0 0 11			

Page 14

As detailed in the table above no 8 RCRA metals were detected in the samples above method detection limits with the exception of cadmium and low levels of arsenic and chromium. The samples also tested non-reactive for cyanide reactivity.

Cadmium was elevated well above background levels in the fill sample, however the remaining 8 RCRA Metals were at or near Eastern USA Background levels in the fill and slag sample.

Fill and soil encountered in Bourne TP#2a exhibited evidence of petroleum hydrocarbon impairment, and was sampled and analyzed for petroleum related VOC's by USEPA Method 8021 STARS and for SVOC's by USEPA Method 8270 STARS. Bourne TP#2b was advanced approximately 20'-30'east, presumed to be hydraulically downgradient of Bourne TP#2a to aid in preliminary delineation of the discovered petroleum impairment. Evidence of petroleum impairment was not observed in Bourne TP#2b, indicating that the aerial extent of petroleum impacted soil and groundwater observed in the vicinity of Bourne TP#2a is limited.

The analytical data from the petroleum characterization sample from Bourne TP#2a is detailed in the table below:

## Bourne Test Pit Sample Results (ug/kg) USEPA Method 8021 Table 7

	Bourne TP#2a (5')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality
Methyl tert-Butyl Ether	ND<726	200	120
Benzene	3,140	14	60
Toluene	992	100	1,500
Ethylbenzene	7760	100	5,500
m,p-Xylene	25,600	100	1,200
o-Xylene	5,910	100	1,200
Isopropylbenzene	1,680	100	4,000
n-Propylbenzene	6,770	100	1,400
1,3,5-Trimethylbenzene	13,500	100	17,000
tert-Butylbenzene	ND<726	100	N/A
1,2,4-Trimethylbenzene	48,000	100	13,000
sec-Butylbenzene	1,210	100	24,000
p-Isopropyltoluene	815	100	10,000
n-Butylbenzene	ND<726	100	17,000
Naphthalene	9,030	200	13,000

All sample results and guidance values are listed in ug/kg = ppb ND = Not Detected N/A = Not Available Bold denotes constituents above NYSDEC Guidance Values

#### Page 15

#### Bourne Test Pit Soil Boring Sample Results (ug/kg) USEPA Method 8270 Table 8

	Bourne TP#2a (5')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Clean Up Objectives to Protect Groundwater Quality
Napthalene	3640	200	13,000
Acenaphthene	ND<813	1000	90,000
Flourene	ND<813	1000	350,000
Flouranthene	ND<813	1000	1,900,000
Anthracene	ND<813	400	700,000
Phenanthrene	ND<813	1000	220,000
Benzo (a) anthracene	ND<813	0.04*	3,000
Chrysene	ND<813	0.04*	400
Pyrene	ND<813	1000	665,000
Benzo (b) flouranthene	ND<813	0.04*	1,100
Benzo (k) flouranthene	ND<813	0.04*	1,100
Benzo (g,h,l,)perylene	ND<813	0.04*	800
Benzo (a) pyrene	ND<813	0.04*	11,000
Dibenz (a,h) anthracene	ND<813	1000	165,000,000
Indeno (1,2,3-cd)pyrene	ND<813	0.04*	3,200

All sample results and guidance values are listed in ug/kg=ppb N/A = Not Applicable ND = Not Detected Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above no SVOC's were detected in the sample above method detection limits. Petroleum related VOC's were detected at levels well above NYSEC recommended levels for VOC's in soils. Interpretation of the laboratory results by Paradigm Environmental Services, indicated that results were consistent with weathered kerosene, gasoline, or mineral spirits.

This area at the Site is referred to as Area #1 and is depicted in Figure 8.

Analytical data from the shared Bourne Test Pitting Study is included as Appendix 2.

Due to the desire not to delay Bourne's schedule, and because of repaving concerns, it was decided to continue characterization of this area of petroleum impaired soil and fill, during the geoprobe soil boring phase of the Site characterization.

#### Page 16

The analytical data for 8 RCRA metals from the these characterization samples is detailed in the tables below:

# LaBella Test Pit Soil Sample Results (mg/kg) 8 RCRA Metals (Total) Table 10

	LBA TP#1 (0'-2')	LBA TP#6 (4')	LBA TP#6 (White Slag)	LBA TP#6 (Black Slag)	LBA TP#8 (2'-3')	LBA TP#9 (Red Slag)	LBA TP#10 (3')	LBA TP#15 (6'-8')	LBA TP#18 (Green Slag)	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Cleanup Objectives
Arsenic	3.1	17.8	<6.23	17.5	52	<4.90	51.1	7.12	<4.40	3-12	7.5 or SB
Barium	909	91.4	81	193	165	177	22.2	657	80.2	15-600	300 or SB
Cadmium	<0.483	0.64	<0.623	<0.535	0.584	<0.490	0.604	<0.382	<0.440	0.1-1	1 or SB
Chromium	5.9	6.77	2.24	11.8	15.4	3.04	3.72	17.8	1.41	1.5-40	10 or SB
Lead	38.6	76.3	<0.623	4.18	62.8	<0.490	5.33	3.29	<0.440	*200-500	SB
Mercury	<0.0735	0.141	<0.0878	0.0774	<0.0787	<0.0981	0.24	<0.593	<0.0760	0.001-0.2	0.1
Selenium	<4.83	<4.58	<6.23	<5.35	1.15	<4.90	<5.03	<3.82	<4.40	0.1-3.9	2 or SB
Silver	<1.93	<1.83	3.74	<2.15	<2.34	<1.96	<2.01	<1.53	1.76	N/A	SB

\* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm.

Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

All sample results and guidance values are listed in mg/kg=ppm

N/A - Not Applicable

ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

SB - Site Background

Page 21

# LaBella Test Pit Soil Sample Results (mg/L) 8 RCRA Metals (TCLP) Table 11

	LBA TP#6 (White Slag)	LBA TP#6 (Black Slag)	LBA TP#8 (2'-3')	LBA TP#9 (Red Slag)	LBA TP#10 (5')	LBA TP#18 (Green Slag)	LBA TP#10 (13')	LBA TP#17 (8')	LBA TP#16 (2')	LBA TP#15 (6'-8')	NYSDEC Hazardous Waste Regulatory Levels for Toxicity Characteristic (mg/L)
Arsenic	<0.025	< 0.025	< 0.025	< 0.025	0.05	<0.025	<0.025	<0.025	<0.025	< 0.025	5
Barium	0.1	0.25	0.2	0.3	0.2	0.75	0.2	0.4	0.6	0.35	100
Cadmium	<0.025	<0.025	<0.025	<0.025	<0.025	< 0.025	<0.025	< 0.025	<0.025	< 0.025	1
Chromium	<0.025	<0.025	< 0.025	< 0.025	<0.025	< 0.025	<0.025	< 0.025	< 0.025	< 0.025	5
Lead	<0.025	< 0.025	< 0.025	< 0.025	<0.025	< 0.025	< 0.025	< 0.025	<0.025	< 0.025	5
Mercury	< 0.0020	< 0.0020	< 0.0020	<0.0020	< 0.0020	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.2
Selenium	<0.025	< 0.025	< 0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	< 0.025	1
Silver	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	5

All guidance values results are listed in mg/L = ppm ND = Not Detected N/A = Not Applicable Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above the levels of the 8RCRA Metals in the slag and ash fill samples was generally within Eastern USA Background Ranges as Published in NYSDEC TAGM #4046. In addition, none of the samples of slag and ash fill that were analyzed via the toxicity leaching procedure (TCLP) test exceeded NYSDEC Regulatory Levels.

The laboratory results for total metals from these slag and ash fill samples were consistently low. This is somewhat unusual because slag and ash fill typically contain elevated levels of metals. In order to verify that Paradigm Laboratories analytical results were accurate, one slag and ash fill sample was split and was submitted to Columbia Analytical Services, Rochester, New York for analysis. The results of this quality control analysis are as follows:

Phase II Environmental Site Characterization: Soil and Shallow Groundwater Investigation City of Rochester Harbor Ferry Terminal Project LaBella Project No. 99150

Page 22

# Split Soil Sample Results (HA Boring # 116, 2'-4') (mg/kg) 8 RCRA Metals (Total) Table 12

	Paradigm Environmental Services	Columbia Analytical	NYSDEC TAGM N 4046 Eastern USA Background	YSDEC TAGM 4046 Soil Cleanup Objectives
Arsenic	2.81	<1.09	3-12	7.5 or SB
Barium	238	212	15-600	300 or SB
Cadmium	<0.390	<0.544	0.1-1	1 or SB
Chromium	3.75	3.45	1.5-40	10 or SB
Lead	<0.389	<1.09	*200-500	SB
Mercury	< 0.053	< 0.0544	0.001-0.2	0.1
Selenium	4.77	1.5	0.1-3.9	2 or SB
Silver	2.73	<1.09	N/A	SB

\* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically

range from 200-500 ppm. All sample results and guidance values are listed in mg/kg=ppm N/A - Not Applicable All test pits are 0"-12" depth ND = Not Detected Bold denotes constituents above NYSDEC Guidance Values SB – Site Background

The levels of metals detected in the split sample from both laboratories are similar, and verify that the levels of metals reported in the samples from the Site are not caused or skewed by laboratory error.

During the excavation of LBATP #6 a petroleum like sheen was observed emanating from the layers of slag and floating on the standing groundwater in the test pit. No odor could be detected from this groundwater or the slag. In addition, no elevated PID readings were detected from either the water or the slag. One grab sample of the groundwater and a sample of the slag that appeared to be leaching the sheen to the groundwater were obtained for laboratory analysis. The slag grab sample was analyzed for SVOC's by USEPA Method 8270. The groundwater grab sample from the test pit was analyzed for Total Petroleum Hydrocarbons by NYSDOH Method 310.13. The analytical result for total petroleum hydrocarbons analysis was non-detect.

Two additional samples from the test pitting study were submitted for laboratory analysis. Both of these samples were obtained from shallow layers of black cinder like fill. The first sample was obtained from LBATP #1 at a depth of 0'-2'. The second sample was obtained from LBATP #10 at a depth of 3'.

The SVOC results for the three samples are detailed in the following table.

#### Page 23

# LaBella Test Pit Soil Sample Results (ug/kg) USEPA Method 8270

# Table 13

	LBA TP#1 (0'-2')	LBA TP#10 (3')	LBA TP#6 (4')	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
Benzyl Alcohol	ND<908	ND<795	ND<921	N/A	N/A
Bis (2-chloroethyl) ether	ND<363	ND<318	ND<368	N/A	N/A
Bis (2-chloroisopropyl) ether	ND<363	ND<318	ND<368	N/A	N/A
2-Chlorophenol	ND<363	ND<318	ND<368	800	N/A
1,3-Dichlorobenzene	ND<363	ND<318	ND<368	1550	N/A
1,4-Dichlorobenzene	ND<363	ND<318	ND<368	8500	N/A
1,2-Dichlorobenzene	ND<363	ND<318	ND<368	7900	N/A
Hexachloroethane	ND<363	ND<318	ND<368	N/A	N/A
2-Methylphenol	ND<363	ND<318	ND<368	100	N/A
4-Methylphenol	ND<363	ND<318	ND<368	900	N/A
N-Nitrosodimethylamine	ND<363	ND<318	ND<368	N/A	N/A
N-Nitroso-di-n-propylamine	ND<363	ND<318	ND<368	N/A	N/A
Phenol	ND<363	ND<318	ND<368	30	N/A
Benzoic Acid	ND<363	ND<795	ND<921	2700	N/A
Bis (2-chloroethoxy) methane	ND<363	ND<318	ND<368	N/A	N/A
4-Chloroaniline	ND<363	ND<318	ND<368	220	N/A
4-Chloro-3-methylphenol	ND<363	ND<318	ND<368	240	N/A
2,4-Dichlorophenol	ND<363	ND<318	ND<368	400	N/A
2,6-Dichlorophenol	ND<363	ND<318	ND<368	N/A	N/A
2,4-Dimethylphenol	ND<363	ND<318	ND<368	N/A	N/A
Hexachlorobutadiene	ND<363	ND<318	ND<368	N/A	N/A
Isophorone	ND<363	ND<318	ND<368	4400	N/A
2-Methylnapthalene	ND<363	ND<318	ND<368	36,400	N/A
Napthalene	945	ND<318	ND<368	13,000	200
Nitrobenzene	ND<363	ND<318	ND<368	200	N/A
2-Nitrophenol	ND<363	ND<318	ND<368	330	N/A
1,2,4-Trichlorobenzene	ND<363	ND<318	ND<368	3400	N/A
2-Chloroaphthalene	ND<363	ND<318	ND<368	N/A	N/A
Acenaphthene	ND<363	ND<318	ND<368	90,000	400
Acenaphthylene	ND<363	ND<318	ND<368	41,000	N/A
4-Chlorophenyl phenyl ether	ND<363	ND<318	ND<368	N/A	N/A
Dibenzofuran	ND<363	ND<318	ND<368	6200	N/A
Diethyl phthalate	ND<363	ND<318	ND<368	7100	N/A
Dimethyl phthalate	ND<908	ND<795	ND<921	2000	N/A
2,4-Dinitrophenol	ND<363	ND<318	ND<368	200	N/A
2,4-Dinitrotoluene	ND<363	ND<318	ND<368	N/A	N/A
2,6-Dinitrotoluene	ND<363	ND<318	ND<368	1000	N/A
Flourene	365	ND<318	ND<368	350,000	1,000
Hexachlorocyclopentadiene	ND<363	ND<318	ND<368	N/A	N/A
2-Nitroaniline	ND<908	ND<795	ND<921	430	N/A

Page 24

				NYSDEC TAGM 4046 Soil Cleanup Objective	NYSDEC STARS TCLP Alternative
	LBA TP#1	LBA TP#10	LBA TP#6	to Protect	Guidance
	(0'-2')	(3')	(4')	Groundwater Quality	Value
3-Nitroaniline	ND<908	ND<795	ND<921	500	N/A
4-Nitroaniline	ND<908	ND<795	ND<921	N/A	N/A
4-Nitrophenol	ND<908	ND<795	ND<921	100	N/A
2,4,6-Trichlorophenol	ND<363	ND<318	ND<368	N/A	N/A
2,4,5-Trichlorophenol	ND<908	ND<795	ND<921	100	N/A
4-Bromophenyl phenyl ether	ND<363	ND<318	ND<368	N/A	N/A
Di-n-butyl phthalate	ND<363	ND<318	ND<368	8100	N/A
4,6-Dinitro-2-methylphenol	ND<908	ND<795	ND<921	N/A	N/A
Flouranthene	1900	ND<318	2590	1,900,000	1,000
Hexachlorobenzene	ND<363	ND<318	ND<368	1400	N/A
N-nitrosodiphenylamine	ND<363	ND<318	ND<368	N/A	N/A
Pentachlorophenol	ND<908	ND<795	ND<921	1000	N/A
Anthracene	495	ND<318	ND<368	700,000	1,000
Phenanthrene	1900	ND<318	554	220,000	1,000
Benzidine	ND<908	ND<795	ND<921	N/A	N/A
Benzo (a) anthracene	835	ND<318	1990	3000	0.04
Bis (2-ethylhexyl) phthalate	ND<363	ND<318	ND<368	435,000	N/A
Butylbenzylphthalate	ND<363	ND<318	ND<368	122,000	N/A
Chrysene	856	ND<318	1950	400	0.04
3,3'-Dichlorobenzidine	ND<363	ND<318	ND<368	N/A	N/A
Pyrene	1530	ND<318	2970	665,000	1,000
Benzo (b) flouranthene	954	ND<318	3790	1100	0.04
Benzo (k) flouranthene	1470	ND<318	2610	1100	0.04
Benzo (g,h,I) perylene	580	ND<318	2240	800,000	0.04
Benzo (a) pyrene	919	ND<318	1700	11,000	0.04
Dibenz (a,h) anthracene	ND<363	ND<318	630	165,000,000	1,000
Di-n-octyl phthalate	ND<363	ND<318	ND<368	120,000	N/A
Indeno (1,2,3-cd) pyrene	576	ND<318	2220	3200	0.04

#### LaBella Test Pit Soil Sample Results (continued)

**USEPA Method 8270** 

All sample results and guidance values are listed in ug/kg = pbb

ND = Not Detected

N/A = Not applicable

Bold denotes constituents above NYSDEC Guidance Values

As noted in the table above there were levels of NYSDEC regulated SVOC's detected in the soil samples from LBATP #1 at 0'-2' and from LBATP #6 at 4' that exceed NYSDEC STARS Guidance values for SVOC's. The suite of SVOCS that were detected are the Polycyclic Aromatic Hydrocarbons. These levels and types of SVOC's may be beneath NYSDEC Spill Inactivation Site Specific Risk Based Guidance Values, based on the fact that they all have very low volatilization factors, and some are even solids at ambient temperatures. These risk-based calculations could be completed when more detailed development plans (ie. Final elevations, depth of filling, and future use of this portion of the Site) have been arrived at.

#### Page 25

With the exception of layers of slag, ash, and cinders no other visible contamination, elevated PID readings, or other indications of evidence of impairment were encountered during the soil-boring program.

The analytical data from the shallow characterization samples analyzed for the 8 RCRA Metals is detailed in the table below:

- ---

Haley & Aldrich Soil Boring Sample Results (mg/kg)
8 RCRA Metals (Total)
Table 15

. . . . . . . . .

	HA Boring #102 (0'-2')	HA Boring #107 (0'-2')	HA Boring #109 (0'-2')	HA Boring #110 (0'-2')	HA Boring #111 (2'-4')	HA Boring #112 (0'-2')	HA Boring #114 (2'-4')	HA Boring #116 (2'-4')	HA Boring #121 (0'-2')	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives
Arsenic	3	4.19	10.3	6.19	1.95	52.5	3.91	2.81	5.76	3-12	7.5 or SB
Barium	77.8	23.3	82.6	106	27.8	92.1	245	238	42.8	15-600	300 or SB
Cadmium	0.651	<0.599	1.39	0.7	0.434	1.7	<0.575	<0.39	<1.01	0.1-1	1 or SB
Chromium	8.7	8.6	17.6	12.2	8.3	29.9	5.06	3.75	12.5	1.5-40	10 or SB
Lead	5.04	26.4	129	79	7.51	102	19	<0.389	15.6	*	SB
Mercury	<0.047	<0.066	<0.073	0.173	<0.080	0.169	<0.089	<0.053	<0.0908	0.001-0.2	0.1
Selenium	<0.407	<0.375	<0.534	<0.5	<0.361	1.43	2.65	4.77	<0.522	0.1-3.9	2 or SB
Silver	1.06	1.8	1.94	1.7	1.08	3.23	2.76	2.73	1.25	N/A	SB

\* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range

from 4-61 ppm.

Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

All sample results and guidance values are listed in mg/kg=ppm

N/A - Not Applicable

ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

SB - Site Background

As detailed in the table above shallow soil samples from the boring generally exhibited low levels of the 8 RCRA metals, that are consistent with Eastern USA Background Levels as published in NYSDEC TAGM #4046. One sample exhibited elevated arsenic well above TAGM Cleanup Objectives and background, and two soil samples slightly exceeded TAGM Cleanup Objectives for Cadmium.

The analytical data from the shallow characterization samples analyzed for VOC's by USEPA Method 8260 + STARS is detailed in the table below:

#### Haley & Aldrich Soil Boring Sample Results (continued) USEPA Method 8260

	HA Boring #109 (0'-2')	HA Boring #110 (0'-2')	NYSDEC TAGM 4046 Soil Cleanup Objective to Protect Groundwater Quality	NYSDEC STARS TCLP Alternative Guidance Value
sec-Butylbenzene	ND<10.2	ND<8.07	24,910	100
p-Isopropyltoluene	ND<10.2	ND<8.07	10,570	100
n-Butylbenzene	ND<10.2	ND<8.07	17,620	100
Naphthalene	ND<25.4	ND<20.2	13,000	200

All sample results and guidance values are listed in ug/kg=ppb ND = Not Detected N/A = Not Available Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above shallow soil samples from the soil borings that were analyzed for VOC's by USEPA 8260+STARS did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the shallow characterization samples analyzed for PCB's by USEPA Method 8080 is detailed in the table below:

# Haley & Aldrich Soil Boring Sample Results (ug/L) PCB Analysis (USEPA Method 8080) Table 17

	HA Boring #110 (0'-2')	HA Boring #111 (2'-4')	HA Boring #114 (2'-4')	HA Boring #117 (2'-4')	NYSDEC TAGM 4046 Soil Clean Up Objective to Protect Groundwater Quality
PCB 1016	ND	ND	ND	ND	10,000
PCB 1221	ND	ND	ND	ND	10,000
PCB 1232	ND	ND	ND	ND	10,000
PCB 1242	ND	ND	ND	ND	10,000
PCB 1248	ND	ND	ND	ND	10,000
PCB 1254	ND	ND	ND	ND	10,000
PCB 1260	ND	ND	ND	ND	10,000

All sample results and guidance values are listed in ug/L=ppb

ND= Not Detected

N/A = Not Applicable

Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above shallow soil samples from the soil borings that were analyzed for PCB's by USEPA 8080 did not exhibit levels of the targeted analytes above method detection limits.

#### Page 32

The analytical data from the shallow characterization samples analyzed for SVOC's by USEPA Method 8270 STARS is detailed in the table below:

# Haley & Aldrich Soil Boring Sample Results (ug/kg) USEPA Method 8270 Table 18

					NYSDEC STARS TCLP	NYSDEC TAGM 4046 Soil Cleanup
	HA Boring #109 (0'-2')	HA Boring #110 (0'-2')	HA Boring #111(2'-4')	HA Boring #114 (2'-4')	Alternative	Objectives to Protect Groundwater Quality
Napthalene	585	ND<1590	ND<327	ND<343	200	13,000
Acenaphthene	ND<360	ND<1590	ND<327	ND<343	1000	90,000
Flourene	369	ND<1590	ND<327	ND<343	1000	350,000
Flouranthene	5590	ND<1590	ND<327	ND<343	1000	1,900,000
Anthracene	958	ND<1590	ND<327	ND<343	400	700,000
Phenanthrene	3460	ND<1590	ND<327	ND<343	1000	220,000
Benzo (a)						
anthracene	3480	ND<1590	ND<327	ND<343	0.04*	3,000
Chrysene	4050	ND<1590	ND<327	ND<343	0.04*	400
Pyrene	10,200	ND<1590	ND<327	ND<343	1000	665,000
Benzo (b)						
flouranthene	5240	ND<1590	ND<327	ND<343	0.04*	1,100
Benzo (k)						
flouranthene	2990	ND<1590	ND<327	ND<343	0.04*	1,100
Benzo (g,h,i)					0.044	
perylene	1270	ND<1590	ND<327	ND<343	0.04*	800,000
Benzo (a) pyrene	2980	ND<1590	ND<327	ND<343	0.04*	11,000
Dibenz (a,h)						
anthracene	444	ND<1590	ND<327	ND<343	1000	165,000,000
Indeno (1,2,3-cd)						
pyrene	1260	ND<1590	ND<327	ND<343	0.04*	3,200

All sample results and guidance values are listed in ug/kg=ppb

N/A = Not Applicable

ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table three of the four shallow soil samples from the soil borings that were analyzed for SVOC's by USEPA 8270+STARS did not exhibit levels of the targeted analytes above method detection limits.

One shallow sample from SB #109 exhibited elevated levels of NYSDEC regulated SVOC's above NYSDEC Guidance Values for soils. SB #109 was advanced in the south portion of the Site to the east of River Street along the Genesee River. The general area where SB #109 was advanced consists of a cinder and grass covered area that is used to store boats. The levels of SVOC's in this area are present at levels, which could represent a human health concern during construction activities. This area may warrant further characterization and possible remedial measures and/or engineering controls if future development plans involve this portion of the Site.

This area is designated as Area #4 and is depicted on Figure 9.

Analytical data generated from the Haley & Aldrich shared Soil Boring Study is included as Appendix 6.

# VId. Groundwater Monitoring Wells

#### Fieldwork:

During the shared geotechnical and environmental soil boring program three of the soil borings were converted groundwater monitoring wells. Monitoring well locations were chosen based on the location of REC's from the Phase I ESA and on information that was gathered as a part of the test pitting study.

The location for the three monitoring wells were as follows:

- Location of historical railroad turntable from Phase I ESA; LBAMW #1
- In the area where slag had exhibited a sheen during the test pitting study; LBAMW #2
- Immediately topographically downgradient of former foundary at the Site; LBAMW #3

Monitoring wells were constructed in accordance with the monitoring well methodology section of the report. All of the wells were constructed with 10' screen sections, and were screened to intersect with the top of the water table (approximately 5'-10' below ground surface).

Monitoring well construction diagrams are included as Appendix 5.

Groundwater flow direction in this northern area (north of the east/west CSX Row) of the Site is to the east with a horizontal gradient of 0.028.

The analytical data from the groundwater samples analyzed for the 8 RCRA Metals is detailed in the table below:

Groundwater Monitoring Well Results (mg/L) 8 RCRA Metals Table 19									
	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard					
Arsenic	< 0.005	0.009	0.019	0.025					
Barium	1.11	0.178	0.233	1					
Cadmium	< 0.005	< 0.005	< 0.005	0.01					
Chromium	0.028	0.026	0.036	0.05					
Lead	0.038	0.022	0.029	0.025					
Mercury	< 0.0002	< 0.0002	< 0.0002	0.002					
Selenium	< 0.005	0.015	< 0.005	0.01					
Silver	< 0.010	<0.010	< 0.01	0.05					

All sample results and guidance values are listed in mg/L = ppm

N/A = Not Applicable

ND = Not Detected

#### **Bold** denotes constituents above NYSDEC Standards

#### Page 34

As detailed in the table above, groundwater samples from the three monitoring wells exhibited low levels of the 8 RCRA metals that are generally below the NYSDEC Part 703 Groundwater Standards or exceed the standard only by a very small concentration.

The analytical data from the groundwater samples analyzed for VOC's by USEPA Method 8260 + STARS is detailed in the table below:

Table 20								
	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard				
Bromodichloromethane	ND<2.00	ND<2.00	ND<2.00	50*				
Bromomethane	ND<2.00	ND<2.00	ND<2.00	5				
Bromoform	ND<2.00	ND<2.00	ND<2.00	50*				
Carbon Tetrachloride	ND<2.00	ND<2.00	ND<2.00	5				
Chloroethane	ND<2.00	ND<2.00	ND<2.00	5				
2-Chlorotheyl Vinyl Ether	ND<2.00	ND<2.00	ND<2.00	N/A				
Chloroform	ND<2.00	ND<2.00	ND<2.00	7				
Dibromochloromethane	ND<2.00	ND<2.00	ND<2.00	50*				
1,1-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	5				
1,2-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	5				
1,1-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	N/A				
trans-1,2-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	N/A				
1,2-Dichloropropane	ND<2.00	ND<2.00	ND<2.00	5				
cis-1,3-Dichloropropene	ND<2.00	ND<2.00	ND<2.00	5				
trans-1,3-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	5				
Methylene chloride	ND<5.00	ND<5.00	ND<5.00	5				
1,1,2,2-Tetrachloroethane	ND<2.00	ND<2.00	ND<2.00	5				
Tetrachloroethene	ND<2.00	ND<2.00	ND<2.00	N/A				
1,1,1-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	5				
1,1,2-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	5				
Trichloroethene	ND<2.00	ND<2.00	ND<2.00	N/A				
Vinyl Chloride	ND<2.00	ND<2.00	ND<2.00	2				
Benzene	ND<0.700	ND<0.700	ND<0.700	1.0				
Chlorobenzene	ND<2.00	ND<2.00	ND<2.00	5				
Ethylbenzene	ND<2.00	ND<2.00	ND<2.00	5				
Toluene	ND<2.00	ND<2.00	ND<2.00	5				
m,p-Xylene	ND<2.00	ND<2.00	ND<2.00	5				
o-Xylene	ND<2.00	ND<2.00	ND<2.00	5				
Sytrene	ND<2.00	ND<2.00	ND<2.00	5				
Acetone	ND<10.0	ND<10.0	ND<10.0	50*				
Vinyl Acetate	ND<5.00	ND<5.00	ND<5.00	N/A				
2-Butanone	ND<5.00	ND<5.00	ND<5.00	N/A				
4-Methyl-2-pentanone	ND<5.00	ND<5.00	ND<5.00	N/A				

### Groundwater Monitoring Well Results (ug/L) USEPA Method 8260

Page 35

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
2-Hexanone (MEK)	ND<5.00	ND<5.00	ND<5.00	50*
Carbon Disulfide	ND<2.00	ND<2.00	ND<2.00	N/A
Methyl tert-Butyl Ether	ND<2.00	ND<2.00	ND<2.00	10
Isopropylbenzene	ND<2.00	ND<2.00	ND<2.00	5
n-Propylbenzene	ND<2.00	ND<2.00	ND<2.00	5
1,3,5-Trimethylbenzen	ND<2.00	ND<2.00	ND<2.00	5
tert-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	5
1,2,4-Trimethylbenzene	ND<2.00	ND<2.00	ND<2.00	5
sec-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	5
p-Isopropyltoluene	ND<2.00	ND<2.00	ND<2.00	5
n-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	5
Naphthalene	15.2	ND<5.00	ND<5.00	10

# Groundwater Monitoring Well Results (continued) USEPA Method 8260

All sample results and guidance values are listed in ug/L=ppb ND = Not Detected N/A = Not Available Bold denotes constituents above NYSDEC Guidance Values

\* = Guidance Value

As detailed in the table above groundwater samples from the three monitoring wells that were analyzed for VOC's by USEPA 8260+STARS did not exhibit levels of the targeted analytes above method detection limits. One exception was the compound napthalene in LBA MW #1. Napthalene was detected in this sample at 15 ug/L, however; the level of napthalene in the sample only exceeds the NYS Section 703 Groundwater standard by 5 ug/l. This low level of napthalene detected most likely corresponds to the detected level of napthalene in shallow soils from LBA TP#1, and may be associated with the historical use of this area of the Site as a railroad turntable.

This level of naphthalene will be well below NYSDEC Spill Inactivation Site Specific Criteria. These riskbased calculations can be completed for this area of the Site when more definite redevelopment plans have been arrived at for the Site.

The analytical data from the groundwater samples analyzed for PCB's by USEPA Method 8080 is detailed in the table below:

Phase II Environmental Site Characterization: Soil and Shallow Groundwater Investigation City of Rochester Harbor Ferry Terminal Project LaBella Project No. 99150

Page 36

	LBA MW#1	LBA MW#3	NYSDEC Part 703 Groundwater Standard
PCB 1016	ND	ND	0.1
PCB 1221	ND	ND	0.1
PCB 1232	ND	ND	0.1
PCB 1242	ND	ND	0.1
PCB 1248	ND	ND	0.1
PCB 1254	ND	ND	0.1
PCB 1260	ND	ND	0.1

#### Groundwater Monitoring Well Results (ug/L) PCB Analysis (USEPA Method 8080) Table 21

All sample results and guidance values are listed in ug/L=ppb ND= Not Detected N/A = Not Applicable Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above groundwater samples from the two monitoring wells that were analyzed for PCB's by USEPA 8080 did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the groundwater samples analyzed for NYSDEC regulated Semi VOC's by USEPA Method 8270 STARS is detailed in the table below:

# Groundwater Monitoring Well Results (ug/L) USEPA Method 8270 Table 22

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
Napthalene	11.2	ND<10.0	ND<10.0	10
Acenaphthene	ND<10.0	ND<10.0	ND<10.0	20
Flourene	ND<10.0	ND<10.0	ND<10.0	50
Flouranthene	ND<10.0	ND<10.0	ND<10.0	50
Anthracene	ND<10.0	ND<10.0	ND<10.0	50
Phenanthrene	ND<10.0	ND<10.0	ND<10.0	50
Benzo (a) anthracene	ND<10.0	ND<10.0	ND<10.0	0.002 (ND)
Chrysene	ND<10.0	ND<10.0	ND<10.0	0.002 ND)
Pyrene	ND<10.0	ND<10.0	ND<10.0	50
Benzo (b) flouranthene	ND<10.0	ND<10.0	ND<10.0	0.002 (ND)

# Groundwater Monitoring Well Results (ug/L ) USEPA Method 8270 Table 22 (continued)

	LBA MW#1	LBA MW#2	LBA MW#3	NYSDEC Part 703 Groundwater Standard
Benzo (k) flouranthene	ND<10.0	ND<10.0	ND<10.0	0.002
Benzo (g,h,I) perylene	ND<10.0	ND<10.0	ND<10.0	5
Benzo (a) pyrene	ND<10.0	ND<10.0	ND<10.0	.002(ND)
Dibenz (a,h) anthracene	ND<10.0	ND<10.0	ND<10.0	50
Indeno (1,2,3-cd) pyrene	ND<10.0	ND<10.0	ND<10.0	0.002

All sample results and guidance values are listed in ug/L=ppb N/A - Not Applicable ND = Not Detected Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above groundwater samples from the three monitoring wells that were analyzed for SVOC's by USEPA 8270 did not exhibit levels of the targeted analytes above method detection limits, with the exception of the presence of naphthalene detected in MW#1. Napthalene was detected in MW#1 at a level of 11.2 ug/L.

This low level of Napthalene most likely corresponds to the detected level of Napthalene in shallow soils from LBA TP#1, and may be associated with the historical use of this area of the Site as a railroad turntable.

This exceeds NYSDEC Part 703groundwater standards by 1.2ug/L, but will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the site when more definitive redevelopment plans have been arrived at for the site.

Based on the analytical results from the monitoring well study in the northern portion of the Site there does not appear to be a Site wide impairment or remedial concern with regard to groundwater and future development of the Site.

Analytical data from the groundwater monitoring study is included as Appendix 7.

# VIe. Hand Tool Advanced Test Pit Shallow Soil Sampling Study

### Fieldwork:

In July and August 2000 LaBella Associates P.C. excavated ten shallow test pits, across the southern portion of the Site. These shallow test pit locations were selected to begin characterization of shallow soils along CSX Railroad property and other cinder base parking lot areas. Test pits were advanced at approximate 200'-250' intervals along these areas

LaBella excavated the shallow test pits and gathered information from the test pits in accordance with the Hand tool advanced Test Pits and soil sampling methodology detailed in Section IV of the report.

Page 38

#### **Direct-Push Geoprobe Soil Borings (continued)**

Soil Boring Number	Location	Observation/Evidence of Impairment	Sample and Analytical Method
B -42 (GPMW -8) destroyed	West of CSXROW; East of RG&E Substation;	Medium sand and gravel, cinders to 4' BGS Compacted silt and clay to 14' BGS Saturated at 9'-10' BGS No Evidence of impairment or elevated PID readings	B-42-(0'-4'BGS) 8 RCRA Totals by USEPA 6010;PCB's by USPEA 8080

The analytical data from the geoprobe soil boring samples analyzed for the 8RCRA Metals is detailed in the table below:

#### LaBella Geoprobe Soil Sample Results (mg/kg)

#### 8 RCRA Metals (Total)

Table 26

	B-13 (4'-8')	B-19 (0'-1')	B-20 (0'-1)	2	~				B-23 (1'-4')	B-34 (4'-5.5')	B-41 (0'-4')	B-42 (0'-4')		NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives
Arsenic	4.51	217	20.4	8.88	140	16.5	91.2	55.1	5.57	<0.367	6.97	6.8	3-12	7.5 or SB
Barium	60.6	109	129	61.9	63.1	72.9	179	72.1	93.8	12.7	80.2	59.4	15-600	300 or SB
Cadmium	0.564	<0.508	1.45	<0.480	<0.503	<0.554	<0.558	<0.507	<0.416	13.1	0.655	<.414	0.1-1	1 or SB
Chromium	18.4	9.32	11.8	10.2	15.7	7.41	15.5	7.98	14.2	9.38	17.4	9.44	1.5-40	10 or SB
Lead	73.4	107	177	77.4	91.3	80.9	127	496	10.2	15	14.8	7.51	*	SB
Mercury	0.357	0.164	0.06	<0.054	0.233	<0.045	0.138	1.08	<0.060	0.088	0.06667	<0.0881	0.001-0.2	0.1
Selenium	< 0.502	3.06	1.36	0.664	<0.503	1.31	2.31	6.44	0.542	<0.367	<0.518	<.414	0.1-3.9	2 or SB
Silver	4.7	2.11	3.02	1.49	2.65	<1.11	2.22	2.46	1.22	1.79	1.94	1.21	N/A	SB

\* Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

> All sample results and guidance values are listed in mg/kg=ppm N/A - Not Applicable All test pits are 0"-12" depth ND = Not Detected

Bold denotes constituents above NYSDEC Guidance Values

Page 48

Soil samples selected for laboratory analysis were generally selected at a depth at or in close proximity to the water table. As detailed in the table above the soil samples from the soil borings that were analyzed for VOC's by USEPA 8260 plus STARS did not exhibit levels of the targeted analytes above method detection limits with the exception of chlorbenzene in sample B-18 at a depth of 4'-8' BGS. This compound was detected at a level of 55.1 ug/kg, the corresponding soil cleanup objective as published in NYSDEC TAGM 4046 is 1700 ug/kg. As such, the detection of chlorobenzene in this soil sample does not appear to represent a remedial concern at this portion of the Site.

Additional samples were analyzed for NYSDEC STARS Memo #1 VOC's at several areas of the Site where previous investigation indicated the presence of a gasoline release, and at areas where REC's identified in the Phase I ESA were related to gasoline tanks. The analytical data from the geoprobe soil boring samples analyzed for gasoline related VOC's by USEPA Method 8021 is detailed in the table below:

# LaBella Geoprobe Sample Results (ug/kg) USEPA Method 8021

Table 28

	B-15 (4'-8')	B-25 (4'-8')	B-27 (4'-8')	B-31 (8'-12')	B-33 (4'-8')	B-34 (4'-5.5')	B-36 (4'-5.5')	B-37 (4'-8')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Clean Up Objective to Protect Groundwater Quality
Methyl tert-Butyl Ether	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	200	120
Benzene	ND<11.3	3 ND<8.38	ND<12.3	10.1	ND<10.1	ND<1,330	ND<10.2	ND<10.1	14	60
Toluene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	1,500
Ethylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	5,500
m,p-Xylene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	1,200
o-Xylene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	1,200
Isopropylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	4,000
n-Propylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	14,000
1,3,5-Trimethylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	17,000
tert-Butylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	N/A
1,2,4-Trimethylbenzene	16.4	ND<8.38	ND<12.3	ND<8.33	ND<10.1	32,300	ND<10.2	ND<10.1	100	13,000
sec-Butylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	24,000
p-Isopropyltoluene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	ND<1,330	ND<10.2	ND<10.1	100	10,000
n-Butylbenzene	ND<11.3	3 ND<8.38	ND<12.3	ND<8.33	ND<10.1	2,730	ND<10.2	ND<10.1	100	17,000
Naphthalene	ND<56.7	7 ND<41.9	ND<61.7	ND<41.7	ND<50.3	7,150	ND<50.8	ND<50.7	200	13,000

All sample results and guidance values are listed in ug/kg = ppb ND = Not Detected N/A = Not Available Bold denotes constituents above NYSDEC Guidance Values

Page 51

As detailed in the table above the soil samples from the soil borings that were analyzed for PCB's by USEPA 8080 did not exhibit levels of the targeted analytes above method detection limits.

The analytical data from the geoprobe soil boring samples analyzed for SVOC's by USEPA Method 8270 STARS is detailed in the table below:

LaBella Geoprobe Soil Boring Sample Results (ug/kg)	
USEPA Method 8270	
Table 30	

	B-1 (8'12')	B-4 (8'-12')	B-13 (4'-8')	B-15 (4'-8')	B-25 (4'-8')	B-27 (4'-8')	B-31 (8'-12')	B-40 (8'-12')	NYSDEC STARS TCLP Alternative Guidance Value	NYSDEC TAGM 4046 Soil Cleanup Objectives to Protect Groundwater Quality
Napthalene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	200	13,000
Acenaphthene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	1000	90,000
Flourene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	1000	350,000
Flouranthene	ND<318	ND<335	490	ND<372	ND<348	ND<387	ND<349	ND<352	1000	1,900,000
Anthracene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	400	700,000
Phenanthrene	ND<318	ND<335	460	ND<372	ND<348	ND<387	ND<349	ND<352	1000	220,000
Benzo (a) anthracene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	3,000
Chrysene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	400
Pyrene	ND<318	ND<335	542	ND<372	ND<348	ND<387	ND<349	ND<352	1000	665,000
Benzo (b) flouranthene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	1,100
Benzo (k) flouranthene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	1,100
Benzo (g,h,I) perylene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	800,000
Benzo (a) pyrene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	11,000
Dibenz (a,h) anthracene Indeno (1,2,3-cd)									1000	165,000
pyrene	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	0.04*	3,200

All sample results and guidance values are listed in ug/kg= ppb N/A = Not Applicable ND = Not Detected Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above only one of the soil samples from the soil borings that were analyzed for SVOC's by USEPA 8270+STARS exhibited levels of the targeted analytes above method detection limits.

were flouranthene at 490 ug/kg, phenanthrene at 460 ug/kg, and chrysene at 542 ug/kg. The corresponding soil guidance value as published in NYSDEC STARS Memo #1 is 1000 ug/kg for all three compounds. As such, the detected level of these compounds in this soil sample do not appear to represent a remedial concern at this portion of the Site.

Analytical data generated from the LaBella geoprobe soil boring study are included as Appendix 11.

Phase II Environmental Site Characterization: Soil and Shallow Groundwater Investigation City of Rochester Harbor Ferry Terminal Project LaBella Project No. 99150

Page 53

# VIg. Geoprobe Groundwater Monitoring Wells

# Fieldwork:

During the geoprobe soil boring program eight of the soil borings were converted groundwater monitoring wells. Monitoring well locations were chosen based on the location of REC's from the Phase I ESA and on information that was gathered during previous portions of the investigation.

The location for the eight monitoring wells were as follows:

GPMW# 1. Latta Road ROW Adjacent to Erdle Tool & Die
GPMW# 2. River Street ROW Adjacent to Tapecon
GPMW# 3. River Street ROW Adjacent to Pelican Marina UST Field
GPMW# 4. 490 River Street Adjacent to UST
GPMW# 5. Ontario Park Maintenance Bldg. Adjacent to UST's
GPMW# 6. In between City Warehouses
GPMW# 7. West of CSX ROW/East of RG&E Substation
GPMW# 8. West of CSX ROW/East of RG&E Substation (destroyed)

The locations of the eight monitoring wells are depicted on Figures 2 & 3.

Monitoring wells were constructed in accordance with the monitoring well methodology section of the report. All of the wells were screened to intersect with the top of the water table.

Geoprobe monitoring well construction diagrams are included as Appendix 10.

Groundwater flow direction in the northern area of the Site is to the east with a horizontal gradient of 0.028. Groundwater flow direction in the southern area of the Site is to the east with a horizontal gradient of 0.018.

Groundwater elevations, flow directions, and contours are illustrated on Figures 6&7.

The analytical data from the groundwater samples analyzed for VOC's by USEPA Method 8260 + STARS is detailed in the table below:

## LaBella Geoprobe Groundwater Monitoring Well Results (ug/L) USEPA Method 8260

Table 31

	GP MW-1/B-2 46 Latta	GP MW-2/B-8 465 River Street	GP MW-5/B-29 4650 Lake Ave	GP MW-7/B-39	NYSDEC Part 703 Groundwater Standard
Bromodichloromethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	50*
Bromomethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Bromoform	ND<2.00	ND<2.00	ND<2.00	ND<2.00	50*
Carbon Tetrachloride	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Chloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5

Page 54

	GP MW-1/B-2 46 Latta	GP MW-2 /B-8 465 River Street	GP MW-5/B-29 4650 Lake Ave	GP MW-7/B-39	NYSDEC Part 703 Groundwater Standard
2-Chlorotheyl Vinyl Ether	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
Chloroform	ND<2.00	ND<2.00	ND<2.00	ND<2.00	7
Dibromochloromethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	50*
1,1-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,2-Dichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,1-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
trans-1,2-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
1,2-Dichloropropane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
cis-1,3-Dichloropropene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
trans-1,3-Dichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Methylene chloride	ND<5.00	ND<5.00	ND<5.00	ND<5.00	5
1,1,2,2-Tetrachloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Tetrachloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
1,1,1-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,1,2-Trichloroethane	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Trichloroethene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
Vinyl Chloride	ND<2.00	ND<2.00	ND<2.00	ND<2.00	2
Benzene	ND<0.700	ND<0.700	1.25	ND<0.700	1.0
Chlorobenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Ethylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Toluene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
m,p-Xylene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
o-Xylene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Sytrene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Acetone	109	ND<10.0	ND<10.0	ND<10.0	50*
Vinyl Acetate	ND<5.00	ND<5.00	ND<5.00	ND<5.00	N/A
2-Butanone	50.1	ND<5.00	ND<5.00	ND<5.00	N/A
4-Methyl-2-pentanone	ND<5.00	ND<5.00	ND<5.00	ND<5.00	N/A
2-Hexanone (MEK)	24.6	ND<5.00	ND<5.00	ND<5.00	50*
Carbon Disulfide	ND<2.00	ND<2.00	ND<2.00	ND<2.00	N/A
Methyl tert-Butyl Ether	ND<2.00	ND<2.00	ND<2.00	ND<2.00	10
Isopropylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
n-Propylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,3,5-Trimethylbenzen	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5

# LaBella Geoprobe Groundwater Monitoring Well Results (continued) USEPA Method 8260

Page 55

	GP MW-1/B-2 46 Latta	GP MW-2 /B-8 465 River Street	GP MW-5/B-29 4650 Lake Ave	GP MW-7/B-39	NYSDEC Part 703 Groundwater Standard
tert-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
1,2,4-Trimethylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
sec-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
p-Isopropyltoluene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
n-Butylbenzene	ND<2.00	ND<2.00	ND<2.00	ND<2.00	5
Naphthalene	ND<5.00	ND<5.00	ND<5.00	ND<5.00	10

# LaBella Geoprobe Groundwater Monitoring Well Results (continued) USEPA Method 8260

All sample results and guidance values are listed in ppb=ug/L ND = Not Detected N/A = Not Available Bold denotes constituents above NYSDEC Guidance Values \* = Guidance Value

As detailed in the table above groundwater samples from the four monitoring wells that were analyzed for VOC's by USEPA 8260+STARS in general did not exhibit levels of the targeted analytes above method detection limits.

One exception consisted of the compounds acetone, 2-butanone, and 2-hexanone (MEK) in GPMW #1. None of these compounds are regulated groundwater contaminants in New York State. There are recommended levels for acetone and 2-Hexanone (MEK) for drinking water. Because the groundwater at the Site is not used a source of potable water, and because the compounds present are not otherwise regulated, the presence of these compounds does not appear to represent a remedial concern at the Site.

Benzene was detected in the groundwater sample from GPMW #5 at a level of 1.25 ug/l. This level of Benzene in the sample only exceeds the NYSDEC Part 703 Groundwater standard by 0.25 ug/l. This level of benzene will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the Site when more definite redevelopment plans have been arrived at for the Site.

Additional groundwater samples were analyzed for limited NYSDEC VOC's associated with gasoline releases at several areas of the Site. This limited VOC scan was selected at areas where previous investigation indicated the presence of a gasoline release, and at areas where REC's identified in the Phase I ESA were related to gasoline tanks. The analytical data from the geoprobe monitoring well groundwater samples analyzed for gasoline related VOC's by USEPA Method 8021 is detailed in the table below:

Page 56

# LaBella Geoprobe Groundwater Monitoring Well Results (ug/kg) USEPA Method 8021 Table 32

	GP MW-3/B-17	GP MW-4/B-26	GP MW-6/B-34	NYSDEC Part 703 Groundwater Standards
Methyl tert-Butyl Ether	81.5	ND<2.00	ND<20.0	10
Benzene	ND<0.70	ND<0.70	100.0	1.0
Toluene	ND<2.00	ND<2.00	ND<20.0	5
Ethylbenzene	ND<2.00	ND<2.00	309.0	5
m,p-Xylene	ND<2.00	ND<2.00	90.5	5
o-Xylene	ND<2.00	ND<2.00	22.7	5
Isopropylbenzene	ND<2.00	ND<2.00	79.0	5
n-Propylbenzene	ND<2.00	ND<2.00	190.0	5
1,3,5-Trimethylbenzene	ND<2.00	ND<2.00	55.8	5
tert-Butylbenzene	ND<2.00	ND<2.00	ND<20.0	5
1,2,4-Trimethylbenzene	ND<2.00	ND<2.00	1160.0	5
sec-Butylbenzene	ND<2.00	ND<2.00	33.1	5
p-Isopropyltoluene	ND<2.00	ND<2.00	ND<20.0	5
n-Butylbenzene	ND<2.00	ND<2.00	99.2	5
Naphthalene	ND<5.00	ND<5.00	200.0	10

#### All sample results and guidance values are listed in ug/kg=ppb ND = Not Detected N/A = Not Available Bold denotes constituents above NYSDEC Guidance Values

As detailed in the table above, numerous gasoline constituents were detected in the groundwater sample from GPMW #6. These compounds were detected at levels well above the Part 703-Groundwater Standards as published in NYSDEC STARS Memo #1. This monitoring well was installed to add definition to the petroleum release discovered at this area of the Site during the Bourne Test Pitting Study see Section (VIa).

Methyl tert-Butyl Ether (MTBE) was detected in the groundwater sample from GPMW #3. This level of MTBE is 71.5 ug/L above the Part 703 groundwater standards as published in NYSDEC STARS Memo #1. This level of MTBE will be well below NYSDEC Spill Inactivation Site Specific Criteria. These risk-based calculations can be completed for this area of the Site then more definite redevelopment plans have been arrived at for the Site.

The presence of MTBE in this well suggests a potential release from the nearby Pelican Marina underground storage tank field. This privately owned tank field is located approximately 40 feet to the west and hydraulically upgradient of GPMW #3.

The analytical data from the geoprobe monitoring well groundwater samples analyzed for SVOC's by USEPA Method 8270 STARS is detailed in the table below:

#### Page 57



300 State Street Rochester, New York 14614

# **Appendix 3**

**Boring, Test Pit, and Monitoring Well Logs** 

LABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #1
	E STREET			PROJECT # 99150
lochester	, New York	14614	· · · · · · · · · · · · · · · · · · ·	DATE: 1/11/00
ROJECT	:	Port of Ro	chester	
OCATION	N:	South Te	st Pit for Bourne	ELEVATION:
CLIENT:		City of Ro	chester	
CONTRAC	TOR:	Hickory H	ills	LABELLA REP: DEP
	NT:	Backhoe		
SCALE		SAMPLE	· · · · · · · · · · · · · · · · · · ·	
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			Blacktop	0 ppm no odor
_1			Gravel/Sub-base	
				0 ppm no odor
_2				
				0 anm an odar
3			cinders/fill mixed with foundry slag byproducts (blue with sulfur odor)	0 ppm no odor
4				0 ppm no odor
F				
5				
6			beginning of angled pour	0 ppm no odor
7			tie-back	0 ppm no odor
			groundwater level up to approx 7.5'	
8			concrete deck	0 ppm no odor
9				0 ppm no odor
10		ł	concrete deck	0 ppm no odor
11	ļ			0 ppm no odor
			Test pit terminated at approx. 11'+/-	
12	ł	ł		
13	<u> </u>			
	WATER LEV	1	GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
			4	
		<u> </u>	4	
	l	<u> </u>	4	TEST PIT #1

2

į

LABEI	LLA ASS	SOCIAT	ES, P.C.	TEST PIT #2a
300 STAT	E STREET			PROJECT # 99150
Rocheste	r, New York	14614		DATE: 1/12/00
PROJECT	:	Port of Ro	ochester	
	N:	Bourne 1	fest Pit #2a	ELEVATION:
CLIENT:		City of Ro	ochester	
CONTRAC	CTOR:	Hickory H	lills	LABELLA REP: DEP
EQUIPME	NT:	Backhoe	· · · · · · · · · · · · · · · · · · ·	
SCALE		SAMPLE	· · ·	
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			Blacktop	0 ppm no odor
1			Gravel/Sub-base	0 ppm no odor
2			sill/cinders and misc. fill	
3				0 ppm no odor
4			start of petroleum odor in fill	
				no instrument medium/strong odor
5				
			tie- back/concrete dead man	
6			groundwater at approx 5.5'	no instr stronger petrol. Odor
				on west side of sheet piles
7				
8			test pit terminated at approximately 7.5'-8'	no instrument no odor
9			· ·	
10				
11		ļ		
12		Į		
13	I			
	WATER LEV		GENERAL NOTES	
DATE	TIME	DEPTH	20'x20'x11'	
			4	
			4	
	er completion	I	- · · · · · · · · · · · · · · · · · · ·	TEST PIT #2a

5

ł

LABELI	LA ASS	OCIAT	ES, P.C.	TEST PIT #26		
300 STATE	STREET		PROJECT # 99150			
Rochester,	New York	14614	DATE: 1/12/00			
PROJECT:		Port of Ro	ochester			
OCATION:		Bourne T	est Pit #2b	ELEVATION:		
CLIENT:		City of Ro	chester			
CONTRACT	• .	Hickory H	ills	LABELLA'REP: DEP		
	т:	Backhoe				
SCALE		SAMPLE				
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS		
FEET	NUMBER	RANGE				
			Blacktop	0 ppm no odor		
1				0 mm an adar		
			gravel	0 ppm no odor		
2			silt/cinders			
3			with some gravel	0 ppm no odor		
			foundry slag			
4						
				0 ppm no odor		
5						
6				0 ppm no odor		
7			saturated zone at 6.5-7' but test pit stayed ahead of standing water			
8				slight odor but no screen 0 ppm		
1			test pit terminated at approximately 8.5'			
9						
10						
12		1				
				ł.		
13	ATED : 0 -	1				
			GENERAL NOTES			
DATE	TIME*	DEPIH	20'x20'x11'			
I_	completion	l		TEST PIT #2b		

ì

į

LABE	LLA ASS	SOCIAT	ES, P.C.	TEST PIT #3A
100 STAT	E STREET		PROJECT # 99150	
locheste	r, New York	DATE: 1/12/00		
PROJECT	r:	Port of R	ochester	
	N:	Bourne	Test Pit #3A	ELEVATION:
CLIENT:		City of Ro	pchester	
CONTRAC		Hickory H	lills	LABELLA REP: DEP
EQUIPME	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
				0 ppm no odor
_1			former rail lines still in place under blacktop	
				0 ppm no odor
2				
			fine sand fill	
3				0 ppm no odor
4				
				0 ppm no odor
5			fine sand fill	
6				0 ppm no odor
_7				
8			last 3" +/- of sand is darkly stained (gray/black)	0 ppm no odor
	1		concrete slab	
9			concrete slab	
			concrete slab	
10			concrete slab	
11				
		i		
12				
13		<u> </u>		
	WATER LEVI		GENERAL NOTES	
DATE	TIME*	DEPTH		
		<b> </b>		
• Hrs. afte	or completion			TEST PIT #3

ì

•

ļ

LABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT	#3B	
BOO STATI	E STREET			PROJECT	# 99150	
lochester	r, New York	14614	、	DATE: 1/1:	2/00	
ROJECT	:	Port of Re	ochester			
	N:	Bourne 1	Fest Pit #3B	ELEVATIO	N:	
LIENT:		City of Ro	chester			
ONTRAC	1.	Hickory H	lills	LABELLA	REP: DEP	
	NT:	Backhoe				
SCALE		SAMPLE				
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS		REMARKS	
FEET	NUMBER	RANGE				
			Blacktop	0 ppm	creosote odor	
1			former rail lines still in place under blacktop			
			former/active electrical conduit	0 ppm	no odor	ļ
2						
			layer of concrete			
3				0 ppm	no odor	
			fine sand - light brown			
4						
_				0 ppm	no odor	
_5						
				0		
6				0 ppm	no odor	
7			↓ ↓			
8			last 3" +/- of sand is darkly stained (gray/black)	0 ppm	no odor	
			concrete slab	, pp		
9			concrete slab			
			concrete slab			li li
10			concrete slab			
			14' west of retaining wall			,
11						
12						
13						1
	WATER LEVI		GENERAL NOTES			
DATE	TIME*		20'x20'x11'			
	r completion			TEST PIT	***	

.

. •

ł

ţ

LABEI	LA ASS	SOCIAT	ES, P.C.	TEST PIT #4	
BOO STAT	E STREET		PROJECT # 99150		
Rocheste	r, New York	14614		DATE: 1/12/00	
PROJECT	:	Port of Re	ochester		
LOCATIO	N:	Bourne 1	Fest Pit #4	ELEVATION	
CLIENT:		City of Ro			
CONTRAC		Hickory H	lills	LABELLA REP: DEP	
EQUIPME	NT:	Backhoe	· · · · · · · · · · · · · · · · · · ·		
SCALE		SAMPLE	· · · · · · · · · · · · · · · · · · ·		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS	
FEET	NUMBER	RANGE		0 ppm no odor	
			grass silt and topsoil		
1				0 ppm no odor	
2			fine sand and silt with some foundry slag		
		:			
3				0 ppm no odor	
			· · · · · ·		
4			fine sand and silt with some foundry slag		
				0 ppm no odor	
5					
6			fine sand and silt with some foundry slag	0 ppm no odor	
7					
8			fine sand and silt with some foundry slag	0 ppm no odor	
9					
10					
11					
12					
. 10					
13		l	GENERAL NOTES		
DATE	TIME		GENERAL NOTES		
		ÚCETIN			
	r comptetion	I		TEST PIT #3	

÷.

ł

••

ii ye

7.

		SOCIAT			
300 STATE	STREET				PROJECT # 99150
Rochester,	New York	14614		· · · · · · · · · · · · · · · · ·	DATE: 2/28/00
PROJECT:		Port of R	ochester		
LOCATION	:	Parking L	ot at Railroad turntable		ELEVATION:
CLIENT:					
CONTRAC	TOR:	Hickory H	lills		LABELLA REP: DEP
EQUIPMEN	n:	Backhoe			
SCALE		SAMPLE			
IN	SAMPLE	DEPTH	DESCRIPTION OF MA	ATERIALS	REMARKS
FEET	NUMBER	RANGE			
			blacktop		0 ppm no odor
1			red/black cinders, misc. fill		
					0 ppm no odor
2			medium/coarse bro	wn sand	
3			railroad ties		0 ppm no odor
4					
			water infiltration (perched? Actual water tabl	le?)	0 ppm no odor
5					
6			running sand/GW at 6'	Ļ	0 ppm no odor
7					
8		ļ			
9					
10					
11					
12					
13		l			
¥	VATER LEV	EL	GENERAL NO	TES	
DATE	TIME*	DEPTH	4		
		<u> </u>	4		
		·			
ι 1		1			

£

LABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #2
00 STATE	ESTREET			PROJECT # 99150
lochester	, New York	14614		DATE: 2/28/00
ROJECT		Port of Ro	pchester	
OCATION	4:			ELEVATION
CONTRAC	TOR:	Hickory H	ills	LABELLA REP: DEP
		Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			blacktop	0 ppm no odor
			red silt/sand with gravel	0 ann an adar
			at we have an end	0 ppm no odor
2			gray medium/coarse sand	
			medium gravel	0 ppm no odor
3			perched?/actual groundwater	
4			percieu macidal groundwalch	
				0 ppm no odor
5				
			standing groundwater	
6				0 ppm no odor
7				
		1		
8				
9				
10				
	-			
11			×	
12				
13	L	<u> </u>		
	WATER LEV		GENERAL NOTES	
DATE	TIME	DEPTH	4	
			4	
			4	
	ar completion	<u> </u>	4	TEST PIT #2

\_\_\_\_

ĸ,

•

.

•

ţ

PROJECT # 99150 DATE: 2/28/00 ELEVATION: LABELLA REP: DEP REMARKS 0 ppm no odor 0 ppm no odor
ELEVATION: LABELLA REP: DEP REMARKS 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
LABELLA REP: DEP REMARKS 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
LABELLA REP: DEP REMARKS 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
REMARKS 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
REMARKS 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor
0 ppm no odor 0 ppm no odor
0 ppm no odor
0 ppm no odor
0 ppm no odor
0 ppm no odor
0 ppm no odor

-----

ŧ

ABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #4
00 STATI	E STREET	PROJECT # 99150		
lochester	, New York	DATE: 2/28/00		
ROJECT	:	Port of Ro	ochester	
OCATION	N:			ELEVATION:
LIENT:	·			
ONTRAC	CTOR:	Hickory H	ills	LABELLA REP: DEP
	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		0 ppm no odor
			blacktop	
			white concrete miscellaneous fill	0 ppm no odor
2			some blue slag (sulfur odor)	
3			red silt/sand	0 ppm no odor
4			brown medium sand	
			layer of dense slag	0 ppm no odor
5				
6			standing water	0 ppm no odor
7				
	ļ			
8				
	ļ			
9	-			
10				
11	1	}		
12				
····	1			
13				
WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	]	
· Hm at	ter completio	n		TEST PIT #4

----

1

.

•

ABELI	_A ASS	OCIATE	ES, P.C.	TEST PIT #5
00 STATE	STREET	PROJECT # 99150		
lochester,	New York	DATE: 2/28/00		
ROJECT:				
OCATION:				ELEVATION:
UENT:				
ONTRACT	OR:	Hickory H	ills	LABELLA REP: DEP
	T:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE	·	
			grass	0 ppm no odor
1			silt/sand with some gravel	
				0 ppm no odor
_2			brown sand	
				0 ppm no odor
			ell/cond with come clay	
4			silt/sand with some clay	0 ppm no odor
5				
6				0 ppm no odor
7				0 ppm no odor
8			clay	0 ppm no odor
9			fine sand with some gravel	
				0 ppm no odor
10				
			some sandstone	
11		1	↓ ↓	0 ppm no odor
12				
13				
	VATER LEV		GENERAL NOTES	
DATE	TIME	DEPTH	4	
			4	
	. <u> </u>		4	
l		<u> </u>	4	

---- '

8

•

. .

**ب** 

1

\_\_\_\_

LABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #6
BOO STAT	E STREET	PROJECT # 99150		
locheste	r, New York	DATE: 2/28/00		
PROJECT	:			
	N:			ELEVATION:
DLIENT:				
CONTRAC	CTOR:	Hickory H	lills	LABELLA REP: DEP
	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			grass	
_1			red silt gravel	
			miscellaneous fill	
2			blue sutfur slag	
			miscellaneous fill	
3				
4			termination at 4' due to slag	
5			miscellaneous white slag	
		}	at third location	
6			groundwater with sheen	
7				
8		,		
9				
10		1		
	]			
11	{		· · · · · · · · · · · · · · · · · · ·	
12				
12	1			
13				
	WATER LEV		GENERAL NOTES	
DATE	TIME	DEPTH	-	
		1		
	<u>  .</u>	1	-	
	1	1	1	
	er completion		1	TEST PIT #6

LABE	LLA ASS	SOCIAT	ES, P.C.	TEST PIT #7
300 STAT	E STREET	PROJECT # 99150		
locheste	r, New York	DATE: 2/28/00		
ROJECT	Γ;	Port of Re	pchester	
	N:			ELEVATION:
CLIENT:				
CONTRAC	CTOR:	Hickory H	lills	LABELLA REP: DEP
		Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
		1	grass	0 ppm sulfur odor
1			miscellaneous silt/gravel	
				0 ppm sulfur odor
2			blue slag	
			miscellaneous fill- brick/slag/concrete	
3				0 ppm sulfur odor
		ļ		
4			black layer	
				0 ppm sulfur odor
5			water	
				0 ppm sulfur odor
6	ł			
7			miscellaneous fill	0 ppm sulfur odor
	-			
8	}			
	1			
9				
			•	
10				
	1			
11				
	1			
12				
13	<u> </u>			
WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
• Hra = = =	er comptetio	· · · · · · · · · · · · · · · · · · ·		TEST PIT #7

1

÷

•••

LABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #8
100 STAT	E STREET			PROJECT # 99150
lochester	r, New York	DATE: 2/28/00		
ROJECT	:	Port of Re	ochester	
OCATIO	N:			ELEVATION:
DUENT:				
CONTRAC	CTOR:	Hickory H	lills	LABELLA REP: DEP
	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			grass	0 ppm sulfur odor
1			miscellaneous fill - slag/brick	0 ppm sulfur odor
				0 ppm sulfur odor
2			black fine ash/silt	
				0 ppm sulfur odor
3			slag miscellaneous fill	
4				
-4				0 ppm sulfur odor
5			groundwater	
6				0 ppm sulfur odor
7			miscellaneous fill	0 ppm sulfur odor
8				
9				
10				
11				
12		1		
13	<u> </u>			
	WATER LEV		GENERAL NOTES	
DATE	TIME	DEPTH	4	
	<b> </b>		4	
	<b> </b>	<u> </u>	-	
	L	<u> </u>	4	TEST PIT #8

-----

8

•

.

	LA ASS	OCIAT	ES, P.C.	TEST PIT #9
00 STAT	E STREET		PROJECT # 99150	
locheste	r, New York	DATE: 2/28/00		
PROJECT	:	Port of Re	xhester	
	N:			ELEVATION:
CLIENT:				
CONTRAC	CTOR:	Hickory H	ills	LABELLA REP: DEP
	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			grass	0 ppm sulfur odor
1			sand	0 ppm sulfur odor
2				
•			red slag - miscellaneous fill	0 ppm sulfur odor
3			and blue stag	
4				
				0 ppm sulfur odor
5	ļ			
6			ash	0 ppm sulfur odor
7	]			0 ppm sulfur odor
8	ļ	1		
				0 ppm sulfur odor
9	-			
10			↓ ↓	0 ppm sulfur odor
			standing water (no sheen)	
11	4			0 ppm sulfur odor
12	4			
ļ				
13		_ <b>_</b>	GENERAL NOTES	
			1	
DATE	TIME	DEPTH	4	
	+		-	
			1	
<u> </u>	iter completio	_l	-	TEST PIT #9

\_\_\_\_\_

1

.

•

•

ł

.

Ę

ABEL	LA ASS	OCIAT	ES, P.C.				TEST PIT	#10	
300 STATE STREET								PROJECT # 99150	
Rochester, New York 14614								6/00	
ROJECT		Port of Re	ochester						
OCATION	<b>1</b> :						ELEVATIC	DN:	
LIENT:									
ONTRAC	TOR:	Hickory H	lills				LABELLA	REP: DEP	
	NT:	Backhoe	r						
SCALE		SAMPLE							
IN	SAMPLE	DEPTH		DESCRIPTION	OF MATERIALS			REMARKS	
FEET	NUMBER	RANGE	Attempt 1	Attempt 2	Attempt 3	Attempt 4			
1	• • •		grass	grass	grass	grass	0 ppm	sulfur odor	
1			sand/silt	sand/silt	gravel	silt/fill			
				red and blue slag		red silt/fill	0 ppm	sulfur odor	
2					concrete				
			↓						
3			concrete slab			black cinders/fill	0 ppm	sulfur odor	
				large frags					
4								<i></i>	
							0 ppm	sulfur odor	
5				concrete slab	]	brown sand			
6							0 ppm	no odor	
						un fire cond	0.000	no odor	
7						gray fine sand	0 ppm	no odor	
						very firm			
8						brown sand	1		
							0.000	no odor	
9							0 ppm	no odor	
							0	an odor	
10							0 ppm	no odor	
						no standing water	0.000	no odor	
11						no stanoing water	lo ppin	no odor	
12	ł						0.000	no odor	
	1					bard cood/fill	0 ppm		
13	L	L				hard sand/till GENERAL NOTE			
	<u> </u>	T	WATER L		1		×		
DATE	TIME*	DEPTH	-				1		
			-						
	<u> </u>		-						
	1	<u> </u>							

ţ

LABE	LLA ASS	SOCIAT	S, P.C.	TEST PIT #11
100 STAT	E STREET	PROJECT # 99150		
locheste	r, New York	DATE: 2/28/00		
PROJECT	· .	Port of Ro	chester	
	N:			ELEVATION:
CLIENT:				
CONTRAC	CTOR:	Hickory H	lls	LABELLA REP: DEP
	INT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			grass	0 ppm no odor
1			silt/sand - brown (some debris and concrete slabs)	0 ppm no odor
2				
<u> </u>				
3				0 ppm no odor
4				
				0 ppm no odor
5		ļ		
6				0 ppm no odor
7				0 ppm no odor
				Ì
8				0 ppm no odor
9	-			
10				0 ppm no odor
	1		♥ gray silt (dense) and clay	
11				0 ppm no odor
	1			
12				
				0 ppm no odor
13	<u> </u>		+	
	WATER LEV	/EL	GENERAL NOTES	
DATE	TIME	DEPTH		
	<u> </u>			
	<b> </b>			
	J	1		· · · · · · · · · · · · · · · · · · ·
* Hrs. af	ter completio	n		TEST PIT #11

\_\_\_\_

LABE	LLA ASS	SOCIAT	ES, P.C.	· 4,		TEST PIT #12
	E STREET		PROJECT # 99150			
	er, New York		DATE: 2/28/00			
PROJECT						
	N:					ELEVATION:
CLIENT:						
CONTRA	CTOR:	Hickory H	lills			LABELLA REP: DEP
EQUIPME	ENT:	Backhoe				
SCALE		SAMPLE				
IN	SAMPLE	DEPTH	DESCRI	PTION OF MATERIALS		REMARKS
FEET	NUMBER	RANGE	1st attempt	2nd attempt		
			grass	grass		
1			brick/rock fragments	silt		
				miscellaneous s	slag	
2			miscellaneous fill			
		1				
3	-		blue/red slag			
4				la sinte		
	Í					
5	-		concrete slab	concrete slab		
		1				
6	-					
7						
	4					
8						
9						
	1					
10						
	1					
11						
12		1				
13			<u></u>			
		<u>v</u>	ATER LEVEL	GEN	IERAL NOTES	
DATE	TIME*	DEPTH	1			
		1	_			
	ter completion	-	1			TEST PIT #12

\_

1

.

•

÷

TEST PIT #13 LABELLA ASSOCIATES, P.C. PROJECT # 99150 300 STATE STREET DATE: 2/29/00 Rochester, New York 14614 Port of Rochester PROJECT: ELEVATION: LOCATION: CLIENT: LABELLA REP: DEP CONTRACTOR: Hickory Hills Backhoe EQUIPMENT: SAMPLE SCALE DEPTH DESCRIPTION OF MATERIALS REMARKS SAMPLE IN FEET NUMBER RANGE gravel/sub-base 0 ppm no odor silt/sand with gravel 1 no odor 0 ppm firm/dense hard fine sand 2 0 ppm no odor brick/concrete 3 4 brown sand 0 ppm no odor 5 0 ppm no odor 6 0 ppm no odor 7 black cinders 8 0 ppm no odor 9 0 ppm no odor 10 concrete slab 11 12 13 GENERAL NOTES WATER LEVEL DEPTH DATE TIME\* TEST PIT #13 \* Hrs. after completion

----

LABEL	LA ASS	TEST PIT #14		
300 STAT	E STREET			PROJECT # 99150
Rochester	r, New York	DATE: 2/29/00		
PROJECT	:	Port of Ro	chester	
LOCATIO	N:			ELEVATION:
CLIENT:				
CONTRAC	CTOR:	Hickory H	ills	LABELLA REP: DEP
EQUIPME		Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			gravel/sub-base	0 ppm no odor
11			miscellaneous fill (blue slag, gravel, sand, brick)	
				0 ppm sulfur odor
2				
1				
3				0 ppm sulfur odor
4				
				0 ppm sulfur odor
5				
	ļ			
6				0 ppm sulfur odor
			Ļ	0 ppm sulfur odor
	-		standing water	0 ppm sulfur odor
8	ł			
	1			
9	-			
10	-			
		1		
	4			
				[
12	1			
13	1			
			GENERAL NOTES	
DATE	TIME	DEPTH	1	
			1	
	+		1	
	<u> </u>	1	4	TEST PIT #14

σ.

.

· - ·

9

•

.

÷

•

ABEL	LA ASS	OCIAT	TEST PIT #15	
00 STAT	E STREET	PROJECT # 99150		
ocheste	r, New York		DATE: 2/29/00	
ROJECT	:	Port of Ro	chester	
OCATIO	N:			ELEVATION:
CLIENT:				
ONTRAC	CTOR:	Hickory H	ills	LABELLA REP: DEP
	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
Ì			gravel/sub-base	
			silt/sand gravel (fill)	
2			concrete slab	
3			miscellaneous slag (white)	
			miscellaneous slag (iron)	
4				
5				
6				
1				
7				
8		1		
2				
9	4	1	water	
40				
10	4			
11	1			
12				
	1			
13				
	WATER LEV		GENERAL NOTES	
DATE	TIME	DEPTH	1	
	1	1	1	
	<u> </u>	1	1	
	1	1	1	
	ler completio	1	1	TEST PIT #15

-

	A ASS	OCIAT	ES, P.C.		TEST PIT #16
00 STATE ST		PROJECT # 99150			
Rochester, Ne	ew York 1	DATE: 2/29/00			
ROJECT		Port of Ro	ochester		
OCATION:					
CLIENT:					
CONTRACTO	R:	Hickory H	ills		LABELLA REP: DEP
EQUIPMENT:		Backhoe			
SCALE		SAMPLE			
IN SA	AMPLE	DEPTH	DESCRIPTION	OF MATERIALS	REMARKS
	JMBER	RANGE			
			gravel	fill (	0 ppm sulfur odor
1			silt/sand		
					0 ppm sulfur odor
2		i			
			miscellaneous slag		0 ppm sulfur odor
3					
4					0 ppm sulfur odor
_					
5					
6					0 ppm sulfur odor
7					0 ppm sulfur odor
			↓ ↓		
8			silty-clay (native)	↓ ↓	
					0 ppm no odor
9					
					0 ppm i no odor
10		l			
11					0 ppm no odor
12					
					0 ppm no odor
13		L	•		
WA	TER LEV	EL	GENE	RAL NOTES	
DATE	TIME.	DEPTH	4		
<b> </b>			4		
<u> </u>			4		
<u>⊢</u>			-		
" Hrs. after co	ompletion		1		TEST PIT #16

\_

•

1

.

LABEI	LA ASS	SOCIAT	ES, P.C.	TEST PIT #17
BOO STAT	E STREET			PROJECT # 99150
locheste	r, New York	14614		DATE: 2/29/00
PROJECT	:	Port of Ro	chester	
OCATIO	N:	ELEVATION:		
CUENT:				
CONTRAC	CTOR:	Hickory H	ils	LABELLA REP: DEP
EQUIPME	NT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			grass	0 ppm no odor
1			topsoil/silt medium brown sand/silt	
2				0 ppm no odor
3			gray-blue¦silty clay	
				0 ppm no odor
4				
5	1			0 ppm no odor
6				
				0 ppm no odor
7				
				0 ppm no odor
8				
				0 ppm no odor
9				
				0 ppm no odor
10	-			
11	-			0 ppm no odor
12	{			0 ppm no odor
13	1	 /=	GENERAL NOTES	
DATE	WATER LE	DEPTH	GENERAL NOTES	
DATE	LIME.	DEPTH		
			· · ·	
		-		
	ler completio	- <b>-</b>	1	TEST PIT #17

. 3

1

.

**:** 2

•

•

ı

ABEI		OCIAT	ES, P.C.	TEST PIT #18
300 STAT	E STREET			PROJECT # 99150
Rocheste	r, New York	14614		DATE: 2/29/00
PROJECT	:	Port of R	ochester	
LOCATIO	N:			ELEVATION:
CLIENT:				
CONTRAC	CTOR:	Hickory H	tills	LABELLA REP: DEP
EQUIPME	NT:	Backhoe	·	
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			gravel	
1			silt/sand - gravel	0 ppm sulfur odor
	1			
_2				0 ppm sulfur odor
			miscellaneous slag white, blue and green	
3				0 ppm sulfur odor
4				
5				0 ppm sulfur odor
6				
				0 ppm sulfur odor
7			standing water	
				0 ppm sulfur odor
8				
9				
		1		
10	4			
11				
		ļ		
12	-	]		
13		<u> </u>		
	WATER LEV			
DATE	TIME	DEPTH	4	
		+	4	
	<u> </u>	+	4	
	<u> </u>		4	TEST PIT #18

÷

:

LABE	LLA ASS	OCIAT	ES, P.C.	TEST PIT #19
300 STAT	E STREET			PROJECT # 99150
	r, New York	14614		DATE: 2/29/00
PROJECT	Г:	Port of Ro	ochester	
LOCATIO	N:	ELEVATION:		
CLIENT:				
CONTRAC	CTOR:	Hickory H	lills	LABELLA REP: DEP
EQUIPME	INT:	Backhoe		
SCALE		SAMPLE		
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	REMARKS
FEET	NUMBER	RANGE		
			grass	
1			sil/sand	
2				
3				
			↓ dense slag - white/blue	
4			dense slag - white/blue	
5			standing water - some sheen	
6				
	1			
7				
8		ļ		
9				
	]			
10				
11	1			
12	1			
13		<u> </u>		· · · · · · · · · · · · · · · · · · ·
ļ	WATER LEV	'EL	GENERAL NOTES	
DATE	TIME	DEPTH		
			4	
			4	
	<u> </u>	1	4	
"His. at	ter completion	۱	ł	TEST PIT #19

---- · ′

1

.

-

ABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #20	
00 STATE	STREET			PROJECT # 9915	50
lochester	, New York	14614		DATE: 2/29/00	
ROJECT		Port of Ro	ochester		
OCATION	4:			ELEVATION:	
LIENT:					
ONTRAC	TOR:	Hickory H	lifts	LABELLA REP: 1	DEP
	NT:	Backhoe			
SCALE		SAMPLE			
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS	R	EMARKS
FEET	NUMBER	RANGE			
			grass	0 ppm	no odor
			silt/sand/topsoil	0.000	no odor
			red coarse sand - waste fill	0 ppm	
2				0 ppm	no odor
				o ppm	no odol
3				0 ppm	no odor
.					
4			↓ ↓		,
5			brown silt/fine sand	0 ppm	no odor
6			no slag (rocks)		
				0 ppm	no odor
7					
8				0 ppm	no odor
9					
5				0 ppm	no odor
10					
				0 ppm	no odor
11					
			↓ ↓	0 ppm	no odor
12					
		1			
13		<u> </u>			
	WATER LEV	1	GENERAL NOTES		
DATE	TIME*	DEPTH	4		
			4		
			4		
			4		

### \_

z

.

٨

•

ĩ

TEST PIT #21

LABE	LLA ASS	OCIATI	ES, P.C.	TEST PIT #21	
	E STREET			PROJECT # 9	9150
Rocheste	r, New York	14614		DATE: 2/29/0	<u> </u>
PROJECT	г:	Port of Ro	chester		
LOCATIO	N:			ELEVATION:	
CLIENT:					
CONTRA	CTOR:	Hickory H	ills	LABELLA RE	P: DEP
EQUIPME		Backhoe			
SCALE		SAMPLE			
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS		REMARKS
FEET	NUMBER	RANGE			
			asphalt - 2*	0 ppm	no odor
1			gravel		
			gray medium-fine sand	0 ppm	no odor
2	l			0.000	Creosote odor
	1			0 ppm	Creosole odor
3				0 ppm	Creosote odor
					Creosole Odor
4	4				
5			railroad ties	0 ppm	Creosote odor
	4				
6			concrete slab		
	1	1		0 ppm	Creosote odor
7					
	1				
8					
9					
1					
10	4				
1					
11	4				
1		1			
12	4				
13					
	WATER LEV		GENERAL NOTES		
DATE	TIME*	DEPTH	4		
1	1	1		1	

\_\_\_\_

\* Hrs. after completion

ABEL	LA ASS	OCIAT	ES, P.C.	TEST PIT #22	
00 STATE	STREET			PROJECT # 99	150
ochester,	New York	14614		DATE: 2/29/00	
ROJECT		Port of Ro	ochester		
OCATION	l:			ELEVATION:	
LIENT:					
ONTRAC	TOR:	Hickory H	ills	LABELLA REP:	DEP
	NT:	Backhoe			
SCALE		SAMPLE			REMARKS
IN	SAMPLE	DEPTH	DESCRIPTION OF MATERIALS		nemarks
FEET	NUMBER	RANGE	gravel	0 ppm	no odor
			sit/sand fill		
1				0 ppm	no odor
2					
			miscellaneous slag fragments (blue/white)	0 ppm	sulfur odor
3					
				0 ppm	sulfur odor
4					
5		-		0 ppm	sulfur odor
6			concrete/slag layer - hoe ram	0 ppm	sulfur odor
			standing water with sheen	o ppm	
7					
8					
9					
10					
11				-	
12					
13	L	<u> </u>			
	WATER LEV		GENERAL NOTES		
DATE	TIME*	DEPTH	-		
		+	4		
			1		
	ar completion	_ <b>_</b>		TEST PIT #2	

-

-

1

•

÷

HALEY & CORE BORING REPORT						BORING HA-1 Page 1								
		PORT OF	POCUEST	TEP					Ц.я.	A FILE	NO.	70819-0		<u>vi 1</u>
PROJECT										OJECT I			LENTINE	
LOCATIO	JN	ROCHEST				~~~~	·····			LD REP		R. DED		
CLIENT		LABELLA												
CONTRA		GEOLOGI	C ENTER	PRISE						TE STAI		30-May		
DRILLER	Ł	L. TODD							DA'	TE FINI	SHED	30-May	-00	
Elevation		ft	Datum			Bori	ag Location							
tem		Casing	Sampl	er Cor			Make & Moo	lel					Drill Mud	
Гуре		HAS	SS			2	Truck [	] Tripod	Cat-Hea	d	Hammer 7	Гуре	Ben	tonite
nside Dian	acter (in)	3-1/4	1-3/8				_	Geoprobe	Winch		🗸 Saf	lety	Poly	ymer
lammer W			140		and and the second second		Track (	Air Track	Roller B	it		ughnut	🗸 Nor	)C
Hammer F			30				Skid [	]	Cutting	Head	Casing		Driven	🗌 Spu
	Drilling		Reco	very			Stratum							
Depth (ft)	Rate	Core No.	RQ	2D	Weather	ing	Change		Visual	Classifica	tion and Re	marks		
	(min/ft)	Depth (ft)	(in)	(%)			(ft)			·				
		50.5		~	Į									
ł					<u> </u>									
l								Competent red sand	istone with inter	bedded gra	y sandstone			
[		ļ	3.4/5.0	68	<b> </b>				OUE	ENSTON	E FORMAT	ION		
ł													······	
l	Avg. 3-4				ļ									
[	minutes				<b> </b>									
5														
ļ	per foot				1									
1					<b> </b>				······					
ł			3.45/5.0	69	1			Highly fractured 8.	0 fL to 10.0 ft.		·			
1														
					<u> </u>			······································		·				
ľ					1									
10		60.5												
`														
														<u> </u>
													~~~~	
_ 15_													· · · · · · · · · · · · · · · · · · ·	
				. <u> </u>		·····								
											······································			
					<b>↓</b>						······			·····
					+		{						······	
		<b></b>			1									
					<b></b>		<b> </b>							
20					<u></u>		<u> </u>		·					
				<u> </u>	+		<b> </b>				<u></u>	····· - ···· - ···		
								1						
		<b> </b>		{			<b> </b>	<u> </u>						
					1									
							1	· · · · · · · · · · · · · · · · · · ·						
25		<del> </del>		<u> </u>	-{			<b> </b>						
		<u> </u>		1	1		1							
										·				
		<u> </u>				·	+	1		• • • • • • • • • • • • • • • • • • • •				
					1		1							
							<b></b>							
		1			+		<b> </b>	<u> </u>						
30			I	1										
		ļ		ļ			<b></b>							
	1	1	Water Leve	Data			1		ple ID			Sum		
Date	Time	Elapsed T	ime Bott	om of B	ottom of B	oring	Water (ft)	O Open End T Thin Wall	Rod	Over	burden (Line Cored (lines		50.5 10	
		(hrs)	Casi	ng (ft)	(ft)			U Undisturb	ed Sample	Samp			145	
	1	1					1	S Split Spoo	n Sample		ORING NO		HA-10	2
	1	1						G Geoprobe						-

ĥ

Ĵ

Hali Aldi	EY & NCH		]	TEST	E	BOR	ING	RE]	POF	RT			BORING NO. HA-101a
000		PORTORICS	CUERTER	,						A FILE	NO	70819-	Page 2 of
PROJECT		PORT OF RO								A FILE	-		000 LENTINE
LOCATIO	אוע	ROCHESTER	· · · · · ·				·			ELD REF	-		DRICK
CLIENT	OTOP.	LABELLA A					<u> </u>						
CONTRA		GEOLOGIC I	ENTERAL	1969						TE STA	-	7-Jun-(	
DRILLER	L	L. TODD							DA	TE FINI	SHED 7	7-Jun-(	<i>.</i>
Elevation	251.	8 ft Dat		<u> </u>		ring Locati		ee Boring	Location Pl	an			
Item		Casing	Sampler	<b>Core Barrel</b>		Make & M							Drill Mud
Туре		HSA	SS	NX	1	•	Tripod			ad	Hammer Ty	-	Bentonite
Inside Dian		3-1/4	1-3/8	2		ATV Trank	Geoprobe			Rie	Dou	· ·	Polymer
Hammer W			140			Track Skid	Air Track		Roller		Casing	ghnut f	Driven Sp
Hammer Fr	ull (in) Casing		30 Sample				L-J	╤┛┍╒		, ncau	Casing		
Depth (ft)	Blows per ft	Blows per 6 in	Number & Recovery	& Sample D	epth	Change (ft)			Visua	l Classific	tion and Ren	arks	
0						ļ					·····	· · · · ·	
										Augere	d to 5.0 ft.		
						1							
						<u> </u>				·····	<u> </u>		
						<b></b>							
5			<u> </u>				Loose gray b	rown fine	to medium	SAND, tra	ce silt, organic	s, mois	t.
		5				1							
		3	14"724"		7.0	,				ALL	UVIUM		
						1				·			
										Augered	to 10.0 ft.		
	1					1							
10		4		10.0			Same, except	wet,			····		
	L	4				1							
	1	3	16"/24"		12.0	, <del> </del>	l						· · ·
						+							
	L		·										
	1					+	<b> </b>						
15	<b> </b>	1	S8	15.0		1	Medium den	sé gray bro	own fine to		ND, some coar	se grav	el, wet.
		9 7		_		+			· · · · · · · · · · · · · · · · · · ·		6		
	Į	<del>'-</del> 7	23"/24"		17.0	5	1						
						1							
			<b> </b>			+	<u> </u>						
	<u> </u>												
							<b> </b>						
20	1	11	<u> </u>	20.0		1	Same.				······		
		10					<u> </u>						· · · ·
	L	14	20*724*		22.0	0	<u> </u>						·····
	[												
		<u> </u>	<b> </b>			1	1						
			[										
			<b> </b>				1						
25	1	12	510	25.0		1	Same, excep	t loose.					
	<b> </b>	3					<del> </del>						
		3	20"/24"	<u></u>	27.	0	1						
							+						
		<u> </u>					1		·····				
			<b> </b>										
	Į		+				1						
30		1	1					No					
		Water  Elapsed Time	Level Data		1 01	1	O Ope	Sample n End Rod		Over	burden (Linea	Sum rft)	115
Date	Time	(hrs)	Casing (			Water (fi	T Thia	Wall Tut	æ	Rock	Cored (Linea	rft)	
	1				_			isturbed S			ber of Sample	_	185
J		<u> </u>	<u> </u>				S Spli	t Spoon Si probe	unpie	E	BORING NO.		HA-101a
L	1	1			-	- Longer		·					

#### Form #3000

;

1

5X1.1

1

Pres i

N. SYL

Ĭ

HALEY &	Ч,
ALDRICI	H

## **TEST BORING REPORT**

BORING NO. HA-101a

Page 3 of 5

		Casing	Sampler	Sample	Sample Depth	Stratum				
1	Depth (ft)	Blows per	Blows per 6 in	Number &	(ft)	Change	Visual Classification and Remarks			
		ft		Recovery		(ft)				
j			9	511	30.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet.			
			4				ALLUVIUM			
			4		32.0		ALLUYIUM			
			3	22"/24"	32.0					
1	35			S12	35.0		Same, except very loose.			
			2	312	55.0					
			2	,,,,, <b></b> ,,,,,,,						
			2	23"/24"	37.0					
1										
	10									
	40		1	\$13	40.0		Very loose gray brown fine sandy SILT, little clay, organics, wet.			
		l								
			2							
			3	22"/24"	42.0					
		·····								
1										
			1	<u>514</u>	45.0		Same, except no organics.			
			2		{					
		1		18"/24"	47.0					
			1							
-										
-										
		ł			<b> </b>					
	50	<b>.</b>	-1	<u>\$15</u>	50.0	ļ	Same.			
			2							
			2	l						
		L	2	20"/24"	52.0					
					ļ					
			l		<u>}</u>					
					<u> </u>	<b> </b>	· · · · · · · · · · · · · · · · · · ·			
			1	1	1					
	55				I					
		1	1	S16	55.0		Same.			
	1		2		Į	<b> </b>				
		1	3	20*/24*	57.0	}				
	ł		<sup>3</sup>	24 127	1	t				
	í	1	}		1	1				
	1		1	1						
	1		<u></u>		1	Į				
	1			ļ	<u> </u>	<b> </b>				
	60		+	<u>S17</u>	60.0	<b></b>	Loose gray brown SILT, little clay, trace sand, wet.			
		1		<u> </u>	1	t				
	I		4	1	1	1				
	ŀ	L	4	20"/24"	62.0					
	L	[								
			.J	<b></b>	<b>.</b>	<b>_</b>				
	1	1	J			<b> </b>				
	1			+	+	+				
	I	1				1				
	65	<b></b>		518	65.0	1	Same.			
	1	l I	2	1	1					
	1		2		1					
	1			4 23*724*	67.	4				
	1	1				-{	(Augered to bedrock)			
	1					• {	( 1 M M M M M M M M M M M M M M M M M M			
	1				1					
	1		-			1				
	70-			1						
	/°						FILE NO. 70819-000 BORING NO. HA-101a			
	L				1	1				

Form #3001

	TTAT	71/2						BC	DRING	NO.	
	HALI ALDI			וידי	FCT D		ING REPORT		A-10		
	ALDI	<b>ACH</b>		1.	POT D	UK			-7-11	<b>BIN</b>	
								Page	4	of 5	
)	Depth (ít)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks				
									······		
											_
							(Augered to bedrock - No samples recover	ered)			~
											_
											-
	75				·						
								<b></b>			-
			· · · · · · · · · · · · · · · · · · ·								+
									·		
				······							
	80-										_
	1			·							
											_
	]										-
	1										_
					<u>}</u>						
	85-										_
				···				- <u></u>			
		[									_
;											-
											_
									····· ···		-
	90								<u> </u>		_
		}				<b> </b>					-
	1										-
	i										
	95-										
	I				1	L					-
	1					l					
					1	1					_
		ļ	<u> </u>		<u> </u>	<u> </u>					
					1	1					_
	100	ł	·		+	1			·		
	100 -	T		[	1	ļ					
	1	<b> </b>		<u> </u>		1					_
	Ì								·		_
		1									_
	1			ļ							_
			<u> </u>								
		<b>↓</b>									
				1	1	1					
				<u> </u>							
	1			-		1		······			_
	110 -						FILE NO. 70819-000 BORING N	10.	HA	101a	
	1	1		1	1	1	1				

Form #3001

4

ì

「五弦に

į

HALEY	Ez
ALDRIC	CH

## **TEST BORING REPORT**

BORING NO. HA-101a

Page 5 of 5

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
1						(Encounter Change in drilling conditions)
						(Auger refusal) Bottom of Exploration of 115.0 ft.
	·					
125						
•						
ĩ				······		
- 130 -						
1						
[						
135						
1		<u> </u>		· · · · · · · · · · · · · · · · · · ·		
140	<b> </b>					
1						
1			<b></b>	<b> </b>	ļ	
				Į		
145	<b> </b>					
1						
1					·	
					<b></b>	
1						
	1				<b> </b>	
- 150 -						FILE NO. 70819-000 BORING NO. HA-101a
l						

Ŧ

HALI ALDI	ΞΥ &τ ₹ICH		J	rest	E	BOR	ING R	EP	ORT		BORING NO. HA-102 Page 1 of 2
PROJECT		PORT OF RC	CHESTER						H&A FIL	E NO. 70819	
LOCATIO		ROCHESTER							- PROJEC		LENTINE
CLIENT	213	LABELLA A							– FIELD R		DRICK
	CTOP						· ·		-		
CONTRA		GEOLOGIC	ENTERPR	1323					DATE ST		·
DRILLER	د ـــــــ	L. TODD							DATE FI	NISHED <u>30-Ma</u>	ay-00
Elevation	253.	5 ft Dat	tum Ci	ty	Bo	ring Locatio	See Bo	ring Lo	cation Plan		
ltem		Casing	Sampler	Core Barre	I Rig	Make & M	Iodel CME 5	5 - Tru	ck Mount		Drill Mud
Туре		HSA	SS	NX	$\overline{\mathcal{O}}$	Truck	Tripod	Ø	Cat-Head	Hammer Type	Bentonite
Inside Diam	seter (in)	3-1/4	1-3/8	2		ATV	Geoprobe		Winch	✓ Safety	Polymer
Hammer W	eight (lb)	~	140			Track	🔲 Air Track		Roller Bit	Doughnut	V None
Hammer Fa	all (in)	-	30			Skid	<u> </u>		Cutting Head	Casing	Driven Spu
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 iu	Sample Number Recovery	& Sample I		Stratum Change (ft)			Visual Classi	lication and Remarks	
		28	<u>\$1</u>	0.0			Medium dense bro	wn and	black silty fine t	o coarse SAND, little r	ock fragments,
		19					dry.			- FYI 1	
		16	16"/24"		2.0					FILL	·····
		9	\$2	2.0			Medium dense bro	wn silt	y fine to coarse S	AND, trace coarse grav	el, dry.
		8 6						••••••			
			14"724"		4.0			·			
		5	S3	4.0		·	Same, rock obstruc	tion in	bottom of spoon		
5		3				}					
		3	2*/24*		6.0	6.0				· · · · · · · · · · · · · · · · · · ·	
		1 2	S4	6.0		0.0	Loose gray brown	fine to	coarse SAND, w	et.	
		2 3							A	LLUVIUM	·····
		T	15"/24"		8.0		V-P				
		4	<u>\$5</u>	8.0			Meatum dense gra	y prow	n fine to coarse S	AND, some gravel, we	ι.
		15									
10		17	17"724" S6	10.0	10.0		Very dense brown	fine to	COARSE SAND -	ioist	
		48					Tory deuse brown				······
		58			- 14 - 2					·······	····
		43	2"/24"		12.0	<u> </u>					
			<b></b>								
			<u> </u>			<u> </u>					
<u> </u>		54		15.0		- 15.0	Vary dance	087	ty fine to coor-	SAND, some gravel, n	noist
		1007.4	87 8711		15.9	1	, cry dense gray o			ACIAL TILL	IVIAL.
		<b></b>	ļ								·····
	<u> </u>		<u> </u>			<b>{</b>	<b> </b>				······
	L					<b></b>					······
			Į			<b> </b>					
		<b> </b>	<b> </b>			1					
20	<b> </b>	100/.4		20.0		1	V	-1	8 IX	ND, some gravel. Red s	
		1007.4	S8		.4	<b>{</b>	bottom of spoon,		me to coarse SAI	w, some gravel. Red s	
						1	1		· · · · · ·		
							<u> </u>			·······	
							<b></b>			······	
		L				1					
			<b></b>			+					
25		<u> </u>									······
	1	19 91	<u>\$9</u>	25.0		.	Very dense gray b	rown s	ilty fine to coarse	e SAND, some gravel, r	noist.
		1007.3	12"/18	••••• <u></u>	26.3	s	<u> </u>				·· = ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ·· ··
	I		ļ							·····	
	1					+	<b></b>			······	
						1					····
						4					
20						+					······································
30	1	1				1			·····		· · · · · · · · · · · · · · · · · · ·
	r	Water Elapsed Time	Level Data		m of	T		aple II Rod		Sur verburden (Linear ft)	mmary 50,5
Date	Time	(hrs)	Casing (			Water (fi	T Thin Wal	Tube	R	ock Cored (Linear ft)	10
30-May		2	,			17.5	U Undisturt		npie N	umber of Samples	145
							S Split Spo G Geoprobe		ple	BORING NO.	HA-102
L	1	J	1				T A CONNOC				

۰.

12

-1

I

(12) L. J.

лĺ

STATE N

**U**IE:

	HALI ALDI	EY &= UCH		T	EST B	BOR	ING REPORT	BORING NO. HA-102
)	Depth (ft)	Casing Blows per	Sampler	Sample Number &	Sample Depth	Stratum Change	Visual Classification and Remarks	Page 2 of 2
	Dep (1.7	ft	Blows per 6 in	Recovery	(ft)	(ft)	Very dense gray brown silty fine to coarse SAND, little rock fragn	vents wet
			10	S10 7"/10"	30.0 30.8		GLACIAL TILL	
				(				
	35				24.0		Very dense silty fine to coarse SAND, some gravel, trace clay, we	
			19 60	S11	35.0		Very dense siny line to coalse sarab, some gravel, nace cray, we	·
			100/.3	16"/16"	30.3			
						··		
	40		15	010	40.0		Same.	
			15	S12 10*/11*	40.0			
	45		**	013	12.0	- 45.0 -	Very dense red brown silty fine to coarse SAND, trace clay, moist	
			20 100/.1	S13 6"78"	45.0 45.6		WEATHERED ROCK	
'				· · · · · · · · · · · · · · · · · · ·				
	50		1007.0		50.0		Same, with little clay.	
			1007.5		50.0	. 50.5	Began rock coring at 50.5 ft.	
							Competent, red sandstone with interbedded gray sandstone. QUEENSTONE FORMATION	
	55							
							Highly fractured 58.8 ft. to 60.5 ft.	
	60							
					<b>.</b>	<b> </b>	Bottom of Exploration at 60.5 ft.	
					-	<b> </b>		
	1					<b> </b>		······
	65					<u> </u>		
						<u> </u>		
	70-						FILE NO. 70819-000 BORING N	). HA-102

Hali Aldf	Y&± LICH	-	J	TEST	B	OR	ING RI	EP	ORT		BORING NO. HA-103 Page 1 of
PROJECT LOCATIO		PORT OF RO ROCHESTER	, NEW YO	ORK					-	TTMGR. M. V	-000 ALENTINE
CLIENT CONTRA DRILLER		LABELLA A GEOLOGIC I L. TODD							_	TARTED <u>31-Ma</u> TNISHED <u>31-Ma</u>	·····
levation	253.8	6 ft Dat			_	ing Location	والانتفاد ويتجاجه والمتعاد		ation Plan		
tem		Casing	Sampler	Core Barre	_	Make & N Truck	Tripod	5 True	k Mount Cat-Head	Hammer Type	Drill Mud
lype nside Diam	atan (in)	HSA 3-1/4	SS 1-3/8	NX 1-7/8		ATV	Geoprobe	H	Winch	✓ Safety	Polymer
iammer W			140	1-110		Track	Air Track	Ē	Roller Bit	Doughnut	None
lammer Fa		-	30			Skid	<u> </u>		Cutting Head	Casing	Driven Sp
Depth (ft)	Casing	Sampler Blows per 6 in	Sample Number & Recovery	(ft)		Stratum Change (ft)			Visual Class	ification and Remarks	
- •		8 11 11	<u>\$1</u>	0.0			Medium dense grav	elly c	oarse to fine san	id, little silt, dry. FILL	
		15 13 18	15"/24" S2	2.0	2.0	~ 2.0	Medium dense dari	brow	n coarse to fine	SAND, some gravel, lift	le silt, dry.
į		11 7 9 8	10"/24" S3	4.0	4.0		Same. Moist to wet begin	ning at	5.5 ft.	FILL	
5		4 6 3 5	<u>S4</u>	6.0	6.0		Same, wet.			FILL	
		8 507.0 5	4"718" S3	8.0	7.5		Noted refusal and s Same, except black		ted cobble at 7.5		
_ 10		, 9 4 7 9	6"/24" S6	10.0	10.0		Medium dense bla	ck coa	rse to fine sandy	GRAVEL, little silt, we	t.
		10 15 62 26	\$7	12.0	12.0		Same, except very	dense,	, gray-black.	FILL	
		20 29 9	12"/24"		14.0		Driller noted sulph See Note on Page	2 of 4.	Auger	Refusal at 14.0 ft.	
15								В	oring moved 18	.0 ft. west of original loc	
e											
20				· · · · · · · · · · · · · · · · · · ·							
- 25											
30											
	1	Water	Level Data				Sar	aple I	<u>р</u> т	Su	millary
Date	Time	Water Elapsed Tim (hrs)		of Botte	om ef og (ft)	Water (I	O Onen En	Rod 1 Tube	,	Overburden (Linear ft) Rock Cored (Linear ft) Number of Samples	14 
	<b>†</b>	1	1				S Split Spo G Geoprobe	on San		BORING NO.	HA-103

4.

200

e4 2 - 5

HALI ALDI	EY &= RICH		T	EST	B	OR	ING RI	EP	ORT	[	<u> </u>			$\frac{\text{ORING NO.}}{2 \text{ of } 3}$
mport		PORT OF RO	CHECTER						H&A I		10	70819		
PROJECT									– палі PROJI				LENT	INF
LOCATIO	N	ROCHESTER		<u>к</u>					-		IGK.			
CLIENT		LABELLA A							FIELD				DRICK	<u> </u>
CONTRA	CTOR	GEOLOGIC I	ENTERPRIS	ES					DATE			31-Ma		
DRILLER	Ł .	L. TODD					<u></u>		_ DATE	FINIS	HED	1-Jun-	00	
Elevation	253.8	6 ft Dat	um. City	T	Bori	ng Locatio	B See Bor	ing Lo	cation Plan					
Item	255.0	Casing				Make & M			ck Mount				Dri	ill Mud
Туре		HSA	SS				Tripod	1	Cat-Head		Ham	ner Type	Г	] Bentonite
Inside Diam	eter (in)	3-1/4	1-3/8		۵,		Geoprobe	ň	Winch		নি	Safety	F	] Polymer
Hammer W		-				Frack	Air Track	Ē	Roller Bit		П	Doughnut	ា [	-
Hammer Fa			30		-	Skid		П	Cutting Hea	d b	Casin	£	Dri	ven Spun
FIXMMET FI	Casing	Sampler	Sample		<u> </u>	Stratum							<u> </u>	
Depth (ft)	-	Blows per 6 in	Number & Recovery	Sample De (ft)	pth	Change (ft)			Visual Cla	ssificat	ion an	d Remarks		
		A		<b> </b>			(Offset 18 west of a	rigina	location)					
				t										
		U		ļ										
		G	See Samples	<b> </b>										
			for 0-14 ft.	<u> </u>										
		E	in Boring HA-103	<u> </u>										······································
		R	FIA-103											
5							17.3		1. K 4-		15-122	a alle 1=		
		TI 14		5.0	$\rightarrow$		Medium dense brov	vn blac	* Inc to coar	SC SAN	<u>שון ה, וות</u>	ie silt, ary.		
<b>;</b> 1		7					······			Fli	L		·	
		4			7.0									······································
		A			-+		·			<u> </u>				
		U												
		G E		<u> </u>										·····
10		R		1						6 1				
		9 19		10.0			Dense black brown	tine to	coarse SANI	D, little	sut, sl	ag tragments	, wet.	
1		22	· · · · · · · · · · · · · · · · · · ·	1										
		20		1	2.0									
[				<u> </u>										
					_									
1		- <del>y</del>	58	14.0			Same, except medi	um der	ise.					
15		11		1										
		15 12	14"724"	<u>-</u>	6.0									
<b>i</b> 1		8		16.0			·							
		3	No Recovery	ļ										
		7			8.0		······································							
		8 10	<u>59</u>	18.0	_		Medium dense blac	k brov	vn silty fine to	o coarse	SAN	), wet.		
		10 8		<b> </b>	+					ALLU	VIUM			
20		6	6"/24"	2	0.0									
				+								·····	·	
				1								<u></u>		
				4	f				<del></del>	·····				
I				Į	_								·····	
l		3	510	24.0			Loose gray brown	fine sa	nd SILT, wet.					
25		3		1										
	l	- 3	2"/24"	·	26.0				<u></u>					
]				1										·····
								<u></u>						····
1		<u> </u>		1									·····	
1		L		1										
1		2	511	29.0			Loose gray fine sa	nd SIL	T, some clay.	organic	s, moi	st.		
	L	3 Water	12"/18" Level Data	13	30.5		Sam	ple ID				Spe	amary	
		Elapsed Time		Bottom	<u>न</u> ा	Water (ft)	O Open End	Rod				Linear ft)	7	
Date	Time	(hrs)	Casing (ft)	Boring (	<u>س</u>	••• #10F (II)	I I IIIII WALL					Linear ft)		
			<u> </u>				U Undisturbe S Split Spoo			Numbe				14 102
I	╂─────	<b> </b>	<b>├</b> ────	-{····	-		G Geoprobe			BC	RING	NO.	ł	IA-103a

ALDI	EY & RICH		1.	esi e	OK	ING REPORT	HA-103
epth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and	
		1	S12	34.0		Loose gray fine sand SILT, some clay, organics, moist	
- 35		3	12*/24*	36.0		ALLUVIUM	
			12 /24	50.0			
		2		39.0		Loose gray silty fine to coarse SAND, trace ogranics, m	ioist.
- 40		2 4	23"/24"	40.0			
		4	25 /24	40.0			
		2		44.0		Loose gray brown fine to medium sandy SILT, little cla	ay, organics, moist.
- 45	•	4					
		5	22"/24"	46.0			
				49.0		Cama	
- 50		2 2 3	\$13	49.0		Same.	
		3	22"/24"	51.0			
					·		
- 55		2 2	S16	54.0		Same.	
		3	23"/24"	36.0			
							· · · · · · · · · · · · · · · · · · ·
60		2	\$17	59.0		Same,	
		3	22"/24"	61.0			
				1			
_ 65		4	<u>S18</u>	64.0		Medium dense gray brown fine to medium sandy SILT	f, little clay, organics, moist
		· · · · · ·	22"/24"	66.0			
		7 10	<u>\$19</u>	69.0		Bottom of Exploration	at 71.0 ft.
70		10	17"/24"	71.0		FILE NO. 70819-000 B6	DRING NO. HA-103a

# 1.11.22(s) (s)

.

222.216

HALI	EY &: RICH		1	TEST	B	OR	ING F	REP	ORT	1	1	boring no. HA-104
			-	~							Pag	e 1 of 2
PROJECT		PORT OF RO	CHESTER	<u> </u>			<u></u>		H&A F	TLE NO. 70	819-000	
LOCATIO		ROCHESTER									VALEN	ITINE
CLIENT	217	LABELLA A	· · · · · · · · ·						- FIELD	· · · ·	DEDRIG	
CONTRA	CTOR	GEOLOGIC I					·		-		-Jun-00	······································
DRILLER		L. TODD		·····					-		-Jun-00	
				<u>.</u>	1			Design 1			~~~~	
Elevation Item	254.2	the second s	um Ci Sampler	Core Barrel		ing Locatio Make & N			Truck Mount	· · · · · · · · · · · · · · · · · · ·	ji	Drill Mud
Туре		Casing HSA	Sampler	NX		Truck	Tripod		Cat-Head	Hammer Typ		Bentonite
Inside Dian	teter (in)	3-1/4	1-3/8	2		ATV	Geoprobe		Winch	✓ Safety		Polymer
Hammer W		-	140			Track	📋 Air Track		Roller Bit	Dough		None
Hammer Fa			30			Skid	□		Cutting Head	d Casing		Driven 🚺 Spun
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	& Sample D	epth	Stratum Change (ft)			Visual Clas	ssification and Rema	rks	
									Mudline 19.	0 ft below top of seav	vali.	
							Sunk augers 4.0	ft below	mudline.			
				-								
1												
									······	6 4 10		
		WOR WOR	SI	4.0			Very loose gray	prown si	ity coarse to fi	ine SAND.		
5		WOR			6.0							
		<sup>1</sup>	11*724*		0.0					ALLUVIUM		
1							·····					-
								, <u></u>				
1		WOR WOR	S2	9.0			Same as above.					
10		WOR										
1		WOR	20"/24"		11.0							
1				_								
1												
1								- <del></del>				
		1	<u> </u>	14.0			Loose gray brow	vn sandy	fine to medium	n SILT, organics, wet.		
15	ł	3				···						
1			24"/24"		16.0							
1												
1		3	<u>54</u>	19.0			Same as above.				•····•	
20	4	5									<u> </u>	
		9	20*/24*		21.0							
1			<u> </u>	_								
1		I										
1							<b></b>					
1		2	<u></u>	24.0		<u> </u>	Same as above.					
25	<b> </b>	2 4										
1		6	24"/24"		26.0							
1												
1		-	1			<b> </b>	1					
	}	+	+			<u> </u>						
1	ļ					ļ						
			1			<u> </u>						
	1	Water	Level Data			1		ample II			Summar	<u>у</u>
Date	Time	Elapsed Time	Bottom			Water (ft	O Open I	nd Rod		Overburden (Linear f	<del>1) 31</del>	
		(hrs)	Casing (	ft) Boring	(ft)		<b>3 1</b> 1100 4	'ali Tube urbed San	nple	Rock Cored (Linear 1 Number of Samples	1) <u>-</u>	
	1						S Split S	poon Sam		BORING NO.		HA-104
<b></b>		1	1	-1		1	G Geopre	900				

Form #3000

1. L.L.

1

ł

HAL	EY & RICH		Т	FGT D		ING REPORT		<u>ing n</u> 10
ALDI	RICH		1	esi e	JOK			10 2 of
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remark		
		2 2	S6 24"/24"	29.0 31.0		Loose gray fine to medium sandy SILT, organics, wet. ALLUVIUM		
		4				Bottom of Exploration at 31.0 ft.		
				-				
35								
•								
	}							
40	<u> </u>							
				-				
				1				
1								
1								
45								
i					<b> </b>	· · · · · · · · · · · · · · · · · · ·		
1								
					<u>+</u>			
1								······
50								
							•	
		·	l					
						·		
	L		ļ		<b>.</b>			
55								
					1			
1		1	1					
1								
	ļ		·[		1			
			<b></b>					
1			1					
								• • • • • • • • • • • • • • • • • • •
1								
			1		1			
			1		· [			
65								
					+			
1								
1			1					
70-						FILE NO. 70819-000 BORING		HA-1

Form #3001

÷ 1

• 1

 $v \dot{A}$ 

11

11414	<u>-1/ 0</u>			······································									BORING	NO.
HALI			Г	FEST	R	OR	ING R	EP	ORT	٩		ł	HA-1	105
	den .											-		
		L										وبر المردينين		of 2
PROJECT	7	PORT OF RO	CHESTER						- H&A F		-	70819-00		
LOCATIO	N	ROCHESTER	ς new yo	ORK					PROJE		•	M. VAL		
CLIENT		LABELLA A	SSOCIATE	S					FIELD		-	R. DEDF		
CONTRA	CTOR	GEOLOGIC I	ENTERPRI	SES					DATE	STAR	TED	13-Jun-0	0	
DRILLER		L. TODD							DATE	FINIS	HED	13-Jun-0	0	
									natio- Di					
Elevation	253.9	and the second		City		ing Locatio Make & M			cation Plan				Drill Mud	
Item		Casing		Core Barrel		Truck	Tripod	নি	Cat-Head	····	Hammer T	'vne		ntonite
Туре		HSA	SS	<u>NX</u>		ATV	Geoprobe	l H	Winch		J Safe			ymer
Inside Dian		3-1/4	1-3/8	2			Air Track	片	Roller Bit			ughnut	V Nor	
Hammer W						Skid		Ы	Cutting Head	4	Casing			Spun
Hammer Fr	Casing		Sample		<u>a</u>	Stratum								
Depth (ft)	Blows per		Number & Recovery	1 (10)	epth	Change (ft)			Visual Clas					
									15.0 ft to Mu	idline fi	rom Top of	Scawall		
							-Sunk augers 3.0	n below	mudline-				^	
1										Ţ	······			
1	[	WOR	S1	3.0			Very loose gray b	own sa	ndy SILT, we	t				
	ļ	WOR WOR							.,,	ALLU	VIUM			
L 5 _		WOR	14"/24"		5.0									
													· · · · · · · · · · · · · · · · · · ·	
	<u> </u>	WOR	S2	6.0			Very loose gray b	own si	ty coarse to fi	ne SAI	ND, wet.			
		WOR WOR											<u> </u>	
1		WOR	14"/24"		8.0									
1		WOR	<u>S3</u>	8.0			Same as above.				·····			
	J	WOR WOR												
10		WOR	16"/24"		10.0									
1											•			
1	ļ													
1														
1	<b> </b>													
L 15 _		won		120			Loose gray brown	eilty o	ourse to fine C	AND	vet			
	l I	WOR WOR	<u>S4</u>	15.0			LOUSE BIAY DIOWN	anty C	Salar to this 94					·····
1	<b> </b>	5												
		7	15"724"		17.0									
1														
1														
1														
20	<b>.</b>	<u> </u>		20.0			Loose gray brown	cando	SILT organice	5.				
	ł	2 2		20.0			LOUSS BLAY DIOWI	, easily	Citra i, organica					
	<b> </b>	7	×19-87-		-									
1		<sup>7</sup>	24"/24"		22.0		<u> </u>							
												~~~~		
														·
	<b> </b>													
25	J	WOH	56	25.0		ļ	Same as above.							<u> </u>
	1	2				Į								
1		5	****			ļ								
		7	20"/24"		27.0									
1							1							
1														
1			+				1							
30														
	1	Water	Level Data			1		nple II	,			Sume		
Date	Time	Elapsed Time	e Bottom			Water (ft	O Open En	Rod			urden (Line	arft) 3	2	
DAIC		(hrs)	Casing (i	ft) Boring	; (ft)		T Thin We U Undistur				Cored (Line er of Sampl		- \$	
	- <b> </b>					<del> </del>	S Split Spo				ORING NO		HA-10	05
			1			1	G Geoprob	8	•	L		·•	1.A+I\	

ą

1200.00.00

-

Hali Aldi	EY & R <b>ICH</b>	:	T	EST E	BOR	ING REPORT	BORING NO. HA-105
	Caring Blows per	Sampler	Sample	Sample Depth	Ctt	Visual Classification and Remarks	Page 2 of
	ft	Blows per 6 in	Recovery S7	(ft) 30.0	(ft)	Loose gray brown sandy SILT, organics.	n
		3				ALLUVIUM	
		6		32.0			
						Bottom of Exploration at 32.0 ft.	
35							
	· · ·	a					
							• • • • • • • • • • • • • • • • • • •
- 40					ļ		
		<u> </u>					·····
				·			
- 45							
	<u> </u>						
					ļ		
50							
							······
	L						
	)						
- 55	4						
		<u> </u>		·	<b>}</b>		
					1		
	L						
						· · · · · · · · · · · · · · · · · · ·	
		<u> </u>	1		<b> </b>		
60	<b></b>	+		+	1		
			1				
			1	1	<b></b>		
			<u> </u>		·		
						-	······································
					+		
- 65-	-				1		
				-	1		
		Ţ					
					+		
<b>7</b> ^					1		
70						FILE NO. 70819-000 BORING 1	NO. HA-105

Form #3001

9

24

100

1

**MEC** 

-----

i

HALI	N 8-								<u> </u>				BORING N	
ALDI	RICH_		T	<b>TEST</b>	B	OR	ING R	EP	ORT	٦			HA-10	6
			-									P	age 1 of	2
			OTTOGET						H&A F	11 F >	10	70819-0		
PROJECT		PORT OF RO							- HœA F PROJE		· •••		ENTINE	
LOCATIC	DN	ROCHESTER	÷		••••				-			R. DEDI		
CLIENT		LABELLA A							- FIELD DATES			K. DEDI I-Jun-00		
CONTRA		GEOLOGIC I	INTERPRI	SES			·		-					
DRILLER	L	L. TODD							DATE	r INIS		I-Jun-00		
Elevation	250.7	19 ft Dat	um Cit	у	Bor	ing Locatio	فتقنى اوتتبليش ويسرعه مرعد مرويها فلنن	_	cation Plan					
Item		Casing	Sampler	Core Barrel		Make & M			ck Mount	·			Drill Mud	
Туре		HSA	SS	NX		Truck	Tripod		Cat-Head		Hammer Ty		Bentoni	
Inside Dian		3-1/4	1-3/8	2		ATV	Geoprobe		Winch Roller Bit		Safe	ty ghnut	Polymer	r
Hammer W			140		<u> </u>	Track   Skid	Air Track		Cutting Head	d	Casing	<u>,                                    </u>		Spun
Hammer Fr	Casing		30 Sample		띡	Stratum		ليا		J				
Depth (ft)	Blows per	Blows per 6	Number &	Sample De (ft)	рth	Change			Visual Clas	sificat	ion and Rem	aarks		
	ft	in	Recovery	(11)		(ft)								
- 0 -		Augered			_									
<b>I</b>			<u>\$1</u>	0.5			Medium dense bro	en silty	fine to coarse			fragmen	is, dry.	
		4 7	11*718*		2.0					FI				
		8 '	S2	2.0			Medium dense red	brown	silty fine to co	oarse S.	AND, trace re	ock fragn	ents, moist.	
1		5												
l I		7	12*724"		4.0									
		4	<u>S3</u>	4.0			Medium dense blac	k brov		Se SAN		wet.		
5		17												
		15	16"/24" S4	6.0	6.0		Same, except very	dense						
		20 37					Jaine, except very	401200.						
		31 36	12"724"		8.0								· _ · _ · _ · _ · _ · _ · _ · _	·····
		44	\$5	8.0	0.0		Same.							
		28											·	
		24 12	6"/24"		10.0									
10		5	<u>\$6</u>	10.0			Loose gray brown	fige to	coarse SAND,	little s	ilt, wet.			
		3			÷		<u>.</u>							
		6	8"/24"		12.0		0							
		3	\$7	12.0			Same, except trace	TOCK I	agments.	••••				
		6			14.0					,,,,,,,				
		-6	12"/24" 58	14.0	14.0		Medium dense gra	y brow	n fine to coars	e SAN	D, little silt, v	wct.		
15		12												
		14			16.0									
1														
1		<b> </b>					<u></u>						· · · · · · · · · · · · · · · · · · ·	
1						~~~~~~~								
1													<u></u>	
		4	<u> </u>	19.0			Loose gray fine sa	nd SIL	T, little clay, n	uoist.				
20														
1		2	3"/24"	_	21.0									
1													<u></u>	<u> </u>
1														
1		2	<u>\$10</u>	24.0			Same, except very	loose.			i,i,			<u> </u>
- 25	<b></b>	2					l							
		4	15"/24"		26.0							_,		
1														
1						ļ							_	
1		+	<u> </u>			<u> </u>								
1						I	Loose gray brown	fire to	medium	SILT	little clay or	Capics -	noist	
	1	1	\$11	29.0			LOOSE gray brown	1110 10			way, of	5muve, 11		
		3	17"/24"		31.0									
	1	Water Elapsed Time	Level Data	of Bottom	i of			iple ID Rod	·	Overb	urden (Linea	Sumo rft) 4		
Date	Time	(hrs)	Casing (			Water (ft)	T Thin Wal	Tube	.	Rock	Cored (Linea	rft) 🗄	•	
	1					1	U Undisturb S Split Spoo				er of Samples		35	
			<b> </b>			┨	S Split Spor G Geoprobe		ihie	B(	ORING NO.		HA-106	

ì

i

HALI ALDI	EY &		T	EST B	OR	ING REPORT	BORING NO. HA-106 Page 2 of
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remark	
		-2		34.0		Loose gray brown fine to medium sand SILT, little clay, organic	s, moist,
35		3				ALLUVIUM	
		4	20*/24*	36.0			
		·					
40		1	<u>S13</u>	39.0		Same.	
40		3-4	22"/24"	41.0			
						Bottom of Exploration at 41.0 ft.	4
			·				
			·				
45	Į						
				-			
50							
							<del></del>
					<u> </u>		
55	┫			_			
	<b> </b>				<u> </u>		
				· · · ·			
					1		
					1		
60			ļ		1		
ļ							
1							
•			<b> </b>				
			<b> </b>		<b></b>		
65		-	<u> </u>	-	1		
l							
1			<b>.</b>				
l							· · · · · · · · · · · · · · · · · · ·
			+		-		
70-			1			FILE NO. 70819-000 BORING	NO. HA-106

#### Form #3001

ì

17.1

÷Ĵ

もいくない

1

HALEY &		TEST BORING REPORT									BORING NO.	
ALDI	RICH		']	TES	<b>I</b> . F	SOK	ING K	ĽΡ	OKI.		HA-107	
											Page 1 of	
PROJECT		PORT OF RO						H&A FILE NO. 70819-000 PROJECT MGR. M. VALENTINE				
LOCATION											L VALENTINE	
CLIENT		LABELLA ASSOCIATES GEOLOGIC ENTERPRISES							FIELD REP. R. DEDRICK			
CONTRACTOR			<u> </u>			DATE STARTED 26-May-00 DATE FINISHED 26-May-00						
DRILLER		L. TODD										
Elevation	266.0	the second se		_	the second s	ring Locatio		ring Loce 5 - Truck	ation Plan		Drill Mud	
Item		Casing	Sampler	Core Ba		Make & M Truck	Tripod	_	Cat-Head	Hammer Ty		
Type		HSA 3-1/4		NX 2		ATV	Geoprobe	<u> </u>	Winch	[7] Safety		
Inside Diameter (in) Hammer Weight (lb)			140			Track	Air Track		Roller Bit	Doug		
Hammer Fa			30			Skid	Ō		Cutting Head	Casing	Driven Sp	
Depth (ft) ft		Sampler Blows per 6 in	Sample Number Recovery	& Samp	Sample Depth (ft) (ft) (ft)		Visual Classification and Remarks					
							· · · · · · · · · · · · · · · · · · ·				·····	
		5	<u></u>	0.5		_ 0.5	Medium dense blac	ck brown	fine to coarse	ASPHALT SAND, some grave	el, dry.	
1		<u> </u>			x ×					FILL		
		21 13	7"/18" 52	2.0	2.0		Medium dense bro	wn fine t	o coarse SAN	D, damp.		
		18										
		п	11 16"/24"		4.0							
		<u> </u>	\$3	4.0	4.0		Dense brown black fine to coarse SAND, little silt, brick, damp.					
<u>⊢</u> 5 —		22	30 <b>17"/24"</b> 6.0									
		30 14					Same, except medium dense.					
		11	11									
		12	20"/24"		8.0		Medium dense brown orange fine to coarse SAND, moist.					
		4	<u>\$5</u>	8.0			Medium dense bro	wn orang	e nne to coar	se SAND, moist.		
1		6	1 211 14 74	,	10.0							
10		'	18"/24"		10.0							
1												
											<u> </u>	
		1	56	13.0		13.0 -	Loose brown gray	fine sand	I SILT, trace t	to little clay, trace or	rganics, moist.	
		2 3									·····	
15		3	21"/24"		13.0	4				ALLUVIUM		
						1						
ļ	1					<u> </u>						
1						1						
1	}	2	57	18.0		<u> </u>	Same.				······································	
1												
20		<u> </u>	24"/24		20.0	2	<b></b>					
						+	<u> </u>					
1	<u>├</u>	1				1						
	}		<b> </b>									
1			7 58 23.0			- 23.0 -	Very dense grav h	rown silf	y SAND. som	ie gravel. Pockets o	of brown fine to coarse	
1		35					SAND, wet.					
1		37	22"/24	<b>*</b>	25.	ol	<b> </b>		G	LACIAL TILL		
- 25 -	<b></b>	<u> </u>				1						
1	<b> </b>		<b> </b>									
			ļ			1						
						1						
1		22 24	59	28,0		+	Same.					
1		26					1					
30 -	┫	26	20"/24	<u>,                                     </u>	30.	<u> </u>						
			Level Data				O O THE	nple ID		Overburden (Linear	Summary ft) 49.0	
Date	Time	Elapsed Time (hrs)	Bottom Casing		ottom of oring (ft)	Water (f	T Thin Wal	l Tube	1	Rock Cored (Linear	ft) 5.0	
26-May	1	0.5				18	U Undisturt			Number of Samples		
							S Split Spo G Geoprobe		i¢	BORING NO.	HA-107	

	HALI ALDI	EY & UCH		<b>T</b> ]	EST B	OR	ING REPORT	BORING NO. HA-107 Page 2 of 2
, ener.,	Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Rema	
				······································				
			13	S10	33.0		Very dense gray brown fine silty sand, little gravel, wet.	· · · · · · · · · · · · · · · · · · ·
			39 41				GLACIAL TILL	······································
	35		40	19"/24"	35.0			
-								
			16 26	<u>S11</u>	38.0		Same.	
	40		39 43	17"/24"	40.0			
	40-							
					······			
			25	\$12	43.0		Very dense gray brown fine sandy SILT, trace clay, little grav	el, wet.
			65 [00/.4	16"/17"	44.4			· · · · · · · · · · · · · · · · · · ·
	45							· · · · · · · · · · · · · · · · · · ·
							· · · · · · · · · · · · · · · · · · ·	
		ļ	24	\$13	48.0		Same, except pocket of red brown fine to coarse SAND, some	rock fragments, wet_
			1007.5	11"/12"	49.0	49.0-	Began Rock Coring at 49.0 ft	
	50					<u> </u>		
							Competent red sandstone with interbedded gray sandstone.	
							Competent feu sanusione with micrococco gray santistone.	
						54.0		
							Bottom of Exploration at 54.0	ft.
	55		ļ					
				<b>_</b>		<b> </b>		
			· · · · · · · · · · · · · · · · · · ·		<u> </u>	1		
	1		1		-			
	1					<u> </u>		
	60-	<b></b>						
						1		
				1		<b> </b>		
							~~	
	65	1				-		
	1		- <u> </u>					
						1		
	70							
	1			·			FILE NO. 70819-000 BORIN	G NO. HA-107

j 対応的な j 18.0

i Vicialia

HALI ALDI	EY & E RICH			CC	RE	B	ORI	NG RE	P	ORT	• <u>•</u> •••				A-1	
PROJEC LOCATIO CLIENT CONTRA	אכ	PORT OF ROCHEST LABELLA GEOLOGI	ER, NEW	YORK ATES						H&A F PROJE FIELD DATE S	CT M REP.	GR.	70819- M. VA R. DEI 26-May	000 LENTI DRICK		
DRILLEI		L. TODD								DATE	FINIS	HED	26-Ma	/-00		
Elevation Item		ft Casing	Datum Sampl		Barrel		g Location fake & Mod	cl						Dril	l Mud	
Туре		HAS	Samp		NX	$\bigcirc$	Truck [	] Tripod	Ø	Cat-Head		Hammer			] Benta	
Inside Dian		3-1/4	<u>l-3/8</u> 140		2		ATV [ Track [	Geoprobe Air Track		Winch Roller Bit		ل ب	afety loughnut			
Hammer V Hammer F		-	30				Skid [	]		Cutting Head		Casing		] Driv	_	] Spun
Depth (ft)	Drilling Rate	Core No.	Reco RQ	•	Weathe	ring	Stratum Change			Visual Clas	sificati	ion and H	Remarks			
	(min/ft)	Depth (ft) 49.5	(in)	(%)			(ft)	0-2 ft. Highly fractu			· · · · ·					
	Aug A 8															
	Avg. 4 ft.		1.9/5.0	38				Competent red sand	stone	with interbedd	ed gray	sandstor	1C.			
	minute									QUEENS	TONE	FORMA	TION			
_ 5 _		54.5		······											·····	
												<u></u>		<u> </u>		-
														<u></u>		
L 10_								······				· · ·			······································	
7																
					<u> </u>											
15								······································								
					<u> </u>			······							·····	
					ļ						· · · · ·					
20-					<b> </b>				,		· · · · · · · · · · · · · · · · · · ·					
					1											
					<u> </u>											
1																·····
25_																
1					1									· <u>··</u> ·		
	ļ				<u> </u>											
			<b> </b>		<u> </u>											
			<b> </b>													
1	<u> </u>		Water Leve	Data	1			Sam	le ID					máry		•••••••••
Date	Time	Elapsed I (hrs)	ime Bott	om of B ng (ft)	ottom of I (ft)	Boring	Water (ft)	O Open End T Thin Well U Undisturbe	kod Tube			urden (Liu Cored (lin s				
	ļ							S Split Spoo G Geoprobe			_	RING N	10.		HA-107	

· · · · · · · ·

٠.

.....

}

HALI ALDI	EY & RICH		]	<b>FES</b>	ST ]	B	OR	ING RI	EP	ORT	•			BORING NO. HA-111
PROJECT	n	PORT OF RO	CHESTER	2						H&A F	TLE	NO. 70819		. 01 5
LOCATIO		ROCHESTER						······································		- PROJE				TINE
CLIENT	714	LABELLA A								– FIELD				
	CTOP	GEOLOGIC I						·	<u></u> .	_ FIELD				•••
CONTRA		****	LIVIERER	1010						_ DATE				
DRILLER	<u> </u>	L. TODD								<u></u>	a ar ar ar ar	SHED 23-Ma	.y-00	
Elevation	251.8				_		g Locatio		_	cation Plan			1-	
Item		Casing	Sampler	Core B		_	fake & M			ck Mount		[U	P	rill Mud
Туре		HSA	SS	N)	<u> </u>	/]1 ]∧	ruck TV	Tripod Geoprobe	2	Cat-Head Winch		Hammer Type	_	Bentonite
Inside Diam		3-1/4	1-3/8	2		_	rack	Air Track	片	Roller Bit		Doughnut		Polymer
Hammer W Hammer Fa			140 30			ייי נ si			Н	Cutting Head	d	Casing	_	riven Spun
riammer ra	Casing	Sampler	Sample			÷	Stratum				_			
Depth (ft)	Blows per ft	Blows per 6 in	Number Recover	~ I	ple Depi (ft)		Change (ft)			Visual Clas	ssifica	tion and Remarks		
•			No samp	c		1	0.5					HALT		
		3	SI	1.0		╇	1.0	Loose grav brown	ilty fir	CR ne to coarse SA	USHE	D STONE pocket of black fine	to coa	se
		3	5#712*		2.	.0		SAND, dry.				••••••••		
		5	<u>S2</u>	2.0		Ŧ		Medium dense gray	brown	n fine to coarse		D, little silt, wet.		
						1							·····	
		6	8"/24" 53	4.0	4.	0		Medium denne and	/ hm=	n green (mottle	ed) =1	ty fine to coarse CA	ND #0	me fine
				- 1.0				gravel, wood, mois	L Wat	er in borehole	at 3.9	ty fine to coarse SA ft.		
5		<u>19</u> 21	12"/24"			.0								
1		19	12.724 S4	6.0				Dense gray brown	gravell	y SAND, wet.	Rock	Obstruction in sho		
		19 27				1								
1		32	16"/24"		8	.0								
		21	\$5	8.0		1		Very dense gray br	own fi	ne to coarse SA	AND,	some fine gravel, w	et.	
		24 26				+								
10			20"/24" \$6	10.0	10	.0	10.0 -	Medium dense gray	/ hrow	n fine to coor	- 5 4 1	л <u>р</u>		
1	ł	15				+-		wouldn dense gra	y ∪x0₩	n mie to coars		~~~~~		······
1		14	17"/24"		- 12						ALLI	MUIVI		
1			1/ 724		12		······ •··							
						7								
	1											·		·····
						1								
15		4	57	15.0		╉		Loose gray brown	fine to	coarse SAND	, some	fine to coarse grave	el, moi	st.
ļ		6				1						······································		
Ī	ĺ	3	14*724*			10.								
						1								
	<u> </u>					-+-								. <u>.</u>
	ļ					1								
l	1		<b> </b>			╉		<u> </u>						
20	1	<u> </u>	58	20.0	)	1		Very loose gray br	own fi	ne sand SILT,	wood	natural laminations	in soi	s, moist.
I		2	<u> </u>		· · · · · · ·	+					,	·····		······································
1		2	18"/24		22	2.0								
l						-+								
1						_			· · · · · · · · · · · · · · · · · · ·					
ļ		1												
_ 25 _	]				·			<u> </u>						
	1		<u>\$9</u>	25.0	)	1		Very loose gray bi	owa fi	ine sand SILT,	little	clay, wood.		
1		+ <u>+</u>						<u></u>						
1		1	24"/24		27	7.0		l						
l	1					-		1						
	<u> </u>					_								····
I		+	+			-+		1						<u> </u>
30			1											
	1	Water	Level Data					Sam	ple ID	,		Su		,
Date	Time	Elapsed Time	Bottom	न ह	lottom o		Water (ft	O Open End	Rod			burden (Linear ft)	58.5	
	10	(hrs) 0.75	Casing	(ft) B	oring (fl	9	3.9	T Thin Wall U Undisturb		npie		Cored (Linear ft) ber of Samples	3 145	
23-May	10-	0.75	+	-+-		-+	3,9	S Split Spoo			-	ORING NO.	145	HA-111
	1		1					G Geoprobe			Ľ			na-111

.1

- 1

.;

2

**CLUER** 

i

1.17

TIL	TV P						BORING NO.
	LEY & DRICH		Т	EST B	<b>N</b> R	ING REPORT	HA-111
			<b>⊥</b> .				Page 2 of 3
				·····	Stratum	r	rage 2 of 3
Depth (1	Casing (1) Blows per	Sampler Blows per 6 in	Sample Number &	Sample Depth (ft)	Change	Visual Classification and Remarks	
	ft	Blows per o la	Kecovery		(ft)		wood moint
		2	S10	30.0		Very loose gray brown fine sand SILT, little clay, root structures,	
		2	24"/24"	32.0			
1						ALLUVIUM	
							······
35-			511	35.0		Same, except some clay.	
		2	311				
		2	24"/24"	37.0			
40 -		2	<u>s12</u>	40.0		Very loose gray-green fine sand SILT, root structures, red fine to o	coarse sand in
		2 2				shoe, moist.	
		6	24"/24"	42.0	42.0 -		
						GLACIAL TILL	<u>,</u>
45-		70	<u>\$13</u>	45.0		Dense red brown SILT, little clay, gray green fractured sandstone.	·····
		33 8			- 46.0 —		ى يى خىم بىت بىيە بىت خىت مىت بىت ، 
	ļ	12	16"/24"	47.0			
_							
7							
50							
		1007.2				No Recovery.	
							······································
							·····
55-		1007.2	<u>\$14</u>	55,0	- 55.0 -	Very dense red, brown fractured sandstone, red brown silt, wet.	
		1001.2	2*/3*	55.0			
						WEATHERED BEDROCK	
1			1		[	Auger Refusal at 58.5 ft.; began rock coring.	
					1		
60-					<u> </u>		
				···	1		
					1		······
		<b> </b>					
			-		1		
65							
1	ļ						
1			-		1		
					1		
70					- <b> </b>	FILE NO. 70819-000 BORING N	D. HA-111
1				• •		KILE NO. 70819-000 BORING N	∪. nA-III

.1

1

PU175-144 0

HAL	EY & UCH		T	EST F	ROR	ING REPORT	BORING NO. HA-111
ALDI							Page 3 of
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remark	<u>ع</u>
			······································		·	Competent red sandstone with interbedded gray sandstone.	
						QUEENSTON FORMATION	
					·	Bottom of Exploration at 63.5 ft.	
- 65						Monitoring well installed in adjacent borehole. See Installation for LBA-MW1	Report
						for LBA-MW1	
			· · · · · · · · · · · · · · · · · · ·				
				·			
70							
- 75							·····
						· · · · · · · · · · · · · · · · · · ·	
_ 80							
				-			
85							
	<u> </u>		-				
					1		
<u> </u>	1				1		
_							
95	•{						
#*-						FILE NO. 70819-000 BORING	NO. HA-111

.

1

 $\mathcal{A}$ 

1.1.1.1

Form #3001

								EPORT		Page 1 of
ROJECI		PORT OF R						H&A FI		19-000
OCATIO	N	ROCHESTI	ER, NEW	YORK						VALENTINE
CLIENT		LABELLA	ASSOCIA	TES				FIELD I		DEDRICK
CONTRA	CTOR	GEOLOGIC	ENTERI	PRISE		•				May-00
ORILLER		L. TODD						DATE F	INISHED 23-1	May-00
Elevation			)stum			oring Loca ig Make &			• ••••	Drill Mud
tem		Casing	Sample			Truck	Tripod	Cat-Head	Hammer Type	the second s
Гуре		HAS	SS				Geoprobe	Winch	Safety	Polymer
nside Dian		3-1/4	1-3/8			Track	Air Track	Roller Bit	Doughn	
lammer W			140 30					Cutting Head		Driven Sp
lammer F				and Second and		Strate				
Depth (ft)	Drilling Rate	Core No.	Reco RQ		Weatherin			Visual Class	ification and Remark	cs .
		Depth (ft)	(in)	(%)	t i	(ft)				
		58.5	()							
ļ	5	T					Competent red	sandstone with interbedde	d gray sandstone.	<u> </u>
	5	<u>├</u>	{							
ł								QUEENS	TONE FORMATION	
ļ	3	T								
ł	4	├								
ŀ										
_ 5 _	5	63.5								
					<u> </u>					
ľ										
ļ	<u></u>									
		<u> </u>			<u> </u>	_				
Ì									·····	
ł	~~~~~	<u> </u>			ł					
10					1	_				
		T			<b> </b>					
		<u> </u>								
		<u>├</u>			<u> </u>					
					1			······		
								·········		
		<u>├</u>			1			· · · · · · · · · · · · · · · · · · ·		
15					1					
		<b>↓↓</b>			<b></b>				<u>,</u>	
		<b> </b>								
		ļļ								
					<u> </u>					
20		<u></u> +	······	<u> </u>						
					1					
				<b> </b>						
				ł	1					
				[		_				
				<b> </b>						
	<u> </u>	4			-					
25					ļ					
	- -			<u> </u>					······································	
1	}	1			1					
l										
1										
1		+		1						
[	l			1					· · · · · · · · · · · · · · · · · · ·	
1	1			4						
	·			1						
								Sample III		Summary
		Elapsed T	Water Leve	el Data tom of L	lottom of Bo	rin#!		Sample ID End Rod	Overburden (Linear ft	
Date	Time	Elapsed 1 (hrs)		ing (ft)	(ft)	Wat	er (ft) T Thin		Rock Cored (linear ft)	
									Samples	

,**2**4

Sec. 14

HALEY &		OBSERVATION		Well No. LBA-MW1
	IN	<b>STALLATION</b>	REPORT	Boring No. HA-111*
PROJECT	PORT OF ROCHEST	and the second	territoria de la constante de	I9-000 ALENTINE
CLIENT	LABELLA ASSOCIA			EDRICK
CONTRACTOR	GEOLOGIC ENTERP	RISE	·	/2000
DRILLER	L. TODD		WATER LEVEL	·····
	Not Surveyed ft Not Surveyed	Location North Parking Lot	Guard I Roadwa	-
SOIL/ROCK	BOREHOLE	Type of protect	ctive cover/lock Roa	adway Box
CONDITIONS	BACKFILL		of top of guard pipe/roadway box ground surface	ft
		Height/Depth above/below g	of top of riser pipe ground surface ctive casing:	<u>0.3</u> ft <u>None</u> <u> </u>
-			Type of Seals     Top of Seal (f       Concrete     0.0       Bentonite Seal     1.0	Thickness (ft)           1.0           2.5
Gray brown silty fine to coarse SAND.	Sand/Grout		meter of riser pipe	<u>2.0</u> ia uartz Sand
Some gravel, wood,		Type of 03	ackfill around riserQ	
wet.		Diameter of b	porehole	in
		Depth to top	of well screen	<u> </u>
		Type of scree	SCHE	DULE 40 PVC
			uge or size of openings	0.010 iu
		L2 Diameter	-	2.0 iu
			fill around screen Q	wartz Sand
			tom of well screen	<u>13.0</u> ft
		L3 Bottom of Si		
	(am of Exiporation)	T [Depth of both	tom of borehole	<u>14.0</u> fi
	depth from ground surface in feet)		(Net to Scale)	
		10 ft +	0 ft = 11	3 ft
	3 ft + er Pay Length (L1)		ength of silt trap (L3) Pay	length

ΝŖ

3

<u> 1.675</u>

J

1-123

.....

11.

100 S

HALE	Y&		 ר	<b>T</b>	ST F	30	RI	NG R	EP	ORT		BORING NO HA-11
			1	اشاد م	~ = =							Page 1 of
			auto			<u> </u>				H&A FILE	NO. 70819	
ROJECT	•	PORT OF RO					<u> </u>	<u> </u>	<u>.</u>	PROJECT		ALENTIŃE
OCATIO	-	ROCHESTER							~	-		
CLIENT		LABELLA A								FIELD RE	· · · · · · · · · · · · · · · · · · ·	DRICK
CONTRAC	CTOR	GEOLOGIC I	ENTERPR	ISES						DATE STA		
RILLER		L. TODD						<u> </u>		DATE FIN	ISHED 8-Jun	-00
				City	le.	rine I	ocation	See Br	ring Lo	cation Plan		
levation	270.1		um Sampler	City			e & Mo			ck Mount		Drill Mud
tem		Casing		_		] Truc		Tripod	17	Cat-Head	Hammer Type	Bentonit
урс		HSA	SS	<u> '</u>		] ATV		Geoprobe	1 8	Winch	Safety	Polymer
nside Diam		3-1/4	1-3/8	28.20 A				Air Track	h	Roller Bit	Doughnut	None
Iammer W			140			] Skid	_	]	I H	Cutting Head	Casing	Driven
lammer Fa		 Sampler	30 Sample	in the second		T Str.	atum					
Depth (ft)	Casing Blows per ft		Number Recover	& 3	ample Dept (ft)	ь Ср	ange ft)			Visual Classific	ation and Remarks	
_ 0			- 51	- lo.	0		łc	oose brown silty	fine SA	ND, organics, dry.		· · · · · · · · · · · · · · · · · · ·
		1 2				1	`					
		3			·····							
		3	16*/24 S2	2.	2.0	4	k	ery loose brown	red silt	y fine to coarse SA	ND, little rock fragm	ients, slag, dry.
		2		-12		1						
		2									FILL	
		2	14"724 No	4.	4.	<b>Ч</b>	s	No Recovery				
5			Recover									
			2"/24"		6.	<del>.</del>						
		+'	<u>2724</u> S3	6				oose brown red	ilty fin	e to coarse SAND,	little rock fragments	, slag, dry.
		5				1						
		4	15"/24	n	8.	0						
		4 4	54	8	.0	-	t	ame.				
		1007.4	4"/24"		8.	9				Ohetrui	tion at 8.3 ft.	
	1											
10	<b> </b>		1					N		with Blind sugar	d to 10.0 ft. and hit a	moer refusal again
								Note: Moved 4.0	n. 10 s ain 10 f	) ft. south of second	boring. See Boring	HA-113a.
	1	<u> </u>	<b> </b>									
		<u> </u>	1									
	ļ		<u> </u>					<u></u>				
						1						
15	<b>.</b>		·{									
						1						
	[		<b> </b>									
	<b> </b>		+			_						
			1									
	}					1-						
20			1		·····							
	]		4									
	<u> </u>							·······				
	L											
		<b> </b>										
	<b> </b>	+	+									
25	┫					$\pm$						
											<u></u>	
Į											····	
1										·····		
			-		·							
1								<b> </b>				
30								<b></b>				
									mple	<u> </u>		ummery
ļ		Flanged Tin	ar Level Da		Bottom					0	erburden (Linear ft)	27.0 ft.
Date	Time	(hrs)	Casing		Boring (f	1 1 1	ater (ft	T Thin W	all Tub	e Ro	ck Cored (Linear ft)	
								U Undistu			mber of Samples	85
								S Split Sp G Geopro		mpre	BORING NO.	HA-113
1	1	1	1			1.		I a gropio				

10-1-12

j

11 - H

HALE	Y &			ГСТ	D		NCI	) FD	ORT		BORING NO. HA-113a
ALDR			T	1712 1	D		TIO 1				Page 2 of 2
		DODT OF DO	CURRETER						H&A FIL	E NO. 7091	9-000
PROJECT		PORT OF RO		NV					- PROJEC		ALENTINE
OCATIO	-	ROCHESTER							– FIELD R		EDRICK
CLIENT		LABELLA AS									·····
CONTRAC	•	GEOLOGIC E	NTERPRIS	ES					DATE ST		
DRILLER		L. TODD							DATE FI	NISHED 8-Jur	1-00
levation	270.1	ft Dati	um City		Bori	ng Location	1 Se		ocation Plan		
tem		Casing	Sampler (	Core Barrel		Make & M	odel Cl	1E 55 - Tri			Drill Mud
Гуре		HSA	SS	NX		-	] Tripod	0	Cat-Head	Hammer Type	Bentonite
nside Diam	eter (in)	3-1/4	1-3/8	2			Geoprobe	니므	Winch	Safety	Polymer
lammer We	eight (lb)	-				rack [	Air Track		Roller Bit	Doughnur Continu	
lammer Fs		-			<u> </u>	Stratum			Cutting Head	Casing	Driven Spu
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Do (ft)	epth	Change (ft)			Visual Classi	fication and Remark	S
- 0											
ľ	<u> </u>				_				(Blind a	ugered to 10.0 ft.) Foring HA-113	
ŀ											
l					_						
ŀ											
5											
ĺ											
					$\rightarrow$						
				_							
					-+						
10		1	<u>S5</u>	10.0			Loose brown	red silty fit	ae to coarse SAN	D, little rock fragment	s, slag, moist.
		2 3								FILL	
		3	3"/24"		12.0						
		<b> </b>					- <u>-</u>				
15				120			(Slag obstruc	tion in spoo	on)		
		7	<u>\$6</u>	13.0							
	h	<u> </u>									
		14	1"/24"		17.0						
							L				· · · · · · · · · · · · · · · · · · ·
			ļ								
			<u> </u>	-							
20		3	- \$7	20.0		20.0	Very dense o	ray brown	silty fine to coars	c SAND, some gravel	pockets of clayey
	1	14			<u>.</u>		silt, moist.				······································
		36	22*724*		22.0				GI	ACIAL TILL	
	<b> </b>	+ <sup>20</sup>	22 124"		22.0		[				
			<b>_</b>								
									······································		
			1	1							
25	<b> </b>	30	58	25.0			Same as abo	vc.		<u></u>	
		76									
		98	22"/24"	27.0	,		<b> </b>				
	<b> </b>	1007.3					1		Bottom of	Exploration at 27.0 ft	
			1				<b> </b>		······································		
1			+								
		·					<u> </u>				
30							<u> </u>				
	i				_	_	the second s				
			Level Data			1		Sample I	D		Summary 27 0 A
Date	 Time	Elapsed Tim	e Bottom o			Water (ft	T Thi	n End Rod Wall Tub	c [	Overburden (Linear ft) Rock Cored (Linear ft)	27.0 <del>R</del> .
Date	Time					Water (fi	T Thin U Und	n End Rod	c li umpic l	Overburden (Linear ft)	27.0 A.

]

è,

: .)

12542

1

1

LIALE	V.S.									~		1		RING	
Hale Aldr	ICH		<b>-</b>	ГE	ST ]	B	OR	ING ]	REP	ORT		ļ	HA	4-1	14
			-				_					ł	Page	1 0	f 2
ROJECT		PORT OF RO	CHESTE	R						H&A FI	LE NO.	70819-			
ROJECI OCATIO		ROCHESTER	_							PROJEC	T MGR.	M. VA	LENTIN	Е	
UCATIO LIENT		LABELLA A					<u> </u>			FIELD F	ХЕР.	R. DEI	ORICK		
CONTRA		GEOLOGIC I			;					DATE S	TARTED	25-Ma	y-00		
RILLER		L. TODD								DATE F	INISHED	25-Ma	y-00		
				City			ing Locatio	n 9-	e Boring I	ocation Plan					
levation	261.9		Sampler	_			ing Locatio Make & N		AE 55 - Tr				Drill	Mud	
		Casing HSA	Sampler	1				Tripod	Ø	Cat-Head	Hammer			Bento	
ype aside Diam	eter (in)	3-1/4	1-3/8	<del> </del>	2	_		Geoprobe		Winch		afety		Polyr	
ammer W		-	140					📋 Air Track		Roller Bit		oughnut		None	
ammer Fs		-	30			<u>]</u> :	Skid	<u></u>		Cutting Head	Casing		Drive		Spur
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sampl Number Recover	&	Sample Dep (ft)	th	Stratum Change (ft)	_		Visual Class	ification and I	Remarks			
_ 0				_	50	1		Medium dens	brown sa	ndy SILT, brick,	d.v.				
		<u> </u>	<u>S1</u>		0.0	-		ucits							
	·····	12	6"/24'			.0					FILL				
		6	6"/24 S2		2.0			Medium dens	e brown bla	ack sandy SILT,	brick, slag, dry				
		7 3	ļ			4									
			8"/24			.0									
		8	53		4.0	4		Same.							
- 5		1.5	1												
		35	10*/24 S4		6,0	5.0	<u> </u>	Medium dens	e brown bl	ack silty SAND,	brick, slag, dry				
		22		<u> </u>											
		16	12"724	(m		3.0					·				
		12	S5		8.0			Same, except	some rock	fragments.					
		17				-		<b> </b>							
10			9"724			5.0		Concrete Obs	truction -						
	]	100/.3	56		10.0			(offset 6' sout	h of initial	location, see log	HA-114a)				
								ļ							
	ļ														
			<b> </b>					·							
			1												
15	<b> </b>		+	{				<u> </u>							
	L		1					ļ							
												· · · · · · · · · · · · · · · · · · ·			
								Į							
	<b> </b>							1							
			1					<b> </b>							
			+					1				· · · · · · · · · · · · · · · · · · ·			
20	1				ļ										
					<u> </u>		<u> </u>				·····				
			1		[		ļ								
					<b> </b>		<b> </b>	1							
		-			<b> </b>		1	1							
					<b> </b>		<u> </u>	-[					·····		
<u> </u>					1		1								
					1										
					<b>_</b>										
					1										
					+										
					1										
30															
			er Level Di	.ta					Sample		Distant in a		mmary 35.0	_	
Date	Time	Elapsed Tin			Bottom		Water (		in End Rod n Wall Tub		Overburden (L Rock Cored (L		25.0		
		(hrs)	Casin	<b>r</b> (11)	Boring	U)			listurbed S	ample	Number of San		105		
									it Spoon Sa	umple	BORING	NO.	I	IA-11	14
	1	1	-				1	G Geo	probe						

1

			1		. D		ING		<u>v</u>		-	HA-1
									H&A FI		70819-0	
PROJECT	-	PORT OF RO								CT MGR.		ENTINE
LOCATIO	-	ROCHESTER										
CLIENT		LABELLA AS							_ FIELD		R. DED	
CONTRA	CTOR	GEOLOGIC E	ENTERPR	ISES						TARTED	25-May	
DRILLER		L. TODD							DATE F	INISHED	25-May	-00
Elevation	261.9	2 ft Dat		City	Bor	ing Locatio	u 9	See Boring L	ocation Plan			
Lievation	201.9	Casing	Sampler	Core Barro	_	Make & M		CME 55 - Tn				Drill Mud
		HSA	SS	NX			Tripod	10	Cat-Head	Hammer	Туре	Ben
Type	aton (im)	3-1/4	1-3/8	2			 Geoprob	×   🗍	Winch	I S	afety	Poly
Inside Diam Hammer W			140				Air Trac		Roller Bit		Doughnut	✓ Non
Hammer W			30		100	Skid	Ē	10	Cutting Head	Casing	[	] Driven [
rismmer Fa	Casing	Sampler	Sample		<u></u>	Stratum						
Depth (ft)	Blows per ft		Number Recover	& Sample (ft		Change (ft)			Visual Class	sification and l	Remarks	
									Blind	Augered to 12.0	A.	
			·						(See B	oring Log HA-1	14)	
5												
1												
							·····					
												<u></u>
	1		<b> </b>			<u>├</u>						
- 10 -												
	ļ		<b> </b>									
1	1	<u> </u>							lue gravelly SA	ND also mini		
		20 97	<u>\$7</u>	12.0	<u></u>		Very dense	gray black b	iue graveny SA	ND, stag, wel		<del> </del>
1		90								FILL		
		29	15"/24 S8	14.0	14.0	14.0	Medium de	nse grav bro	wn clayey SILT	moist.		
		3 5					Median	Let gruy ore				
- 15		8	1210	<b>.</b>	16.0					ALLUVIUM		
1		12	16"/24		10,0							
1	[		<b> </b>				<b> </b>					
	<u> </u>	<u> </u>					1					
1	L		59	19.0		19.0 -	Medium d	ense brown e	ilty fine to coars	c SAND, some	gravel, wet	
			- 37			+						
20	1	20				d	l					
ľ		21	18"/24	<u>'</u>	.21.0	<del>' </del>	1		7	<b>GLACIAL TILI</b>	, <u> </u>	
1			1			1	1					
1			4				<b></b>					
1			1						· · · · · · · · · · · · · · · · · · ·			
1							Very dana	e grav hrown	fine to coarse S	AND, some or	ivel, wet	
1	1	87	S10		24.	9	T Gy ucits	- Bray Drown				
25	•					1	1		Bottom	of Exploration a	ut 25.0 ft.	
1										. <u>.</u>		
1	1					1			ed in completed	borchole. See	Installation	Report for
1						1	LBA-MW	3.				
		-				+	- <b> </b>					
			-		·	-	1					
1						_						•••••
1												
30					-			Sample	IN THE REAL		Sann	umary
30			r Level Dat							Overhundan 7		
30 Date	Time	Elapsed Tim	e Botton	n of Bot	tom of ing (ft)	Water (I	<sup>0</sup> T T	pen End Rod hin Wall Tub	e e	Overburden (L Rock Cored (L	incar ft) incar ft)	25
	Time			n of Bot	tom of ing (ft)	Water (f	0 T T U U	pen End Rod	e ample		incar ft) incar ft)	25

}

•••

**1** 

HALEY &		BSERVATION		Well No. LBA-MW3 Boring No.
	IN	STALLATION	REPORT	HA-114a
ROJECT	PORT OF ROCHESTE			9-000
OCATION	ROCHESTER, NEW Y	DRK		ALENTINE
CLIENT	LABELLA ASSOCIAT			EDRICK
CONTRACTOR	GEOLOGIC ENTERP	SE	DATE INSTALLED 5/25 WATER LEVEL	/2000
RILLER	L. TODD		······	
Ground EL		cation North Parking Lot	Guard H	
L Datum	Not Surveyed			• 
SOIL/ROCK	BOREHOLE	Type of prote	ective cover/lock Roa	adway Box
CONDITIONS	S BACKFILL			
			a of top of guard pipe/roadway box ground surface	1
			a of top of riser pipe ground surface	<u> </u>
		Type of prote	ective casing:	None
		Length	-	f
		Inside Dia	ameter	i
		Depth of both	tom of guard pipe/roadway box	<u> </u>
			Type of Seals Top of Seal (f	t) Thickness (ft)
			Concrete 0.0	1.0
			Bentonite Seal 1.0	12.0
Gray brown silty		Type of riser	r pipe:	PVC
SAND, slag, brick	Bentonite/	Inside dia	ameter of riser pipe	2.0i
	Quartz Sand	Type of h	packfill around riser Ben	tonite Chips
		Diameter of	borchole	4-1/4
		Depth to top	o of well screen	15.01
		Type of scre	enSCHE	DULE 40 PVC
		Screen g	auge or size of openings	0.010
		L2 Diameter	r of screen	2.0
		Type of bac	kfill around screen Q	uartz Sand
		Depth of bo	ttom of well screen	25.0
		L3 Bottom of S	lilt trap	
			itom of borehole	25.0
	nttom of Exiporation)			
(Numbers refer t	to depth from ground surface in feet)	10 ft +	<u>(Net te Scalc)</u> 0 ft = 24	.7 ft
	14.7 ft +		•	length

.

ļ

ł

Saught 1

Hali Aldi	EY & RICH		J	ГЕ	ST	B	BOR	INC	<b>F RI</b>	EP	ORT				BORING	
		PORT OF RO	CUECTET		<u> </u>						H&A FI	LEN	NO. 7081	9-000		
PROJECT		ROCHESTER									PROJEC			ALEN	TINE	
LOCATIC	11	LABELLA A							· · ·	<u></u>	FIELD I			EDRIC		
CLIENT	CTOP	GEOLOGIC I									- DATE S			lay-00		·
CONTRA		L. TODD	LIVIERTK	1000	<b></b>						DATE 5			lay-00		
DRILLER				<u></u>										., .,		
Elevation	253.6			City			ring Locatio Make & M				cation Plan ck Mount			г	rill Mud	
Item		Casing	Sampler SS		e Barrel NX	_		Tripo		- Tri	Cat-Head		Hammer Type			tonite
Type Inside Diam		HSA 3-1/4	55 1-3/8		2	_	ATV	 		П	Winch		✓ Safety		J	ymer
Hammer W		-	140			$\Box$	Track	Air 1			Roller Bit		Doughnu	t i	Nor	ne
Hammer Fr		-	30		<u> </u>		Skid	<u> </u>			Cutting Head		Casing		)riv <del>e</del> n	Spun
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number Recover	&	ample De (ft)	pth	Stratum Chauge (ft)				Visual Class	sifica	tion and Remark	5		
0												ISHE	D STONE			
				-+												
		14	51	- 2	.0			Very der	ise black b	luc gra	y silty fine to c	oarse	SAND, brick, sla	3, dry.		
												13	LL			
		34 42	16"724"			4.0										
		28 48	<u>\$2</u>		.0			Same, er	ccept mois	t.						
5		23														
	ļ	20			5.0	6.0		Medium	dense bro	wn-hle	ck sandy ROC	K FR	GMENTS, wet.			
		12	<u>S3</u>	6	0, <b>0</b>			NICOLUM	dense 010	**11*018	NA MERLY RUCK		STREAT O, WEL		·····	
		12	7"/24"			8.0										
		8	54		3.0	0,U		Same.					·····			
		7					Į									
		7	4 724			0.0		·								
10	t	10	\$5		0.0			Same.								
	<b> </b>	5 6	<b> </b>	-+												
		6	4"/24"			2.0		Same.								
	1	12 8	56		12.0			Janic.								
		12	6"/24"	,		14.0	J									
			0 724			. 4.1	1				······································					
15																
			1				1									
			<u> </u>				1									
								Į								
	1	<b> </b>	+				1						·····	····	·····	
		2	57		19.0			Loose	rown-gray	sandy	SILT, organics	s, wet.				
20	┫─────	3	1				1					ALL	OVIUM			
			3 10"/24	"	·	21.	0						<del>_</del>			
			1													
		<b></b>									· ··· ···			· · · · ·		
	<b> </b>						1									· · · · · · · · · · · · · · · · · · ·
			58		24.0			Same.								
	1	3			27.V			GALIC.								
- 25 -	<b>-</b>	3	3 10"/24		····	77										
	<b> </b>		3 10*/24	+		26.	<u> </u>				Bottom o	of Exp	loration at 26.0 ft			
1																
ł																
								1								
Į	<b> </b>					. <u></u> .					<u></u>					
30																· - · - · - · - · · - · · - · · · · · ·
		Water	r Level Dat	1	I			+	Sat	aple II	<del></del>		S	ummai	л <b>у</b>	
	Time	Elapsed Tim	e Botton	i of	Bottom		I Water II	0	Open End	Rod			burden (Linear ft)	26	·	
Date		(hrs)	Casing	(ft)	Boring	(ft)		"T	Thin Wal Undistur				Cored (Linear ft) ber of Samples	185		
						_		s	Split Spo	on San	-	_	BORING NO.		HA-1	15
			1		1			G	Geoprob			L_'			*****	

::;;

1. E. M.

U.

HALE ALDR	Y&± ICH		J	res	T	B	OR	ING	G R	EP	ORT			P	HA	1 - 1
											H&A FI	LEN	<b>O.</b> 70	819-00		4 0
PROJECT		PORT OF RC									- PROJEC				ENTIN	<u>.</u>
LOCATIO	· ·	ROCHESTER									- FIELD F			DEDR	UCK	
CLIENT		LABELLA A									DATE S			un-00		
CONTRA		GEOLOGIC	ENTERPR	ISES							DATE F			lun-00		
DRILLER		L. TODD														
Elevation	252.	4 ft Dat	tum	City	_		g Locatio				cation Plan ck Mount			· · ·	Drill I	Mud
Item		Casing	Sampler	Core Ba		tig Μ ⊽∏Ti	lake & M	Trip	_	<u>, ।</u>	Cat-Head		Hammer Typ	e		Bento
Туре		HSA	SS	<u>NX</u> 2		_] A.		□ ···• □ Geo		lΗ	Winch	ľ	Safety	_	11	Polyn
Inside Diam		3-1/4	1-3/8 140	2		]T			Track	T	Roller Bit		Dough		Ø	None
Hammer W Hammer Fa			30			_	kid	ō			Cutting Head		Casing		Drive	<u>1</u>
	Casing	Sampler	Sample	Sam	ple Dep	461	Stratum						D	_1		
Depth (ft)	Blows per	Blows per 6	Number	« I	(ft)	· [ `	Change				Visual Class	incati	on and Rema	rks		
	ft	in	Recover	y			(ft)	0.4 ft. 1	OPSOIL							
_ •		4	51	0.0				Medium	n dense bla	ick blue	silty fine to coa	arse S/	ND, slag, dry	•		
		16				1-						FIL				<u> </u>
						2.0										
		22	<u>\$2</u>	2.0			······	Same, e	xcept wet.							
		21														
		42	12"/24" S3	4.0		1.0		Same.					<u></u>			
e		25														
5		10 20	8"/24"			6.0		<b> </b>								
		14	<u>54</u>	6.0				Mediur	n dense br	own fin	e to coarse SAN	D, sla	g.			
		12						<u> </u>								
		2	10"/24			8.0	8.0				m fine to coarse	SAM	) some gravel	wet		
		3	\$5	- 8.0				Mediu	n uense gr	ay UTOW	n tine to coarse	- Grun	-, some graver	,		
		8				~~		1								
10		18	8"724" S6	10.0		0.0		Same.								
		7				_		ļ				ALLI	VIUM			
I	ļ	4	5 8"/24"			2.0		<u>t</u>								
								.[								
	<u> </u>							<b></b>								
l			Ţ			4										
15	]	L	1					1				les	oist			
- 13	1	1 2	<u>\$7</u>	15.0	)			Loose	gray brow	n nne s	and SILT, organ	ues, m	<u></u>			
	<b> </b>		1					1								
ł			3 3*724	<u> </u>	1	7.0										
			1					-								
1	[							- <del> </del>			····					
1		<u>+</u>	-													
20	<b>.</b>	2	58	20.	0		· · · · ·	Vav	oose gray	brown	ine sand SILT,	little c	ay, organics,	moist		
l		1			- <u>-</u>			1								
i	[	3	3 16"724	r		22.0	<u></u>									
1		-	- 10 /2													
l							<u></u>									
1	1		-													
									<del>-</del>							
25	+	<u> </u>	59	25.	0			Same	 							
		1 2														
1	1.	<b>^</b>	3 18"72	4" -		27.0		1			Dottom	of East	loration at 27.	0 <del>11</del>		
1			_								Bottom	u cxp	Mauon at 27.	·		
1								_					······································			
1	ļ															
<b>I</b>	1															
- 30 -										mple	<u></u>			Sum	mary	
		Elansed Tir	er Level Da		Bottom	of		<u> </u>	Open E	nd Rod			ourden (Linear	ft)	27	
	Time	1 -			Boring		Water (	n) Ť		all Tub		Rock	Cored (Linear	ft)	**	
Date		(hrs)	Casing		Dornag	<u></u>		Ηů	Undistu		mole	h	er of Samples		95	

.....

. .

- 71 J.

HALE	Y &				1 11 1				T			DRING NO
ALDR	ICH		j	LES I	R	<b>UK</b>	ING R	LFUK				A-110
											Page	1 of
PROJECT		PORT OF RO	CHESTER	<u> </u>					A FILE			
OCATIO	N	ROCHESTER	, NEW Y	ORK				PR	OJECT N		LENTI	
CLIENT	-	LABELLA A						FIE	ELD REP.	R. DE	DRICK	
CONTRA		GEOLOGIC I	***					DA	TE STAF	TED 2-Jun-	-00	
DRILLER		L. TODD						DA	TE FINIS	SHED 2-Jun-	-00	
				City		ing I and	an Cas Pa	ring Location Pla				
Elevation (tem	252.4	f ft Dat Casing	Sampler	City Core Barrel	_	ing Locati Make & N		5 - Truck Mount			Dri	ll Mud
		HSA	SS	NX		Truck	Tripod	Cat-Hea	ad	Hammer Type		] Bentonite
l'ype Incide Diam	alar (in)	3-1/4	1-3/8	2		ATV	Geoprobe	Winch		Safety		
Inside Diam		<u> </u>	1-3/8	2		Track	Air Track	Roller E	Bit	Doughnut	Ē	
Hammer W			30		A	Skid		Cutting		Casing	Dri	
Hammer Fs	di (m) Casing	Sampler	Sample			Stratum	<u></u>					
Depth (ft)	-	Blows per 6	Number Recover	& Sample L	-	Change (ft)		Visual	Classifica	tion and Remarks		
							0.4 ft. TOPSOIL	k blue elter 2	to come f	AND day to		
		4	<u>SI</u>	0.0			Medium dense bla	ok dive stity tine		LL		
		10										
		24	11"/24		2.0							
		22	<u>\$2</u>	2.0	]		Same, except wet.			·····		
		12 21					<b> </b>					
		11	12"/24		4.0			·····				
		42	<b>S</b> 3	4.0			Same.					
5		25	ļ				<b></b>					
		20			6.0		l					
		14	<u>S4</u>	6.0			Medium dense bro	wn fine to coars	e SAND, sl	ag.		
		12					<u> </u>					
		2	10"724		8.0			····				
		3	S5	8.0			Medium dense gra	y brown fine to	coarse SAN	D, some gravel, we	et.	
		5 8	ļ				<b> </b>					
		°	8"/24"	·	10.0	<u> </u>	<b>1</b>					
10		18	<u>S6</u>	10.0			Same.					
		7 4	Į			ļ	l		ALLI	NIUM		
			8"/24"	···	12.0						•	
	ļ		ļ			<b> </b>					<u> </u>	
	l		ł			<b> </b>	1					
						1						
15	I					1	Loose gray brown	fine cand Cil T	organice -	noist		
	1	2	S7	15.0		<b> </b>	LOOSE BLAY DIOWN	MIN 2010 311.1,	, Jiganuto, D			
		3	1									
			3"/24	н	17.0	2						
						<b>}</b>		<u>,</u>				
	J	+	+			ł		······································				
	1		1									
	[		1									
20	<b> </b>	2	58	20.0		<b></b>	Very loose grav b	rown fine sand S	SILT, little	clay, organics, mois	st.	
	1		+							·····		
	1	3	1	7.	- 85							
	ļ		3 16*724	4"	22.0	4						
	1	}	-{				-1					
	L											
	1	ļ						·····				
25			59	25.0			Same.	·····				
	L		1									
	1	2	3 18"/2	<u> 2* -  </u>	27.	<del>o[</del>					à-	
				<u>-</u>		-		Ba	ottom of Exp	ploration at 27.0 ft.		
30	1	h										
											mmary	
		Wate Elapsed Tim	r Level Dat ic Bottor		om of	- <u></u>		mple ID d Rod		burden (Linear ft)	27	··· ·
Date	Time	(hrs)	Casing		ag (ft)	I Weter ()	T Thin Wa	il Tube	Rock	Cored (Linear ft)		
<b> </b>	+				<u></u>		U Undistur	bed Sample	Num	ber of Samples	95	
<u> </u>	1							oon Sample		BORING NO.		HA-116
							G Geoprob	ю			_	

ļ

÷

(1777) ×

1111

HALE	$VS_{\tau}$				· · · · · ·				~ ~~ ~							RING	
ALDR	ICH		]	ſE	ST	B	OR	INC	; RI	ĽP	ORT				H	<b>A-1</b>	.17
										_				P	age	1	of 1
ROJECT		PORT OF RO	CHESTE	2							H&A FI	LEN	NO. 70	0819-0	00		
LOCATIO		ROCHESTER		_							PROJEC	CT M		I. VAL		ŧΕ	
CLIENT		LABELLA AS				-					FIELD I	REP.	R	. DEDI	RICK		
CONTRA		GEOLOGIC E									DATE S	TAR	TED 24	4-May-	00		
DRILLER		L. TODD									DATE F	INIS	SHED 24	4-May-	00		
				City	<u>-</u> ,		ng Locatio		See Bor		cation Plan		·				
Elevation tem	253.1	7 ft Date Casing	um Sampler	_	e Barrel I	Rig	Make & M	odel			ck Mount				Drill	Mud	
Гуре		HSA	SS					] Tripo	юd	Ū	Cat-Head		Hammer Tyj				tonite
Inside Diam	eter (in)	3-1/4	1-3/8		2	<u> </u>	ATV	Geop	robe		Winch		J Safety			Poly	
Hammer W		-	140					Air T	rack		Roller Bit		Doug	hnut		Non	
Hammer Fa	ill (in)	-	30				Skid	]			Cutting Head		Casing		] Driv	en [	Spun
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number Recover	&   <sup>5</sup>	ample Dep (ft)	ъđ	Stratum Change (ft)				Visual Class	sificat	tion and Rem	arks	. <b>.</b> ,		
- 0		2	51	- 0	.0	-		Medium	dense brov	wn san	dy SILT, organi	ics, dr	ry.				
		4															
		7 8	8"/24"			2.0											
		10 9	<u>S2</u>	2	.0			Medium	dense bro	wn blu	e silty SAND, f	oundr	ry, debris, dry.				
		20										FI	LL				
		30 13	9"/24" S3		.0	4.0		Very der	ise blue-bl	ack er:	ay sandy SILT,	brick.	, slag, moist.				
_		34	22	f*							<u></u>						
_ 5		53	14"724			6.0								<u>.</u>			
!		62	S4		5.0			Same, er	ccept wet.								
		1007.4	,														
1			7*/10*			8.0		N.T.	dar a bl		silty ROCK FI	R & / 3	VENTS wet				
		6	\$5		3.0			Medium	acase bia	UK-DIUC	Sury ROCK FI	10101					
		15				~											
10	<b> </b>	13	<u>9"/24"</u> \$6		10.0	0.0	10.0	Medium	dense san	dy SIL	T, little clay, or	rganic	s, moist.				
		20															
		7	12*724	* - +	ī	2.0								·····			
		2	57		12.0			Medium	dense bla	ck-gra	y silty fine to co	oarse	SAND, some	ше дтач	vel, moi	st.	
		5 [9	<u> </u>									ALLI	NUIN				
	ļ	19	12"724	-	1	4.0											
			<u> </u>														
15																	
				_				<b> </b>									
	1	<u> </u>						<b></b>			·						
			Į					<b> </b>								······································	
		2	58		19.0			Medium	n dense gri	ay-brov	wn sandy SILT,	little	gravel, wood,	organic	s, mois	t.	
20	<b>_</b>	5	<b></b>					<b> </b>									
			14"724	₽ <b>-</b>		21.0	· · · · · · · · · · · · · · · · · · ·										
	1						<u> </u>										
1			1														
l							<b>+</b>										
			1		24.0			Same.									
		3	59		24.0		+	Same.									
25	-	4				 		1									
1			4 1772	4"	{ <b></b>	26.0	4				Bottom	of Exp	loration at 26	.0 A.			
1			-				Į										
ļ					<b> </b>												
					1			N	ning wall	instell	d in completed	horel	bole. See Inst	listion	Report	for	
					<u> </u>			LBA-N		INSTRIC	a in completed	oorel					
L 30 _							1	1									
		Wata	r Level Da	ta	I		<u> </u>			mple I	D				mary		
Det:	Time	Elapsed Tim	e Botton	n of	Bottom		Water (f	0	Open En	त रेज			burden (Linea		26		
Date	Lime	(hrs)	Casing	; (ft)	Boring	(ft)		ΪŪ	Thin Wa Undistur				Cored (Linea ber of Sample		95		
ļ		+			+		+	s	Split Spa	oon Sar	-		BORING NO.			HA-1	17
I	-+		+		1		1	G	Geoprob	e		<u> </u>					

÷

¢

RT OF ROCHESTER OCHESTER, NEW Y( BELLA ASSOCIAT COLOGIC ENTERPR TODD	R ORK ES	LATION REPORT         H&A FILL         PROJECT         FIELD RE         DATE INS         WATER I         Type of protective cover/lock         Height/Depth of top of guard pipe/ro         above/below ground surface         Height/Depth of top of riser pipe         above/below ground surface	E NO. 70819 MGR. M. VA EP. R. DE STALLED 5/24/2 LEVEL Guard Pip Z Roadway 	ALENTINE DRICK 0000
RT OF ROCHESTER OCHESTER, NEW YO BELLA ASSOCIATI OLOGIC ENTERPR TODD Surveyed ft La Surveyed ft La BOREHOLE	R ORK ES ISE	H&A FILI PROJECT FIELD RE DATE INS WATER I Type of protective cover/lock	E NO. 70819 MGR. M. VA EP. R. DE STALLED 5/24/2 LEVEL Guard Pip Z Roadway 	-000 ALENTINE DRICK 0000 pe Box way Box
OCHESTER, NEW Y( BELLA ASSOCIAT) COLOGIC ENTERPR TODD Surveyed ft La BOREHOLE	ORK ES ISE	Type of protective cover/lock Type of protective cover/lock Height/Depth of top of guard pipe/ro above/below ground surface Height/Depth of top of riser pipe	EP. R. DE STALLED 5/24/2 LEVEL Guard Pig Roadway Road	DRICK 000 pe Box way Box
BELLA ASSOCIATI COLOGIC ENTERPR TODD Surveyed ft La BOREHOLE	ES ISE	DATE INS WATER I	STALLED 5/24/2 LEVEL Guard Pip I Roadway Road	pe Box way Box
COLOGIC ENTERPR TODD Surveyed ft Lo Surveyed BOREHOLE	ISE	WATER I	LEVEL Guard Pip Roadway Road	pe Box way Box 
Surveyed ft La Surveyed BOREHOLE		Type of protective cover/lock Type of protective cover/lock Height/Depth of top of guard pipe/ro above/below ground surface Height/Depth of top of riser pipe	Guard Pip Roadway Road	Box way Box 
BOREHOLE		Height/Depth of top of guard pipe/ro above/below ground surface Height/Depth of top of riser pipe	Roadway Road	Box way Box 
BOREHOLE		Height/Depth of top of guard pipe/ro above/below ground surface Height/Depth of top of riser pipe	Road	way Box
		Height/Depth of top of guard pipe/ro above/below ground surface Height/Depth of top of riser pipe		
		Height/Depth of top of guard pipe/ro above/below ground surface Height/Depth of top of riser pipe	adway box	0.3
DACKFIDE		above/below ground surface Height/Depth of top of riser pipe	adway box	0.3
				0.3
- - -				
		Type of protective casing:	1	None
1		Length		
		Inside Diameter		 
		Depth of bottom of guard pipe/road	way box	
Quartz Sand (17 ft. bgs.)		Type of Seals	Top of Seal (ft)	Thickness (ft)
		Concrete	0.0	0.0
(17 ft. to 26 ft.)		Bentonite Seal	0.0	4.0
		Type of riser pipe:		PVC
		Inside diameter of riser pipe		2.0
		Type of backfill around riser	Qua	artz Sand
		← Diameter of borehole		4-1/4
		Depth to top of well screen		5.0
		Type of screen	SCHED	DULE 40 PVC
		Screen gauge or size of opening	S ·	0.010
	L2	Diameter of screen		2.0
		Type of backfill around screen	Qu	uartz Sand
		Depth of bottom of well screen		. 15.0
				15.0
				26.0
of Extporation)				·····
			15	£ A
				length
1	<u>(17 ft. bgs.)</u> Bentonite (17 ft. to 26 ft.) (17 ft. to 26 ft.) ef Esiperation) <u>h from ground surface in feet)</u> <u>5 ft</u> + Pay Length (L1)	$\frac{(17 \text{ ft. bgs.})}{\text{Bentonite}}$ $(17 \text{ ft. to 26 ft.})$ $L1$ $L1$ $L1$ $L2$ $L2$ $L2$ $L3$ $L3$ $Tom ground surface in feet)$ $5  ft. t + 10$ Pay Length (L1) Length of	Quartz Sand       Inside Diameter         Quartz Sand       Type of bottom of guard pipe/road         Bentonite       Concrete         Bentonite       Inside diameter of riser pipe:         Inside diameter of riser pipe:       Inside diameter of riser pipe:         Inside diameter of borehole       Diameter of borehole         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet)       Image: Provide writes in feet)         Image: Provide writes in feet) <td>Quartz Sand       Inside Diameter        </td>	Quartz Sand       Inside Diameter

11

j t

•

T T	N.0										BORING NO.
HALE Aldr	Y & ICH		J	<b>FEST</b>	B	OR	ING R	EP	ORT		HA-118
				*							Page 1 of
			othere						H&A FI	LE NO. 70819	
ROJECT	•	PORT OF RO							-		LENTINE
OCATIO		ROCHESTER							- FIELD F		DRICK
LIENT		LABELLA A							-	TARTED 8-Jun-	·
ONTRA		GEOLOGIC I	INTERPR	1252				<del></del>	-	INISHED 8-Jun-	
RILLER		L. TODD							- 		
levation	242.7	8 ft Dat	um	City		ng Locati			cation Plan		Drill Mud
em		Casing	Sampler	Core Barrel	_	Make & N			ck Mount Cat-Head	Hammer Type	Bentonite
уре		HSA	SS	NX	~	Truck	Geoprobe		Winch	Safety	Polymer
nside Diam		3-1/4	1-3/8	2		ATV Track	Air Track	片岩	Roller Bit	Doughnut	✓ None
ammer W			140			I fack Skid		11	Cutting Head	Casing	Driven Sp
lammer Fa	ll (in) Casing		30 Sample			Stratum					· · · · · · · · · · · · · · · · · · ·
Depth (ft)	Blows per		Number Recover	& Sample L	)epth	Change (ft)			Visual Class	ification and Remarks	
							ASPHALT		· ·		
		9	<u> </u>	0.5			Medium dense bla	ck brow	n red silty fine	to coarse SAND, brick,	some rock
		18	13"718	****	2.0	2.0	fragments, dry.			FILL	
	·	7 9	13*718 S2	2.0	2.0		Medium dense bro	wn silt	y fine to coarse	SAND, moist.	
		12 9					l		P		
			12*724		4.0						
		4	<u>S3</u>	4.0			Loose gray brown	silty fi	ne to medium S.	AND, organics, moist.	
_ 5								·····			
	·	3	12*724	H	6.0						
							1				
			ļ					· · · · · · · · ·			
			<del> </del>				1				
10		· · · · · · · · · · · · · · · · · · ·	<u> </u>				+	P	10 000 0 XXIII	little silt little mayal	wet
10		6	<u>S4</u>	10.0			Medium dense gi	ay nne i	to coarse SAND	), little silt, little gravel,	
		14	l								
	ļ	4	16*724	l"	12.0						
			1								
			<b> </b>			<u> </u>					
	<b> </b>	1									
15	<b> </b>			15.0		<b> </b>	Very loose brow	organi	c SILT, moist.		
	L	1	<u></u>								
			16"/24	4	17.0	<b> </b>					
						1					····
							+				
						<b></b>					
						20.0					
20		4	<u>\$6</u>	20.0			Medium dense g	ray brow	wn silty fine to o	coarse SAND, some grav	/el, moist.
		16							C	LACIAL TILL	
	L		2 20*/2	4*	22.	1					
			-								
		_									
	1									AND come ment	•
25	1	28	57	25.0	25.	0	Very dense brow	vn silty	nne to coarse S	AND, some gravel, mois	······································
		100/.4		<u> </u>							
	L					1					
	<b> </b>										
	1		r Level Da					ample I			ummary
Date	Time	Elapsed Tin	ne Botto	m of Bott	om of	i Water i	(ft) O Open E			Overburden (Linear ft) Rock Cored (Linear ft)	<u>31</u> 
		(hrs) 0,5	Casin	g (ft) Bori	ng (ít)	9.1	T Thin W	all Tube urbed Sa	umple	Number of Samples	125
5/8/200	<u> </u>						S Split S	oon Sa		BORING NO.	HA-118
L							G Geopro	be		1	

130 L

.

	ن <u>سن تنت</u> ر وي						BORING NO.
HAL	EY & RICH		T	EST B	OR	ING REPORT	HA-118
							Page 2 of 2
) Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks	
		1007.4	S8 3"/5"	30.0		Very dense brown silty line to coarse SAND, some gravel, moist.	
		1007.4					
	·						
			·····				
35		18	<u>\$9</u>	35.0		Same, except gray brown.	
		77	12"/18"	36.5			
40		36	510	40.0		Same.	
		98	12"724"	42.0			
			12 124				
45		1007.5	<u></u>	45.0		Same, except trace rock fragments.	
			3*/6*	45.5			
-							
-							
50						Very dense red silty sandstone rock fragments.	
		100/.4	\$12 4"/5"	50.0		Bottom of Exploration at 51.0 ft.	
						Bottom of Exploration at 51.0 ft	·····
55							
1					<u></u>		·······
				-			
1							
60-							
1					<u> </u>		
1							
1							
65							
							······································
1							
70-							
						FILE NO. 70819-000 BORING N	NO. EIA-118

1

1

1.24.15

المحكفظات

19

HALE	Y& ICH		J	<b>FES</b>	ΓВ	OR	ING R	EP	ORT		BORING NO. HA-119
											Page 1 of
DOFECT		PORT OF RO	CHESTER	2					H&A FILE	NO. 70819	-000
ROJECT	•	ROCHESTER							PROJECT		LENTINE
CATIO		LABELLA A							FIELD RE		DRICK
LIENT	-								DATE STA		-00
ONTRAC		GEOLOGIC I	ENTERPR	1959					DATE STA		
RILLER		L. TODD							DATEFIN		
evation	250.5	2 ft Dat	tum	City	Bor	ing Locatio	na Sec Bo	ring Loc	ation Plan		
		Casing	Sampler	Core Bar	rel Rig	Make & N	lodel CME 5	5 - Truc	k Mount		Drill Mud
pe		HSA	SS	NX	Ø	Truck	Tripod	$\Box$	Cat-Head	Hammer Type	Bentonite
side Diam	eter (in)	3-1/4	1-3/8	2		ATV	Geoprobe		Winch	✓ Safety	Polymer
mmer W			140			Track	Air Track		Roller Bit	Doughnut	V None
ammer Fa		-	30			Skid	[]		Cutting Head	Casing	Driven S
	Casing Blows per ft	Sampler Blows per 6 in	Sample Number Recover	& Sampi	le Depth (ft)	Stratum Change (ft)			Visual Classific	ation and Remarks	
									XC	PHALT	
- •											· · · · · · · · · · · · · · · · · · ·
		44	<u>51</u>	1.0			Very dense brown	gravelly	fine to coarse SA	ND, dry.	····
		66	3"712"		2.0		Madium dance ha	um cilés		FILL AND, little silt, wet.	
		10	<u>S2</u>	2.0			wiccitalit detise of	, an any			
		6	t						AL	UVIUM	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
		7	14"/24 S3	4.0	4.0		Medium dense bro	WD PTAY	, fine to coarse S	AND, little silt, wet.	
		1									
_ 5		7									
		7	16"/24 54	6.0	6.0	<b> </b>	Medium dense gra	ay brown	i fine to coarse SA	ND, some silt, little	rock fragments,
		12					wet.				
		20	10"724	H	8.0						
			S 10 724	8.0	0.0		Medium dense gr	ay brow	n gravelly fine to	coarse SAND, trace s	ilt, wet.
		14									
		25	207/24	pr	10.0	<b> </b>					
- 10			1 20 12								
						<b>_</b>					
	1										
		· · · · · · · · · · · · · · · · · · ·									
							+				
							Loose gray brow		CII T wet		
		14	<u>\$6</u>	14.0		╉	Loose gray blow	it sailuy	5151, 400		
- 15		3									
	L		3 18"/2	4*	16.	<u>0</u>					
	1										
	<b> </b>						1				
						1		n sile, f	ine to coarse SAN	D, trace gravel, wet.	
	1	3	57	19.0			LOOSE BIRAN DIOM	y L		- , Brarrey right	
20	<b>-</b>	3									·
	·		3 20"/2	4"	21	<u>v</u>					
										····	
	ļ		58	24.0		<u></u>	Loose grav brow	in fine t	o medium sandy S	ILT, trace clay, orga	nics, moist.
	1	6		24.0			Course gray orde				`
25	-	3	_								
	<u> </u>		2 15*7	<u> </u>	26	····			· · ·		
						_					
											· · · · · · · · · · · · · · · · · · ·
				9 29.0			Same.				
			S								
30	-	- 3	147		3	.0					Summary
		Wat Elapsed Ti	nel Botto		lottom 9	r-1		ample I nd Rod		verburden (Linear ft)	
Date	Time	(hrs)	me Botto Casin		ioring (f	1 Water	( <sup>11)</sup> T Thin W	all Tube	s R	ock Cored (Linear ft)	
						_	-	urbed Sa poon Sa		umber of Samples BORING NO.	135 HA-119
							S Split S				

٠ţ

19

3

зd

1.1

.

HAL ALD	EY & <del>e</del> RICH	<u> </u>	T	EST E	OR	ING REPORT	BORING NO. HA-119
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks	Page 2 of 2
				31.0			
			· · · · · · · · · · · · · · · · · · ·				
						Loose gray brown fine sand SILT, trace clay, organics, moist.	
35		1 	<u>\$10</u>	34.0			
		3	17"/24"	36.0			
			<u>\$11</u>	39.0		Same.	
40		3	22"/24"	41.0			
		·····					
			613	44.0		Loose, gray fine sand SILT, trace clay, organics.	
- 45-			\$12	44.0			
		3	24"/24"	40.	/		
		1	\$13	49.0		Same.	
50		2	18"/24"	51.	<b>.</b>	Bottom of Exploration at 51.0 ft.	
55							
60-							· · · · · · · · · · · · · · · · · · ·
65-							
70.						FILE NO. 70819-000 BORING	NO. HA-119

ļ,

.

I-IALT	$\gamma S_{\tau}$									BORING NO
HALE ALDR	ICH		J	<b>FEST</b>	B	OR	ING R	EPORT		HA-120
			_	. –						Page 1 of
			OT TRAFFIC					H&A FI	LE NO. 70819	
ROJECT	-	PORT OF RO								LENTINE
OCATIO	•	ROCHESTER								DRICK
CLIENT		LABELLA A						FIELD F		
ONTRA	CTOR	GEOLOGIC I	ENTERPRI	ISES					TARTED 8-Jun	
RILLER		L. TODD					<u></u>	DATE F	INISHED 9-Jun	-00
	254.3	1 ft Dat	tum (	City	Bor	ng Locatio	n See Bo	ring Location Plan		
levation	234.3	Casing	Sampler	Core Barrel	_	Make & M		5 - Truck Mount		Drill Muð
ype		HSA	SS	NX		Truck	Tripod	Cat-Head	Hammer Type	Bentonit
ype nside Diam	eter (in)	3-1/4	1-3/8	2		ATV	Geoprobe	U Winch	✓ Safety	Polymer
Iammer W		-	140			Track	Air Track	Roller Bit	Doughnut	✓ None
Iammer Fa						Skid	<u> </u>	Cutting Head	Casing	Driven S
	Casing Blows per	Sampler Blows per 6	Sample Number	I Semple L	epth	Stratum Change		Visual Class	ification and Remarks	
	ft	in	Recover	y (1)		(ft)		<u></u>	<u> </u>	
- 0		6	51	0.5		· · · · · · · · · · · · · · · · · · ·	ASPHALT Medium dense gra	y to black fine to coars	e SAND, some rock fra	gments, dry.
		10							FILL	
		20			2.0		Medium dence ble	ck to red brown silty fi	ne to coarse SAND, son	e rock fragments.
		5	<u>S2</u>	2.0			dry.			
		7								
		9	12"724" S3	4.0	4.0		Same, except loos	e.	<u> </u>	
_	ł	3								
5	[	3	12"/24"	·	6.0	6.0				
		2	12-724 S4	6.0	0.0	0.0	Very loose brown	silty fine to medium S.	AND, trace rock fragme	nts, moist.
		1							ALLUVIUM	
		<u>_</u>	7"/24"		8.0					
			\$5	8.0			Same, except wet			
	L		J							
	1	<u>-</u>	2 3"724"		10.0					
10	1	1	<u>\$6</u>	10.0			Very loose gray b	rown silty fine to coars	e SAND, little gravel, w	et.
	J	1 3	4				l	<u> </u>		
	ł	<sup>-</sup>	18"724		12.0					
		5	<u>\$7</u>	12.0		ļ	Same, except son	ne gravel.		
		5	+		~	<u> </u>				
		1			14.0		Ned	ou brown silty fine to a	oarse SAND, little grav	el wet
		6	58	14.0		<b> </b>	Integrum dense gi	מי שטאוו אוויץ וגוב נט נ	ombo or inter, ittue gidt	
15	<b></b>	3					1	······································		
			8 14"724	r	16.0					
							<u> </u>			
		-				<b></b>	1			
	ļ		1			<b> </b>	┨			
	1					<u> </u>	1			
	<b></b>		1			1				
20			59	20.0		1	Same, except ve	ry loose.		
	1	2				1				
		2	3 14*/24	2*	22.0	s <del> </del>				······································
			- 14/12		44.	1	1			
						1				
						+				
		-				1	1			
25			510	25.0			Very lonse pray	brown fine to medium	sandy SILT, trace clay,	organics, moist.
		3				1				
		2	_						·····	
			1 14"72	.4"	27.	<u> </u>				
		<u> </u>								
		-								
l						-{				
30						-				
								ample ID	8	ummary
L		Elansed Tu	er Level Da mej Bottor		om of	Water (	O Open E	nd Rod	Overburden (Linear ft)	52
							(t) T Thin W	all Tube	Rock Cored (Linear ft)	
Date	Time	(hrs)	Casing	<u>r (11)   Roll</u>	ng (ft)					146
Date	Time	(hrs)	Casin	g (ft) Bori	a <u>y</u> (10)		U Undista	arbed Sample	Number of Samples BORING NO.	135 HA-120

:

ł

3

2011

es l

1.2.2

-

	HALI ALDI	EY & UCH		T	EST B	OR	DRING REPORT					
المتعقم الم	Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks	Page 2 of 2				
			1	<u>- SII</u>	30.0		Very loose gray brown fine to medium sandy SILT, trace clay, or	ganics, moist.				
			2	18"/24"	32.0							
							ALLUVIUM					
	35	· <u></u>	1	<u>\$12</u>	35.0		Same.					
			2	24"/24"	37.0							
	<b>└─</b> 40 ──		1	\$13	40.0		Same.					
			3	24#/24"	42.0							
	45		1	S14	45.0		Same.					
			2	22"/24"	47.0							
_												
-												
	<b>50</b>		н	<u>\$15</u>	50.0	<u> </u>	Same.					
	ļ		2		32.0							
				24"/24*	52.0		Bottom of Exploration at 52.0 ft.					
	55			-								
						<u> </u>		······				
		<b></b>										
	60											
	1					1						
	65-											
	70						FILE NO. 70819-000 BORING	NO. HA-120				

8

1....

ŗ

1777 T 13

1

HALI ALDI	EY & RICH		]	rest	B	OR	ING RI	EP	ORT		BORING HA-1 Page 1					
PROJECT		PORT OF RO	CHESTER	<u></u>					H&A FILE	NO. 70819	-000					
LOCATIC		ROCHESTER							PROJECT	MGR. M. VA	LENTINE					
CLIENT		LABELLA A				<u> </u>			FIELD RE		STRANT					
CONTRA	CTOP	GEOLOGIC I							DATE STA							
DRILLER		L. TODD							DATE FIN							
					<u> </u>						•					
Elevation	252.			City		ing Locatio			cation Plan		Drill Mud					
Item		Casing	Sampler	Core Barrel	<u> </u>	Make & M Truck	Tripod	[기	Cat-Head	Hammer Type		lonite				
Туре		HSA 3-1/4	SS 1-3/8	1-7/8			Geoprobe	ñ	Winch	Safety	Poly					
Inside Diam Hammer W			140	1-110		Track	Air Track	Ē	Roller Bit	Doughnut	Non					
Hammer Fa			30			Skid	ō	$\Box$	Cutting Head	Casing	Driven [	] Spun				
	Casing	Sampler	Sample	I Semple I	Denth	Stratum										
Depth (ft)	Blows per ft	Blows per 6 in	Number ( Recovery	&(ft)	-	Change (ft)	<u> </u>			ation and Remarks						
- •		- <del>y</del>	<u> </u>	0.0		- 0.3	Medium dense dark	brown		id, little cinders, little	gravel.					
		8								FILL						
1		10	14"/24"		2.0		······					······································				
1		6	<b>S</b> 2	2.0			Same.									
		6														
		5	10"/24"		4.0		No Paratra									
1		3	53	4.0			INO RECOVERY.	o Recovery.								
- 5	1	2	AN													
		2 2	0"/24" S4	6.0	6.0		Loose dark brown o	gravel, trace silt, wet.								
		3										· · · · · · · · · · · · · · · · · · ·				
		2	2"/24"		8.0			····	····							
		2	<u>S5</u>	8.0			Same.									
	2								·							
10	<u> </u>	21	18"/24"		10.0											
		1	<u>S6</u>	10.0			Same.			<u> </u>	····					
1	<u> </u>	6							· · · · · · · · · · · · · · · · · · ·							
1		10 26	14"/24" \$7	12.0	12.0											
1		24					0		Ha	and wet						
		10	20"/24"		14.0	13.2 -	Dense blue-gray gr	avel, li	ine coarse to fine i	auu, wel.						
	<u> </u>	3	58	14.0		- 14.3	Very loose brown	0001	11/59 trace and 1	mos sile must						
15	<b> </b>	2	<u> </u>			15.5	1									
		3	16"/24"	· • •	16.0		Very loose gray-br	own fir	ie clayey SILT, so	me sand, little organic	s, moist.					
									AL	UVIUM	<u></u>					
	}															
1					]		<b> </b>	·			·····					
1																
20	4	1	<u>\$9</u>	20.0			Same, except little	fine sa	nd.							
1	ļ	2					<b> </b>									
1	۔ 	2	24"/24	•	22.0		1			····						
1							<u> </u>									
1		1					<u> </u>									
1			ļ													
			<u> </u>				1									
25	1	2	510	25.0		ļ	Same.									
	<b> </b>	2 2	<b></b>			<b> </b>	+									
			20"/24	*	27.0	I										
1						<b> </b>	<b></b>					•				
1	1		1													
						·[										
30																
	1	Water	Level Data			I	San	iple ID	T	Su	mmary					
Date	Time	Elapsed Time	e Bottom	of Botto		Water (fi	O Open End	Rod	Ove	rburden (Linear ft)	37					
		(hrs)	Casing	(ft) Borin	g (ft)		T Thin Wall			k Cored (Linear ft) nber of Samples	<u>5</u> 12S					
		+	- <u> </u>			<del> </del>	S Split Spor	on Sam		BORING NO.	HA-12	22				
	1		1			1	G Geoprobe		l							

4

 $\mathbf{F}_{i}$ 

Tur.

Sec.2.1

I.J.A.I.	$c_{N}/\rho$	[					BORING NO.
ALD	EY & RICH		T	EST E	BOR	ING REPORT	HA-122
							Page 2 of 2
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks	
		2 3	511	30.0		Loose gray-brown clayey SILT, little fine sand, little organics, moi	st
		3	24"724"	32.0		ALLUVIUM	
35			\$12	35.0			
		6 8			36.0	Medium dense brown-red coarse to fine sandy SILT, some gravel, to moist. GLACIAL TILL	little clay, damp
		30	15"/24"	37.0	37.0	to moist. GLACIAL TILL Observed auger refusal at 37.0 R. Begin coring at 37.0 ft. See Con	e Boring Report.
		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			
40		[		<b>†</b>			
						Bottom of Exploration at 42.0 ft.	
45							
							·····
50	<u> </u>						
					· [		
55							
			<u> </u>		<b> </b>		
			<b> </b>		1		
			Į		1		
1 ·							·····
- 60-							
		-	<u> </u>				
1							
							······································
65		-					
					<u></u>		
70-							-
1						FILE NO. 70819-000 BORING N	0. HA-122

....

123

-----

C.2.

......

ł

HALI ALDI	Y&= NCH			CO	RE	B	ORI	NG RI	EPORT	•	BORING NO. HA-122 Page 1 of
ROJEC	Γ	PORT OF R	OCHEST	ER					H&A	FILE NO. 70819	-000
OCATI		ROCHESTE	ER, NEW	YORK					PROJ	ECT MGR. M. VA	LENTINE
LIENT		LABELLA							FIELI	D REP. R. DE	DRICK
CONTRA	CTOP	GEOLOGIC							DATE	STARTED 30-Ma	ıy-00
ORILLE		L. TODD								FINISHED 30-Ma	
	· · · · · · · · · · · · · · · · · · ·										<u>,                                     </u>
levation		ft D	atum				g Location				In which i
tem		Casing	Sampl		e Barrel		lake & Mod				Drill Mud
Гуре		HAS	SS		NX			Tripod	Cat-Head	Hammer Type	Bentonite
nside Dian	neter (in)	3-1/4	1-3/8	3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2			Geoprobe	Winch	Safety	Polymer
lammer V			140				Track [	] Air Track	Roller Bit	Doughnut	None
lammer F	ali (in)		30				Skid [		Cutting He	ad Casing	Driven Sp
Depth (ft)	Drilling Rate	Core No.	Reco RQ		Weathe	ring	Stratum Change		Visual Cl	assification and Remarks	
-	(min/ft)	Depth (ft)	(in)	(%)	1		(ft)			<u> · · · · · · · · · · · · · · </u>	<u> </u>
					ļ						
		-			<b> </b>			<u></u>			
	,				· · · · · ·		37.0	Begin Coring at 3	.0 ft.	d and have a	Ene emined
		37.0				]		Moderately soft, n	iderately weathered	d red-brown-green mottled i with close to very close w	eathered
		┠		<u></u>	t			shaley partings.			
			48	<u>80</u> 58					متلاد	NSTON FORMATION	
		RI	35	38	MOL	·			QUEE	IN TON TOWN TION	
40											
		[]			<u> </u>						·····
		42.0			†		42.0				
					1				Botto	om of Boring at 42.0 ft.	
							·				
45		╆╾╾╌┤╴			<u> </u>						
										·····	
	Į	<b>├</b> ────┼									
		<u> </u>									
		J									
50		<b>∮</b> ∤			1						
							<u> </u>				
					1						
	L										
	I			<u> </u>				<b></b> · _			·····
				1	1		<u> </u>				
55	ļ			Į	+		<u> </u>				
	1			<u> </u>	1						
				1	1						
	ļ	┟───┤		<u> </u>			<u> </u>				
	1			1			1	<u> </u>			
							Į				
				<u> </u>			1	<u> </u>			
60				1			1				
	1							<b> </b>			
		- <u> </u>		<u>+</u>			+	1			
				<b></b>	1		1				····
				<b>_</b>	·		+	<b> </b>			
	}						+	1			
				1	_			1			
65	•	+					+	1			
					1		I		mple ID		mmary
		Elapsed Ti	Vater Leve		Sottom of	Borin		O Open En	dRod	Overburden (Linear ft)	37
Date	Time	(hrs)		ing (ft)	(ft)		Water (ft	T Thin Wa	ll Tube bed Sample	Rock Cored (linear ft)	5 12S
							1	🛛 U Undistur	oou oaunpic	Samples	140
							+		on Sample	BORING NO.	HA-122

t,

.

1

· Markin

ł

1.11.1

---

11111	V.S.											BO	RING NO.
HALI			Г	<b>EST</b>	R	OR	ING R	EP	ORT	ſ		H	A-123
									~~~~				
												Page	1 of 4
PROJECT	· ·	PORT OF RC	CHESTER	·					H&A F				· · · · · · · · · · · · · · · · · · ·
LOCATIC	N	ROCHESTER	ς new yo	ORK					_ PROJE			LENTI	NE
CLIENT		LABELLA A	SSOCIATE	ES					FIELD	REP.		DRICK	
CONTRA	CTOR	GEOLOGIC I	ENTERPRI	SES					DATE S	STARTI	ED <u>S-Jun-</u>	00	
DRILLER		L. TODD							DATE I	FINISH	ED 6-Jun-	00	
171	163.6	4 ft Da		City	Ba	ing Locatio	See B	ring L c	cation Plan				
Elevation Item	253.6	Casing	Sampler		_	Make & M			ck Mount		· · · ·	Dril	Mud
Туре		HSA	SS	NX			Tripod	না	Cat-Head	H	ammer Type		Bentonite
Inside Dian	veter (in)	3-1/4	1-3/8	2			Geoprobe	Π	Winch		Safety	-1-6	Polymer
Hammer W			140		Б	Track	Air Track		Roller Bit		Doughnut		None
Hammer Fa			30			Skid	0		Cutting Head	C C	sing	Driv	en 🗌 Spun
	Casing	Sampler	Sample	Sample De	nth	Stratum							
Depth (ft)	-	-	Number d	<sup>≠</sup> (ft)	· · · ·	Change			Visual Clas	sification	and Remarks		
	ft	in	Recovery	<u></u>		(ft)	(0.3 H. TOPSOIL)						
•		4	SI	0.0			Medium dense bro	wn gray	y sandy SILT,				
		8								FILL			
		8	8"/24"		2.0				······				
		8	S2	2.0		7	Medium dense bro	wn red	silty fine to co	arse SAN	D, trace fine gra	vel, dry.	
		7 8											
		8	13"724"		4.0								
		3 4	53	4.0			Same, except moi	it.					
5									·····				
		3	16"724" S4	6.0	6.0		Loose brown red s	Dty fine	to coarse SAN	ND trace	fine mayel wet		
		2		0.0			Loose brown reas	inty mat	0 00 00 071	10, 040	The graver, wet.		
		2	20"724"		8.0								
		- <u>1</u>	20 724 S5	8.0	8.0		Medium dense bla	ck brov	vn silty fine to	coarse SA	ND, wood, wet		
		4 8											
			16"/24"		10.0						·····		
10		5	<u>\$6</u>	10.0			No Recovery.						
		3 2											
		2	0*/24*		12.0								
		5	\$7	12.0			No Recovery.						
		- 5				· · · · ·			<u>.</u>				·····
		3	0"/24" S8	14.0	14.0		Loose gray brown	silty fit	ne to coarse SA	ND. som	e organics, mois	<del>त.</del>	
15		4					<del></del>						··· ·····
		1	19"724"		16.0					ALLUVI	им —		
			13 724	_					······································				
1						<u> </u>	L						
ŀ													
ļ .		2	59	19.0			Loose gray brown	clayey	SILT, little sau	nd, moist			······································
20		2											
	ļ	2	10*/22	qw-	21.0	·	<u> </u>						
ľ	<b> </b>											·····	
					<u> </u>		<u> </u>						
						1	<b></b>						
						<b> </b>	<u> </u>						
•	<u> </u>	<u> </u>	S10	24.0			Same, except littl	e clay.					
25	<b> </b>	2 2					Į				·····		
			14"/24"	·	26.0	, <del> </del>							
I.		<b> </b>	L			1							
1		<b> </b>				╂							
1			1				1		·····	······			
ł													
1	}	2	511	29.0		4	Same.						
30	<b></b>	2				,							
		L	15"/24" Level Data		31.0	4	Sai	aple ID	,		Sur	untary	
Date	Time	Elapsed Time	Bottom			Water (ft	O Open En	Rod			en (Lincar ft)	114	
Uate	1e	(hrs)	Casing (	(t) Boring	(ft)		T Thin Wal				red (Linear ft) of Samples	2 24S	
<b> </b>			+				S Split Spo				ING NO.		IA-123
	1		1			1	G Geoprob	)	-	DUK		łł	IA-12J

j

÷ ;

3

. اند.

1263-0

ALLE.

Hal Ald	EY & RICH		<b>T</b> ]	EST B	BOR	ING REPORT	BORING NO. HA-123 Page 2 of 4
Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and R	
				31.0			
		2	<u>\$11</u>	34.0		Very loose gray brown fine to medium sand SILT, trace c	lay, organics, moist
35		2	20"/24"	36.0			
						ALLUVIUM	
		1	\$12	39.0		Same.	
40		2	14"/24"	41.0			
		 	\$13	44.0		Very loose gray silty fine to medium SAND, moist.	
45		2	19"/24"	46.0			
		<u> </u>	<u>\$14</u>	49.0		Loose gray fine sand SILT, trace clay, organics, moist.	
50		3	20"/24"	51.0			
		1	\$15	54.0		Same.	
55		3	20"/24"	56.0			
60-			\$16	59.0		Same.	
		4	20"/24"	61.0			
		······································					· · · · · · · · · · · · · · · · · · ·
65-		3	<u>\$17</u>	64.0		Loose gray fine sand SILT, trace clay organics, moist.	
		4	24*/24*	66.0			
		WOH 5	<u>S18</u>	69.0		Same, except medium dense.	
70-		7	8 22"/24"	71.	0	FILE NO. 70819-000 BO	RING NO. HA-123

( · · · )

ļ

	HALI	EY & UCH		T	EST E	BOR	ING REPORT	BORING NO. HA-123
Ύ)	Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks	Page 3 of 4
				4 v · · · · · · · · · · · · · · · · · ·		· · · · ·		
:			4	<u>\$19</u>	74.0		Medium dense gray fine sandy SILT, trace clay, organics moist.	
	75			22"/24"	76.0		ALLUVIUM	
					79.0		Cama	
	80		2	S20	19.0		Same.	
			9	23*724*	81.0			
			-5		84.0		Same.	
	85			·				
		· 	9	20"/24"	86.0			
· "								
	90		5	<u>\$22</u>	89.0		Medium dense gray brown silty medium to fine SAND, trace elay	, moist.
		-,		21"/24*	91.0			
			WOR WOR WOR	<u>S23</u>	94.0		Very loose gray brown silty medium to fine SAND, trace clay, n	oist.
. '	95		WOR 5	22"/24"	96.0	1		
				ļ			· · · · · · · · · · · · · · · · · · ·	
	·		3	S24	99.0		Same, except medium dense.	
	100	<u> </u>	8 9	22*/24*	101.7	, ,		
	1					1		
	[							
			WOR	<u>\$25</u>	104.0		Same, except very loose.	
	- 105	<b> </b>	WOR WOR WOR					
			WOR	24*/24*	106.	0		
	l							
	1							
			3	S26	109.0	-	Medium dense gray brown silty fine to medium SAND, trace cla rock fragments, moist.	y, pockets of
			3	2 23"/24"		0	FILE NO. 70819-000 BORING NO	). HA-123

ļ

4	HAL ALD	EY & RICH		Т	EST E	BOR	ING REPORT	BORING NO. HA-123
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remar	Page 4 of 4
					1	·····		
							ALLUVIUM	
	115		100/.2	S27 2"/3₩	114.0 114.2	114.0	Very dense sandy ROCK FRAGMENTS. WEATHERED BEDROCK Began rock coring 114.0 ft.	
							Bottom of Exploration at 116.0 ft	
				······				
	120							
	125							
·;								
	130							
	135							
	140					· · · · · · · · · · · · · · · · · · ·		
	145							
	150	[					FILE NO. 70819-000 BORING	KO. HA-123

LABELLA ASSOCIATES, P.C.					EW YORK	ţ	PROJE Port of Rocheste	•					OF 1	
							4650 Lake Aven	iue				JOB # 99150		
ENVI	RONM	ENTA		ERING CO	NSULTANTS		·· ·			<u> </u>		CHKD. BY		
_			Marcor				BORING LOCA				DAT: #4			
	LER		Jim				GROUND SUR				DATUM			
ABE		EPRE	SENTATI	/E	DEP/TMS		START DATE 8	/22/00		DATE 8/22/00				
										R LEVEL DAT		REMARKS		
		RILL		geo-probe				DATE	TIME	WATER	CASING	HEIMANING		
			) TYPE											
			AMPLING	METHOD										
ROC	K DRIL	LING	METHOD		<u> </u>	1		1	FOI	JIPMENT				N
D			_				SAMPLE DESCRIPTION							0
E			5	SAMPLE			SAMPLE DESCRIPTION		INST					Т
P			OCDTU		RECOVERY	1								E
1	BLOW	NU.	1		(INCHES)					LOG	MOISTUR	RE	PID	s
붠	/ 6"		(FT.)	7100(///	(INCHES)	oravel an	sub-base							
	<u></u>			<u> </u>							dry		0 ppm	
1				<u> </u>		- light brow	n medium/fine sand							
2				<u> </u>		1					dry		0 ppm	
4				<u> </u>		dark brow	n sand/gravel/slag							
3		<u> </u>		†		1	silver/black				moist		0 ppm	
						brick								
4		1				no recove	ny				moist			_
		1				brick frag	ments/sand (dark brown)		1					
5		<u> </u>	1				cinders				moist		0 ppm	
		1												
-					<u> </u>	light brow	n silty clay				moist		10 ppm	
					ļ	1							0.5	
7		1				slag					moist		0.5 ppm	'
		<u> </u>	ļ			light brov	n clay				moist/sat	urated	0 ppm	
8		<u> </u>	ļ				. <u></u>				saturated		оррт 0 ррт	-
	ļ		<u> </u>		+	-					Saturated	110131	o pp///	ļ
9						gray/gree					saturated	Vmoist	0 ppm	
					<u> </u>	- black cin	ders/slag							
10							vn/gray silt/fine sand		Į		saturated	l/moist	0 ppm	
				+			very compacted							
11		+	+	+		-1	tory comparison				saturate	l/moist	0 ppm	
					1	-1								
12	<u>├</u> ───		+				<u> </u>							
13			+	1	+	very con	npacted silt with some clay				saturate	d	0 ppm	
"	<u> </u>	+	+	1	1						ŀ			
14	<u> </u>	+	+	1		gray -> t	orown		1		saturate	d	0 ppm	
''		1		1	1	1								
15	[	1	-	1							saturate	d	0 ppm	
1		1												
16	<b> </b>	1-							_!		saturate	d	0 ppm	
F			LEGEN	D		NOTE	S: North end of parks build	ng						
	S - S	PLITS	SPOON SC	DIL SAMPL	Æ									
				OIL SAMP										
			CORE SAL											
GE	NERA		ES:											
I		1) :	STRATIFIC	CATION LI	NES REPRES	SENT APP	ROXIMATE BOUNDARY B	ETWEEN S	SOIL TYP	ES, TRANSIT	IONS MAY B	E GRADUAL.		
		2)	WATER LI	EVEL READ	DINGS HAVE	BEEN MA	DE AT TIMES AND UNDE	R CONDIT	IONS ST	ATED, FLUCT	UATIONS OF	GROUNDWA	TER	
1				MAY	OCCUR DU	E TO OTH	ER FACTORS THAN THOS	SE PRESE	NT AT TH	IE TIME MEAS	SUREMENTS		ORING #28	
LB	A								•					

00 s	TATE S	TREE		ESTER, NE	EW YORK NSULTANTS	5		PRC Port of Roch 4650 Lake A					BORING # 2 SHEET JOB # 9915 CHKD. BY:tt	1 OF 1	
	ACTO	DR: Ma	arcor					BORING LC							
	LER: Jin							GROUND S				DATUM			
ABE	LLA RE	PRES	ENTATIV	E: DEP/TM	IS			START DAT	E 8/22/00						
										T	RLEVEL	T			
TYPE	OF DA	ILL RI	G: Geo-p	robe					DATE	TIME	WATER	CASING	REMARKS		
	ER SIZE												ļ		
			MPLING I	METHOD											
100		ING N	ETHOD	:						50	JIPMENT		l		N
D	1						CAMP	LE DESCRIPTI	2N						0
E			e e	SAMPLE			SAINE			INST	ALLATION				Т
P		10	DEPTH		RECOVER	 /									E
т	BLOW	NO.		1	(INCHES)						LOG	MOISTU	RE	PID	s
н	/6"		(FT.)			gravel su	h-base	••••					flush mount	road box	
4						medium t		and				dry	- Bentonite se	eal 0'-1' 0 ppm	
1		<u> </u>											_		
2		<u></u>										dry/moist		0 ppm	
~													_quartz sand	l pack 1'-12'	
Э		dar						and gravel				dry		<b>0 p</b> pm	
_						]							1" PVC wel	2'-12'	
4	-											dry			
						dark brow	vn sand	Vgravel							
5				L		1						dry		0 ppm	
	ſ			<u> </u>		blue gray	/ slag/bi	rick						10	
					ļ	-								48 ppn	n
				<b>_</b>	ļ	dark brov	wn/blaci	k sand and cind	ers/gravel			dry		0	
7	' <b> </b>	<b> </b>												0 ppm	
						light brow	vn silt -	compacted				dry			
8	'├				<u> </u>	light brox				-		ury			
				+		light brov	WIT 511			<u>.</u>		moist		0 ppm	
9	'														
41	, <del> </del>											moist		0 ppm	
1(	′ <b>├</b> ──	<u>†</u>	+	+		1									
1	; <del> </del>	<u> </u>	<u> </u>	1	1	1		ł						0 ppm	
•	·	1	+		1	1						moist			
1:	2	+	1			1		↓							
		1	1							ł					
1	3														
						_									
1	4					4									
						_									
1	5	1				-									
		ļ				4									
1	6		1							1					
			LEGEN			NOTE		door of parks b		dan at - t	( 10' Ear	of mainten	anoo ehee		
				OIL SAMPI			Mw a	at center of build	ang approx	amately	y 40 East	ormaintena	ance snop		
I				SOIL SAM	PLE										
(			CORE SA	MPLE											
GE	NERAL	NOTE	:S:			OCHT AF						S. TRANS	TIONS MAY	BE GRADUAL.	
1		1)	STRATIF		DINGS HEPHL			T TIMES AND			ONS STA	TED. FLUC	TUATIONS	of groundw/	ATER
		2)	WAIERL		OCCI IE DI		HFR FI	ACTORS THAN	THOSE P	RESEN	IT AT THE		ASUREMEN	IS WERE MADE	
				641 <del>7</del> 4 1	JUJUON DI									BORING # 29/M	

			<u> </u>							<u> </u>	000000 # 2		
AB			CIATES, P			PROJE					BORING # 3		
C.	:	STRE	ET, ROCH	IESTER, N	IEW YORK	Port of Rocheste						1 OF 1	
•						4650 Lake Aven	ue				JOB # 9915	U	i
INV	RONN		L ENGINE	ERING CC	ONSULTANTS					L	CHKD. BY	· - ·	
100	TRAC	TOR	Marcor			BORING LOCA							
DAIL	LER		Jim			GROUND SUR	FACE ELEVA	TION		DATUM			
AB	ELLA F	REPRE	SENTATI	/E	DEP/TMS	START DATE 8	/23/00	END (	DATE 8/23/00				
								WATE	R LEVEL DATA	1			
ΥP	EOFC	RILL	RIG	geo-probe	)		DATE	TIME	WATER	CASING	REMARKS	·	
NUG	ER SI	ZE AN	D TYPE							<u> </u>			
			AMPLING	METHOD						· · · · · · · · ·			
100	K DRI	LLING	METHOD										
D								EQ	JIPMENT				N
E			S	AMPLE		SAMPLE DESCRIPTION		ĺ					0
P								INST	ALLATION				T
т	BLOW	NO.	DEPTH	N-VALUE	RECOVERY	1							E
н	/6"		(FT.)	/RQD(%)	(INCHES)				LOG	MOISTU	₹E	PID	s
		<u> </u>				gravel							
1						]				dry		0 ppm	
						medium brown sand							
2								l		dry		0 ppm	
						slag/brick/fill/sand		ĺ					
3										diry		0 ppm	
								1					
4								ļ		dry			
						medium brown sand - coal, iron ore o	chips, some	1					
5						conglomerate, shell fragm	ients			dry		0 ppm	
						slag/brick						_	Ì
		· .				layer of ash/slag		1		dry		0 ppm	
	ı					_		1					
7			I			brown and black sift with fine sand, s	some slag wa	ste		moist		0 ppm	ļ
						and rock fragments						_	
8										moist/sa		0 ppm	
										saturated	1/moist	0 ppm	
9					<u> </u>					Í			
	Ĺ_									saturate	1/moist	0 ppm	·
10				1		_							1
				1		brown firm silt with clay				saturate	d/moist	0 ppm	
11								1				0	
1					<u> </u>	4				saturate	d/moist	0 ppm	
12					l			- <u> </u>	<u> </u>		<u> </u>		$\neg$
					l	4							
13						4							
		_				-							
14						_							
		_	1			4		1					
15													
l						4							
16	<u>ا، ا</u>	1		<u> </u>	<u> </u>							no.46 46 40	<u> </u>
1			LEGEN			NOTES: refusal at 5' - start over a				tan over ap	proximat 10'	nonn, then 3' we	51 UI WH
1			SPOON SC			Sixth attempt approximation	tely 45' east o	of park	structure				
	U-1	JNDIS'	FURBED S	OIL SAMF	LE								
L	C-1	ROCK	CORE SAM	IPLE		<u> </u>						·	
G	NER/	L NOT	ES:										
		1) :	STRATIFIC	ATION LI	NES REPRES	ENT APPROXIMATE BOUNDARY B	ETWEEN SO	IL TYP	PES, TRANSITIC	ONS MAY B	E GRADUAL		
İ		2)	WATER LE	VEL REAL	DINGS HAVE	BEEN MADE AT TIMES AND UNDER	R CONDITIO	NS ST	ATED, FLUCTU	ATIONS OF	GROUNDW	ATER	
				MAY	OCCUR DUE	TO OTHER FACTORS THAN THOS	E PRESENT	AT TH	IE TIME MEASU	JREMENTS	WERE MAD	E	
և												BORING #30	

AB		ASSO	CATES, P	.c.			PROJE	ст				BORING # 31			
r					EW YORK		Port of Rocheste	ər			1		OF 1		
							4650 Lake Aven	ue				JOB # 99150			
ENV		IENTA		ERING CC	NSULTANTS							CHKD. BY			
			Marcor				BORING LOCA	TION							
	LER	-	Jim				GROUND SURF	ACE ELEVA	TION		DATUM				
		EPRE	SENTATI	/E	DEP/TMS		START DATE 8	/23/00	END	DATE 8/23/00					
									WATE	R LEVEL DAT	Α				
YP	EOFD	RILL	RIG	geo-probe				DATE	TIME	WATER	CASING	REMARKS			_
			D TYPE	•											
			AMPLING	METHOD											
			METHOD												
D									EQ	JIPMENT					N
E			s	AMPLE		SA	MPLE DESCRIPTION								0
P									INST	ALLATION					Т
	BLOW	NO.	DEPTH	N-VALUE	RECOVERY										E
н	/6"		(FT.)	/RQD(%)		1				LOG	MOISTUR	RE	PID	)	s
		<u>├</u>	·····	,,	·····································	gravel									
1				1		17	h fine-medium sand				dry		0 pj	pm	
•		1		1		1	xed with gravel/rock frag	gments							l
2		1		<u> </u>		1	-		1		dry		0 p	pm	1
2			<u> </u>	<u> </u>											1
3		<u> </u>	<u> </u>	1.	<u> </u>	1					dry/moist	no o	dor 17	ppm	1
3		<u> </u>		1		gray/brown s	ill/fine sand		1		1				
4		-				]					dry/moist		3 p	pm	
7		+		<u> </u>		brown mediu	im sand	·							
5		1-				1					moist		Оp	pm	
5		┼				- brown->red/r	rust fill - slag waste - iror	n							
_	; <sup></sup>	1	+	<u> </u>		-	lling*/stained silt		1		moist		0 p	pm	
-		1	1	<u> </u>		1 "	•								1
7	┣	+			1	brown silt/fin	e sand with some clay				moist		0 p	юргп	
'	<u> </u>	1	┫╌╶───		1	-			ł						1
8	<u> </u>	+	+	+	1	1					moist/sat	urated	0 p	pm	
0	<b> </b>	+	+		1	+		· <u>-</u> ·	1		saturated	l/moist	0 p	pm	
9	<u> </u>		1		+	brown silt/fin	e sand								
3			+		1	1					saturated	1/moist	0 p	ърт	
10	<u> </u>	+	+	1		-									
		1		1		brown sitt/fin	he sand with some clay				saturated	l/moist	0 p	mqc	
11	<b> </b>		+	-											
1"	<u> </u>	+	+	+		1					saturate	đ	0 1	ppm	
			+	+		-							-		
12		+	+	+		1			1						1
		+		+		-									
13				+		1									
		+				-						•			
14		+			+	-1									
	. <b> </b>		-+			-									
15	'			+		1									
	. <del> </del>	┣━━╋━╋━━╋				-					1				
10	<u>'</u>	<u> </u>	LEGEN			NOTES	lowngradient (approx. 1)	2') from AST	i S		<b>k</b>				
				_	F		omgravion (approx. n	-,	-						
					LC										
-			CORE SAL	MPLE	·	<u>·1</u>				·····					
G	INERA						KIMATE BOUNDARY B	ETWEEN CO		ES TRANSITI	ONS MAY R	EGRADUAI			
													FR		
i l		2) '	WATERL				AT TIMES AND UNDER								
				MAY	OCCUR DUE	2 IU OIHERI	FACTORS THAN THUS	C FREGENI	I				RING #3		
11.6												100	C. M. K. F. M. M. C. M. M. C. M.		

			CIATES, P.		EW YORK	PROJE Port of Rochest					BORING # 32 SHEET 1	OF	
0/	1					4650 Lake Aver					JOB # 99150 CHKD. BY		_
				ERING CO	NSULTANTS	BORING LOCA	TION			. <b>I</b>			
			Marcor Jim			GROUND SUR		ATION		DATUM			ļ
			SENTATIV	/E	DEP/TMS	START DATE 8	/23/00	END C	ATE 8/23/00				
AB		EPHC	SENTATIV		Delivino		T	WATE	R LEVEL DAT	Α			
	E OF D		216	geo-probe			DATE	TIME	WATER	CASING	REMARKS		
			D TYPE	ace biere									
			AMPLING	METHOD									
			METHOD	MEIII02									
	K Drit	CITO						EQL	JIPMENT				N
ε			s	AMPLE		SAMPLE DESCRIPTION							
P								INSTA	LLATION				
т	BLOW	NO.	DEPTH	N-VALUE	RECOVERY								E
н	/6"		(FT.)	/RQD(%)	(INCHES)			_	LOG	MOISTU	RE	PID	s
						blacktop							
1						gravel sub-base				moist			
						4						0	
2		L				brown medium sand				moist		0 ppm	
		ļ	·	ļ		4				moist		0 ppm	
3		ļ		ļ		-				TROISE		o ppin	
						4				moist			
4			ļ		<u> </u>				·· ·	1110101			
			<u> </u>			gray sitt/fine sand				saturated	1	0 ppm	
5		_−			<u> </u>	mixed fill & slag, silt/sand wih brick f						••	
	! 	<b>_</b>	<u> </u>			mixed fill & slag, silvsalid with blick i	ays			saturated	i	0 ppm	1.
		ł				-		Ì					
	Í	┨			+	-							
7	┣───	┼─-				1							
~	┣—				+								
8			<u> </u>										
9		+		1		-							
3	<u> </u>	+		+									
10	┣	1	<u> </u>	1		7							
		-	1			7							
11		1				]		1					
		1	1										
12													-
13													
						_							
14						_							
						-1							
15	·		<b>_</b>			-4							
			- <b> </b>			-1							
16				<u> </u>					maint Shon	l			
			LEGENI		_	NOTES: MW @ center of building		east of	maan, Stop				
				HL SAMPL		rejected 1st attempt at 6							
				OIL SAMP	LE								
-			CORE SAL	MPLE		<u></u>				<u></u>			
GE	INERA		ES:			ENT APPROXIMATE BOUNDARY B			ES, TRANSIT	IONS MAY E	E GRADUAL.		
		1) (	STRATIFIC			BEEN MADE AT TIMES AND UNDE	RCONDITI	ONS ST	ATED. FLUCT	UATIONS O	F GROUNDWA	TER	
		2) 1	WATERU			E TO OTHER FACTORS THAN THO	SE PRESE	IT AT TH	E TIME MEA	SUREMENT	S WERE MADE		
1				MAN				•			(e	ORING #32	
LE	58												

ţ

AB			ET, ROCH	.C. IESTER, N	EW YORK	PROJEC Port of Rocheste Between 2 Ware	ər				JOB # 99150	OF 1	
INV	RONM	ENTA	ENGINE	ERING CO	NSULTANTS					1	CHKD. BY		
· · ·	TRACT					BORING LOCA	TION						
	LER		Jim			GROUND SURF	ACE ELEV	ATION		DATUM			
		EPRE	SENTATI	'E	DEP/TMS	START DATE 8	/23/00	END C	DATE 8/23/00				
								WATE	R LEVEL DAT	Α			
	E OF D			geo-probe			DATE	TIME	WATER	CASING	REMARKS		
			TYPE					+					
				METHOD									
300	K DRIL	LING	METHOD			r	1				<u></u>		N
D								EQU	JIPNIENI				0
E			S	AMPLE		SAMPLE DESCRIPTION		IN INT					Т
Р			· <u> </u>						ALLATION				Ē
т	BLOW	NO.	DEPTH	N-VALUE	RECOVERY			1			~~	010	1
н	/ 6"		(FT.)	/RQD(%)	(INCHES)				LOG	MOISTUR	1E	PID	s
				L		asphalt/gravel		1		1.		~	
1						ļ				dry		0 ppm	
						coarse sand/gravel						_	1
2		[]						1		dry		0 ppm	
3						blue slag				dry/moist		0 ppm	
-						medium gravel		Ì					ļ
4										moist	···	0 ppm	4
•						slag (blue/gray)							
5		1			-	red gravel				moist		0 ppm	
Ű		+		1		brown/black gravel							
-										moist		0 ppm	
-		1				brown silt							
-			<u> </u>					i i		moist		0 ppm	
7		<u>+</u>		+	<u> </u>	gray silt (some clay)							
		+								moist/sa	turated	0 ppm	
8	ļ		+	+			·			saturated	d/moist	0 ppm	
	<b>├</b>			+	+	red gravel (shell chips)							
9		+			<u></u> +−−−−					saturate	d	0 ppm	
			<u> </u>			gray/brown silt							
10	<b> </b>		+			dark brown organic				saturate	d	0 ppm	
	<b> </b>		+		+	Inder Dioteri orBenico							
11		+	1			-				saturate	d	0 ppm	
	<b> </b>		<u> </u>			fine gray sand						••	
12	·		<u> </u>	_									7
	<b> </b>		<b></b>		+	-{							
13	·		┨────		+								
	<b> </b>				+	4							1
14	·					-{		1					
								Ì					
1	·		<u> </u>					1					
	<b></b>												Ì
1	3	1	1							l			
			LEGEN			NOTES: eastern most point betw	een 2 wareh	ouses					
	S - S	PLIT S	SPOON S	DIL SAMPL	.E								
	U-L	INDIS	TURBED S	SOIL SAMF	LE								
1	C-F	ROCK	CORE SA	MPLE									
G	ENERA	LNOT	ES:										
1		1) :	STRATIF	CATION LI	NES REPRES	SENT APPROXIMATE BOUNDARY B	ETWEEN S	OIL TYP	PES, TRANSIT	IONS MAY E	BE GRADUAL.		
		2)		EVEL REA	DINGS HAVE	BEEN MADE AT TIMES AND UNDE	R CONDITH	ONS ST	ATED, FLUCT	UATIONS O	F GROUNDWA	TER	
ŧ		-1		MAY	OCCURDU	E TO OTHER FACTORS THAN THO	SE PRESEN		HE TIME MEA	SUREMENT	S WERE MADE		

BORING #33

LBA

n

.

LABE	LLA AS	SOCI	ATES, P.C	).			PRO	JECT	·			BORING # 34/MW	/-6	
300 S	TATE	STREE	T, ROCH	ESTER, N	EW YORK		Port of Roch	ester				SHEET 1 O	F 1	
ENVI	RONME	ENTAL	ENGINE	ERING CO	NSULTANT	S	Between 2 V	Varehouse	S			JOB # 99150		
												CHKD. BY:tms		
<u>م</u>	RACT	DR: M	arcor				BORING LC	CATION						
ا.	_ER: Jir	n					GROUND S	URFACE I	ELEVA	TION	DATUM			
LABE	LLA RE	PRES	ENTATIV	E: DEP/TN	AS		START DAT	E 8/23/00	END	DATE 8/23	3/00			
									WATE	ER LEVEL				
ТҮРЕ	OF DF	RILL R	IG: Geo-p	orobe				DATE	TIME	WATER	CASING	REMARKS		
AUGE	ER SIZE	E AND	TYPE					ļ						<u>.                                    </u>
OVE	RURD	EN SA	MPLING	METHOD					<u> </u>					
ROC			IETHOD			·		· ·				L		1.
D				•					EQ	JIPMENT				N
Е			ę	SAMPLE			SAMPLE DESCRIPTION	N						
Р				L	[	]			INST	ALLATION				T
Т	BLOW	NO.		1	RECOVER	r 1				100	MOIOTU			E
Н	/6"		(FT.)	/RQD(%)	(INCHES)					LOG	MOISTUR	· · · · · · · · · · · · · · · · · · ·	PID	s
							4 h				day	flush mount road I		ł
1						gravel su	D-Dase				dry	Bentonite seal 0.5	-2.5	
_						slag			1 2		moist	-	33 ppm	
2					· · · · · · · · · · · · · · · · · · ·	modium	coarse sand				moist	quartz sand pack		
3						medium-	some odor - gray stair	ed			moist	_qualiz salid pack	67 ppm	
3	<u> </u>					gravel	Some odor - gray Stan	cu				1" PVC solid riser		
4	<u> </u>	<u> </u>			·	giatei					moist			
4												·····		1
5						gravel					moist/sat	urated		
Ŭ					1	red slag	black/stained gravel					1" PVC Well	2000 ppm	י ר
	۱ <u>ــــــــــــــــــــــــــــــــــــ</u>		<u> </u>			gravel	<b>.</b>					- screen 3.5'-5.5'	(high)	
	<u></u>													
7						1								
		1												
8														
9				L										
			 			-								
10						-								
	<u> </u>	ļ				1			1					
11	<u> </u>		ļ	<u> </u>		4								
1	<b> </b>	<u> </u>			<u> </u>	-			1					
12	<b> </b>	<b> </b>	ļ						4	$\vdash$				+
	<b> </b>	ļ			· ·	-					1			
13					+	-			1					
			<u> </u>			-					i			
14				+		4								
			┨			-				1				
15			<u>                                      </u>		+	4								
				+		-								
16	<u> </u>	1		<u> </u>	1	NOTE	Durafunal at E E'	<u>-</u>		J	1,	·····		<u> </u>
	0.07	י די וכ		2 DIL SAMPL	E		3: refusal at 5.5'							
				OIL SAMPL		,								
1			ORE SAM											
IČE	ERAL I					1	·····					<del>_</del>		
Gen	ICNAL I						PROXIMATE BOUNDA	RY BETW	EEN SO		. TRANSI		ADUAL	
1							IADE AT TIMES AND U							B
1		<i>4</i> , 4					IER FACTORS THAN 1							
LBA													IG # 34/MW-	 6

LAB	ELLA /	ASSO	CIATES, P	.C.			PR	OJECT				BORING #	35		
					IEW YORK		Port of Roc					SHEET	1. OF	1	
	TAIL	unt						Warehouses				JOB # 9915			
2						、	Detween 2	rraienouses				CHKD. BY			
				ERINGCO	ONSULTANTS						. I	CHKD. BT			
		FOR	Marcor				BORING LO	•							
DRIL	LER		Jim					SURFACE ELE			DATUM				
LAB	ELLA R	EPRE	SENTATI	/E	DEP/TMS		START DA	TE 8/23/00		DATE 8/23/00					
									WATE	ER LEVEL DAT					
ΤΥΡ	E OF D	RILL	٦IG	geo-probe	)			DATE	TIME	WATER	CASING	REMARKS			
AUG	ER SIZ		D TYPE												
OVE	RBUR	DEN S	AMPLING	METHOD							:				
RÓC	K DRIL	LING	METHOD												
D									EQU	JIPMENT					Ν
E			s	SAMPLE		5	SAMPLE DESCRIPTI	ON							0
P			-			-			INST	ALLATION					т
	BLOW	NO.	лерты		RECOVERY										Е
		110.								LOG	MOISTUR	9E		PID	s
H	/6"		(FT.)	/RQD(%)	(INCHES)										
		<b>!</b>		<u> </u>		gravel	t for attende							0	
1		<b> </b>			<b>↓</b>	prown sand	d (medium - coarse)		1					0 ppm	
				ļ	<u> </u>	4									
2		ļ			ļ	gravel/sand	t		1					0 ppm	
				ļ		1									
3		ĺ				gray silt								400 ppm	i
									1					(last 4* only)	
4						no recovery	у								l
						1									l
5		-				1			1					100 ppm	1
Ŭ						gravel/blue	slao							140 ppm	
	'			+		9.0.000.000	liug		1						
·	<b></b>		···		+										
_						-									
7		╂━──				-									ł
						4									
8	<u> </u>					-									
		ļ	ļ	<u> </u>		-									
9			ļ			4									
						4									
10	L														
									1						l
11															
		1	1		1										
12	<u> </u>	1	1	1	1	1									
	<b></b>	1	1	1	1	1			-						
13	<u> </u>			1		1									
13	<u> </u>	+	1	1	1	1									
	<u> </u>	+	+		<u>+</u>	4					1				
14	├			+	+	-									
	⊢	+		<u> </u>		-									1
15	<b></b>	·	<b> </b>			4									1
		1		ļ		_					Į				
16					<u> </u>										
			LEGEND	2		NOTES:	refusal at 5.5'								
	S - SF	PLIT S	POON SO	IL SAMPLE	E										
	U - U	NDIST	URBED S	OIL SAMPI	LE	1							•		
1			ORE SAN												
GE	NERAL					_ <b>I</b>									
							XIMATE BOUNDAR			ES TRANSITI					
		-													
		2) V	VATER LE				E AT TIMES AND UN		-						
				MAY	OCCUR DUE	TO OTHER	FACTORS THAN TH	HOSE PRESEN	NT AT TH	IE TIME MEAS	UREMENTS				
LB.	Α												BORING	G #35	

								PROJE	СТ				BORING # 3	6	
	ELLA /	1850(	CATES, P	.C.			Dort	of Rocheste						OF 1	
or (	E	STRE	ET, ROCH	IESTER, N	EW YORK		. ·						JOB # 99150		
;	1						Betw	een 2 Ware	1110U262				CHKD. BY		
	· · ·			ERING CC	NSULTANTS	<u> </u>	L			~	· · · · · · · · · · · · · · · · · · ·	l			
ON	TRACT	ror	Marcor					ING LOCA							
RIL	LER		Jim						FACE ELEV			DATUM			
ABE		EPRE	SENTATI	/E	DEP/TMS		STA	RT DATE 8	/23/00		DATE 8/23/00				
										- T	R LEVEL DA		DEMO		
YPI	E OF D	RILLF	RIG	geo-probe					DATE	TIME	WATER	CASING	REMARKS		
			D TYPE												
			AMPLING	METHOD								·			
			METHOD						<u> </u>	_			l		·
D			···· ····							EQU	JIPMENT				N
E			S	AMPLE			SAMPLE DES	CRIPTION							0
P			~							INST	ALLATION				Т
}	BLOW	NO.	DEPTH	N-VALUE	RECOVERY	1									E
- 1		1.0.		/RQD(%)							LOG	MOISTUR	RE	PID	s
н	/6"		(FT.)	/100(%)		gravel su	h-base			_					
						Jyraver Su	0 0400					moist		0 ppm	
1		<b> </b>	<u>↓</u> ·			1	odium brown co	nd							1
		<b> </b>				coarse/m	edium brown sa			1				0 ppm	
2		<b> </b>	ļ	<b> </b>		-						moist		- ٣٣."	
		<b></b>	ļ	ļ		rock frag	ments					TIOISI		0 ppm	
3	l	L	ļ	ļ	<u> </u>	4								0 1911	
				ļ		1						moist			
4					ļ	no recov	ery	. <u> </u>							
	1				L	1									
5				1		brown gr	avel					saturated	1	0 ppm	
-	<u>├</u> ──	1	1	1		]									
_		1	1	1		black gra	avel							0 ppm	
		1	1			7						saturated	1		
7	<u>├</u>	+		1		1								0 ppm	
1		+		1	1	coarse s	and					saturated	ł		1
~		+	+	+		1								·	
8	<u> </u>	+	+		1	1									
_		+		+		-									ļ
9						-1									1
				+		-1									
10	<u> </u>			+		-				1					
				+	+	-									
11	<b></b>	<u> </u>		+		-{									
	L	1													
12		1											·		
	L					4									1
13			<u> </u>			_									
						_				1					
14						_									
		1													1
15		T													
<u>ן</u>			1			-7									
16	. <b> </b>	+	+	1	1	7									
10	<u>'</u>		LEGEN	 D	1	NOTE	S: refusal at 5.5	,							
		DI 17 1		DIL SAMPL	F										
				SOIL SAMP	LC	1									
_			CORE SA	MPLE		<u></u>					<u></u>				
GE	:NERA		ES:												
		1) 1	STRATIFIC	CATION LI	NES REPRES	SENT APP	ROXIMATE BO	UNDARY E	ETWEEN S		TES, IMANSI	TUNO MAT E			
1		2) \	WATER LE	EVEL REA	DINGS HAVE	BEEN MA	DE AT TIMES	AND UNDE		ONS ST	ATED, FLUC	TUATIONS O	GROUNDW	AICH	
				MAY	OCCUR DU	Е ТО ОТН	ER FACTORS T	HAN THO	SE PRESE	NT AT TH	IE TIME MEA	SUREMENTS	S WERE MAD	E	. —
lue	A								. <u></u>					BORING #36	

		6504	CIATES, P					PR	OJEC	r		<u></u>		BORING # 3	7	]
					IEW YORK			Port of Roc						SHEET	1 OF 1	
7		9116						Between 2						JOB # 99150	)	
					NSULTANTS		Ì							CHKD. BY		
_			Marcor				I	BORING L	OCATI	ON						
	LER		Jim					GROUND			ATION		DATUM			
			SENTATIN	/E	DEP/TMS			START DA	ATE 8/2	3/00	END	DATE 8/23/00				
									T		WATE	R LEVEL DAT	A			
YPI	E OF D	RILLE	રાG	geo-probe	•				C	DATE	ТІМЕ	WATER	CASING	REMARKS		
			D TYPE	• •												
			AMPLING	METHOD					Ē							
			METHOD								_			 		
D											EQ	JIPMENT				N
E			s	SAMPLE			SAMPLE	DESCRIPT	ION							0
P					· · · · · · · · · · · · · · · · · · ·						INST	ALLATION				T
т [	BLOW	NO.	DEPTH	N-VALUE	RECOVERY											E
н	/ 6"		(FT.)	/RQD(%)	(INCHES)							LOG		RE	PID	<u> </u>
					ļ	black top							1		_	
1				L		gravel					1		moist		0 ppm	
					ļ	4									_	
2		L		<b> </b>	ļ	brown sill	with rock	fragments a	and blue	e slag					0 ppm	
		L		ļ		-							moist		0	
3		<u> </u>	ļ	ļ		4								unato -	0 ppm	
		ļ	ļ	ļ	ļ	-							moist/sat	urated		
4			<b> </b>	<b> </b>	<u>↓</u>	rust/red s	ill/sand							·		
					<u> </u>	┥	. 60. 1	lattar in t		0.000			saturated		0 ppm	
5		ļ	<b> </b>	<b> </b>		1		lation waste	, some	siag			Saturated		о ррн	
						mixed wit	in sand						1		0 ppm	
<u>-</u>		<b> </b>	ļ	+		1							saturated	ł	• Pbii	
	├				<u> </u>	-	tino enc-	l -firm					Jaidiaiet	-	0 ppm	
7	<u> </u>	<b> </b>			<del> </del>		t/fine sand	- 191111					saturated	i	· • • •	
-	<b> </b>	╂	<u> </u>	<u>+</u>		-										
8			1	+	+	+										_
9		+		+		1										
А		+	<del> </del>	<u>+</u>		1										
10		1	<u> </u>		+	1										
10	<u> </u>	1	1		1	1							ļ			ĺ
11		1		1		1					ł					
''		+	1			1										
12	<b> </b>	+		1		1										
"	<b> </b>	1	1	1	<u> </u>											
13	-	1				1										
"	-	1	1	1	1	7										
14	<b> </b>	1				]										
		1											ļ			
15		1														
1			1										i			
16																]
			LEGEN	2	_	NOTE	S:	x36								
	S - S	PLIT S	POON SC	DIL SAMPL	Æ		x38	<b>x</b> 35		x37						
	U-U	NDIST	IURBED S	OIL SAMP	'LE		x34 (m	w)	x33	3						
	C - F	OCK	CORE SAM	MPLE						<del>_</del>						
GE	NERA	LNOT	ES:													
ł		1) 5	STRATIFIC	ATION LIP	NES REPRES	ENT APPI	ROXIMAT	E BOUNDA	RY BE	TWEEN S	OIL TYP	ES, TRANSIT	IONS MAY B	E GRADUAL.		
		2) \	NATER LE	EVEL READ	DINGS HAVE	BEEN MA	DE AT TI	MES AND U	INDER	CONDITI	ONS ST	ATED, FLUCT	UATIONS OI	GROUNDW	ATER	
ŀ				MAY	OCCUR DUE	E TO OTH	ER FACTO	ORS THAN	THOSE	PRESEN	IT AT TH	IE TIME MEAS	SUREMENTS			
LE	A														BORING #37	

**,** .

ABI		ASSO	CIATES, P	.C.			PROJE	СТ				BORING # 38		
<b>D</b> V	Ì	STRE	ET, ROCH	IESTER, N	EW YORK		Port of Rocheste	ər				SHEET 1 OI	= 1	
	,						Between 2 Ware	ehouses				JOB # 99150		
NVI	RONN	ENTA	LENGINE	ERING CO	NSULTANTS	;					l	CHKD. BY		
ON	TRAC	TOR	Marcor				BORING LOCA		TION		DATUM			
	LER		Jim							DATE 8/23/00	DATOW			
B		EPRE	SENTATI	/E	DEP/TMS		START DATE 8	23/00		R LEVEL DATA				
				ass stabs				DATE	TIME			REMARKS		
		RILL		geo-probe										
			D TYPE	METHOD										
			METHOD	METHOD								L		<b>-</b>
Ĩ									EQU	JIPMENT				N
:			s	AMPLE			SAMPLE DESCRIPTION							0
•						4			INST	LLATION				
· [	BLOW	NO.	DEPTH	N-VALUE	RECOVERY						MOIDTI		PID	E
4	/6"		(FT.)	/RQD(%)	(INCHES)					LOG	MOISTU		FID	
		<b> </b>				black top					moist		mqq 0	1
1						sub-base			1				- pp	
	<u>.</u>					hrown-bis	ck silt/medium sand with g	ravel:					0 ppm	
2	<b>.</b>				<u> </u>		slag and rock frags				moist			
3	<u> </u>					1					1		0 ppm	
"	. <u></u>		<u> </u>			1			1		moist/sat	urated		
4						1								4
		<u> </u>				1								
5					L	_			1		saturated	t	0.3 ppm	
	-	1		<u> </u>		4								
٦			ļ		<u> </u>	-1 -	fragments		ŀ		saturate	4	0.5 ppm	
		<u> </u>				rejected					Saturated	1	0.5 ppm	1
7				+	Į	-								
						-								
8						+	<b>11</b>							
9					1	1					)			
-		1												
0					ļ	4								
		1		ļ		4								
1		_	1	1	ļ	-1								
		<u> </u>				-			1					
12			+											1
	<b> </b>				+	-								
13		+	+			1								
14		+	+		1									ļ
. 4	<u> </u>		1	1		1								
15														
16				1										
			LEGENI			NOTES	6:							
				DIL SAMPL										
				OIL SAMP	LE									
			CORE SAN	APLE										
GE	NERA		ED: RTDATIEN				ROXIMATE BOUNDARY B	ETWEEN SC	IL TYP	ES, TRANSITIC	ONS MAY E	E GRADUAL.		
		- 1) i - 2) i			NGS HAVE	BEEN MA	DE AT TIMES AND UNDE	R CONDITIO	NS ST	ATED, FLUCTU	ATIONS O	F GROUNDWATER	l	
		<i>4</i> ) \			OCCUR DUI	E TO OTHE	ER FACTORS THAN THOS	SE PRESENT	AT TH	IE TIME MEASU	JREMENT	S WERE MADE		
LØ	A												NG #38	
							······································							

~

	Та	rget D	rilling C	compa	any				Test Boring No.: B05-2	
		1850 L	akeville	e Roa	d				Job No 5505	
	A	von N	ew Yor	k 144	14				Page: 1 OF 1	
									Report Date: 5/10/2005	
iec	t:	PORT C	F ROCH	IESTE	R				· · · · · · · · · · · · · · · · · · ·	
								<u></u>		
	-				, .			Geologist:		
				· 				Driller:	S. KAHN	
ow	Su	rface - C	Casing <u>C</u>	)ut:						
aso	nal	and clir	natic cha	anges i	may alte	r obs	erved	l water level	S	
		Blo	ws on	Samp	ler					
	C			-		N	S	Sample	Soil and Rock Information	
)	╏─┟	0"/6"	6"/12"	12"/18	18"/24"		No.			
1850 Lakeville Road       Job No       5505         Avon, New York 14414       Page:       1 OF 1         Project:       PORT OF ROCHESTER       Report Date:       5/10/2005         Client:       LABELLA ASSOCIATES, PC       Geologist:       5/10/2005         Elevation:       253, 6       Oriller:       S. KAHN         Water Level - Casing In:       Driller:       S. KAHN         Below Surface - Casing Out:       Start:       5/10/2005         Completed:       5/10/2005         Seasonal and climatic changes may alter observed water levels.         Blows on Sampler       N       Sample         Soil and Rock Information										
				3	7	4	1	0'0"-2'0"		
	$\vdash$ †	11	12						FOUNDRY SAND AND SLAG	
				11	6	23	2	2'0"-4'0"	FILL MATERIAL ( SAME )	
5		6	6							<u>4'6"</u>
				5	4	11	3	4'0"-6'0"		
	$\square$	3	3		<u> </u>					70
	Н			3	· · · · ·	6	4	6.08.0.	MEDIUM GRET GREEN MOIST TO WET	70
^	┣	5	2			6	5	8'0"-10'0"	I OOSE GREY SATURATED M-VE SAND J ITTLE	
<u> </u>	┝╌┨						<u> </u>			
	H						{			
	H								(MUDDED BORING FROM 10' TO TERMINATION)	
	H									
5										
		4	4							
				5	ļ	9	6	15'0"-16'6"	· · · · · · · · · · · · · · · · · · ·	
	Ц								WOOD)	
~										18'0"
.0	$\square$									100
	Н	3		3	<u> </u>	6	7	20'0"-21'6"	MEDIUM DARK BROWN SATURATED ORGANIC SILT	
	Η			† Ť	+	١Ť		100 1,0		<u>23</u> '0"
	H			†	1	<u>                                      </u>				
25										
		2	4							
				5		9	8	25'0"-26'6"		
			ļ	ļ	<b>_</b>	ļ				
	Ц		<b> </b>		<b> </b>	<b> </b>			UNEDVOIDENETDATION	
sU		50/0	<b> </b>	<u> </u>	<u> </u>	6010		20101 20101		
		56/6	<b> </b>		<u> </u>	100/0		300-306"		
		50/2	<u>}</u>			50/2	a	33'6"_33'8"	VERY DENSE GREY BLACK ROCK FRAGMENTS	
		50/2	<u>                                     </u>		<u> </u>	100/2	<u> </u>	330-330		34'4"
5	-					+	<u> </u>			<u><u>v</u><u>1</u><u>7</u></u>
5.5		-	1	1				1		

ł

		arget D							Test Boring No.: B05-3	
		1850 L	akeville	e Road	b				Job No 5505	
	Α	von, N	ew Yor	k 144	14				Page: 1 OF 3	
									Report Date: 5/20/2005	<u> </u>
		PORT C								
	and the owner of the local division of the l	LABELL		CIATE	S, PC			O a sta state		
		: 253		•				Geologist:	S. KAHN	
		evel - Ca	-						5/19/2005	
Below	ວເ	urface - (		///				Completed:		
Seaso	ona	I and clir	natic cha	anges r	nay alte	r obs		d water level		1
			ws on							
				•		N	5	Sample	Soil and Rock Information	
0		0"/6"	6"/12"	12"/18	18"/24"		No.	depth		
	$\square$	10	21					·	TOPSOIL AND ORGANIC MATTER	0'5"
				12	13	33	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT, SAND AND GRAVEL	
		7	8							
-			40	15	16	23	2	2'0"-4'0"	FILL MATERIAL C/O SILT,SAND AND GRAVEL, TOPSOIL, SLAG AND FOUNDRY SAND	<u>5'0"</u>
5	$\left  - \right $	7	10	8	7	18	3	4'0"-6'0"	STIFF GREY BROWN MOIST MOTTLED SILT,	
		8	8	<u> </u>		10	<b>–</b>	40-00	LITTLE CLAY	6'0"
	H			12	10	20	4	6'0"-8'0"	FIRM GREY SATURATED M-VF SAND, TRACE	
									SILT	
10										
	Ш	3	5	<u> </u>		40	_	401011 44161		
	$\square$			8		13	5	100-110	FIRM GREY SATURATED ( LITTLE M-F GRAVEL )	
	Н									
15				<u> </u>					(MUDDED BORING FROM 15' TO TERMINATION)	
		5	5							
		<b></b>		4		9	6	15'0"-16'6"	LOOSE GREY SATURATED	
				<b> </b>						
20	-						┢───			
	+	4	4				1			1.
				4		8	7	20'0"-21'6"	LOOSE GREY SATURATED ( MARL NOTED )	21'2"
								4	MEDIUM GREY SATURATED SILT, SOME VF SAND	23'0"
25	-	<b> </b>						4		
25	╋	1	2				<u> </u>	1		
	$\vdash$	<u>                                      </u>		3		5	8	25'0"-26'6"	MEDIUM GREY SATURATED ORGANIC SILT	
						1				
								]		
30						ļ		4		
	$\vdash$	2	1	2	<b> </b>	3	9	30'0"-31'6"	SOFT GREY SATURATED	
				2		13	19	300-310	SOFT GRET SATURATED	
		+	<u> </u>	+	<u> </u>	<u> </u>	+	1		
35					1			1	· · · · · · · · · · · · · · · · · · ·	
		Blows to		Spoon		-	140	-	<u>0" Ea. Blow</u>	
N=No	. of	Blows to	Drive	Spoor	۱	with	· · ·	lb. wt	Ea. Blow	

	Та	raet D	rilling C	Compa	any				Test Boring No.: B05-3	
			akeville						Job No 5505	
	A	von. N	ew Yor	k 144	14				Page: 2 OF 3	
		,							Report Date: 5/20/2005	_
			F ROCI							
			A ASSC		S, PC			Coologist		
Eleva	tion	<u>253</u>	. え sing In:	•				Geologist: Driller:	S. KAHN	
			Casing (						5/19/2005	
			-					Completed:	5/20/2005	
Seaso	onal	and clin	natic ch	anges i	may aite	r obs	erve	d water leve	ls	
		Blo	ws on	Samp	ler					
						Ν		Sample	Soil and Rock Information	
35		0"/6"		12"/18	18"/24"		No.	depth		
	$\left  - \right $	W/R	W/H	2		2	10	35'0"-36'6"	SOFT GREY SATURATED ( LESS ORGANICS )	
	$\vdash$			<u> </u>		<u>~</u>	10	000-000		
40				<u> </u>						
	H	W/H	2	2		4	11	40'0"-41'6"	SOFT GREY SATURATED (MORE ORGANICS)	
	H			<u>                                     </u>						
45	+	W/H	W/H	<b>_</b>		<u> </u>				
	Н	VV/H		W/H	<u> </u>	W/H	12	45'0"-46'6"	VERY SOFT GREY SATURATED	
50						ļ				
50	+	W3/H	2				<u> </u>			
	Η			2	·	4	13	50'0"-51'6"	SOFT DARK GREY SATURATED ( LESS ORGANICS	
									MARL NOTED )	
55	$\square$		ļ							
	+	W/H	3				<u>†</u>			
				4		7	14	55'0"-56'6"	MEDIUM DARK GREY SATURATED	
						<u> </u>	ļ	4		
60					<u> </u>			4		
	-	W/H	2		<u> </u>			1		
				3		5	15	60'0"-61'6"	MEDIUM DARK GREY SATURATED	
			<u> </u>	<b>_</b>	┨		ļ	· ·	·	
65	-				+			1		
	╈	1	3					1		
				4		7	16	65'0"-66'6"	MEDIUM DARK GREY SATURATED	
			<b> </b>		<b>.</b>		<b> </b>	4		
70	-	<b> </b>	+	+			<del> </del>	1	:	
	o. of	Blows to	2"	Spoor	12"	with	140	3	0"Ea. Blow	
N=Nc	). of	Blows to	Drive	Spoor	າ	with		lb.wt	<u> </u>	

į

			rilling (						Test Boring No.: B05-3
									Job No 5505
	A	von, N	ew Yor	'k 144	14				Page: <u>3 OF 3</u>
Droier				HESTE	R				Report Date: 5/20/2005
Eleva	tior	1: 253	.2					Geologist:	
Water	Le	evel - Ca	sing In:	_					
Below	S	urface - (	Casing (	Dut:	<u> </u>				
Soci	\na	l and cli	matic ch	20006	nav alto	r obs			
Jeast		Blo		Samo	ler				
	C			oump		N	5	Sample	Soil and Rock Information
70	ľ	0"/6"	6"/12"	12"/18	18"/24"		No.		
<u> </u>		1	4				· · · · ·		
				4		8	17	70'0"-71'6"	MEDIUM DARK GREY SATURATED ( SANDIER )
	┝								
75	┢								
		2	2						
				2		4	18	75'0"-76'6"	SOFT DARK GREY SATURATED
	$\vdash$								
80									
		1	2						
	┝	<b> </b>	<b> </b>			3	19	80'0"-81'6"	SOFT DARK GREY SATURATED
	⊢	· · · · · · · · · · · · · · · · · · ·	<u> </u>						
85									(AUGERED TO 100' REMAINED SOFT)
	$\vdash$	<u> </u>	ļ	ļ	ļ				
	┝	<u> </u>			<u> </u>				
90						ļ			
	$\vdash$	<b> </b>	·····						
							<u> </u>		
			ļ						
95	-	ļ	ļ	┢		<b> </b>	ļ		
	┝		<u> </u>		+				
400									100101
100	╋	<u> </u>		+	1		<b></b>		
	$\vdash$	<u> </u>			<u> </u>		<u> </u>		BORING TERMINATED @ 100'0"
								1	_
Avon, New York 14414         Page: 3 0F3           Project:         PORT OF ROCHESTER           Client:         LABELLA ASSOCIATES, PC           Elevation:         253, 2           Geologist:         Skathin           Water Level - Casing Jut:         Stat:           Completed:         5/20/2005           Seasonal and climatic changes may alter observed water levels.         Soil and Rock Information           70         C         N           70         C         N           71         4         8           72         2         4           8         1         700°-716°           75         2         4           80         70°-716°           80         1         2           1         2         4           80         1         3           1         2         4           80         1         3           90         1         3           91         1         3           92         1         3           93         1         1           94         1         1           95         1									
		Blows to	2"	Spoon	12"	with	140	30	I
						-			

ŧ

}

	Ta	arget D	rilling (	Compa	any				Test Boring No.: B05-4	
		1850 L	akeville	e Roa	d				Job No 5505	
	Α	von. N	lew Yor	'k 144	14				Page: 1 OF 2	
			•••••						Page:         1 OF 2           Report Date:         5/6/2005	
Projec	ct:	PORT O	OF ROC	HESTE	R					
			A ASSC							
Elevat	tion	1: 254	.7	_				Geologist:		
			ising In:						S. KAHN	
Below	/ St	urface -	Casing (	Dut:				Start:	5/6/2005	
								Completed:		
Seaso	ona					r obs		d water level	S.	
		BIC	ows on	Samp	ler					
						N		Sample	Soil and Rock Information	
0		0"/6"		12"/18	18"/24"		No.	depth		
		7	7							0'5"
	Н	40	40	7	7	14	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL LITTLE ASPHALT AND SLAG	
	$\vdash$	13	13	10	9	23	2	2'0"-4'0"	FILL MATERIAL C/O MOIST SILT, SAND AND GRAVEL	
5	H	7	7	10		25	-	20-40	AND SLAG	
				4	4	11	3	4'0"-6'0"	FILL MATERIAL C/O MOIST FOUNDRY SAND	
		4	10							
				20	20	30	4	6'0"-8'0"	FILL MATERIAL C/O FOUNDRY SAND	7'8"
40		15	10			- 35	E	0101 10101	FILL MATERIAL C/O SATURATED SLAG	
10		21	12	15	22	25	5	8'0"-10'0"	FILL WATERIAL C/O SATURATED SEAG	
	$\vdash$	21	12	21	18	33	6	10'0"-12'0"	FILL MATERIAL C/O SATURATED SLAG	
		7	10		<u> </u>		┟┈┈	100 120		
				9	4	19	7	12'0"-14'0"	FILL MATERIAL C/O SATURATED SLAG	
15		3	3							15'0"
				4	6	7	8	14'0"-16'0"	MEDIUM GREY SATURATED SILT, TRACE ORGANIC	
		6	5	5	5	10	9	1001 100	NODULES MEDIUM BLACK MOIST PEAT LIKE MATERIAL	15'8"
				5	5		9	100-100		
20					<u> </u>				( MUDDED BORING FROM 18' TO TERMINATION )	
••••••		2	3	1	1		1			
				3	4	6	10		MEDIUM BLACK GREY WET TO SATURATED	
						ļ	ļ		INTERBEDDED SILT AND PEAT LIKE MATERIAL	
25				<u> </u>	ļ	<b> </b>	<b> </b>	TUBE	MEDIUM GREY SATURATED	24'0"
25	+	2	4	3	4	7	11	24'0"-26'0"	MEDIUM DARK GREY WET ORGANIC SILT, TRACE	
	-	<u> </u>				<u>+-</u> -	<u>  ···</u>	240-200	CLAY	
		<u>.</u>					<u> </u>		· · · · · · · · · · · · · · · · · · ·	28'0"
		1	1	1		1				
30										
	L	2	2			ļ				
		<b> </b>	<b> </b>	2	<b> </b>	4	12	30'0"-31'6"	MEDIUM GREY SATURATED SILT, LITTLE CLAY,	
	-				<u> </u>	╂		{	TRACE VF SAND SEAMS ( NO ORGANICS )	
35				+						
	, of	Blows to	2"	Spoon	12"	with	140	30	<u> </u>	
		Blowe to		- Spoon		- with		b wt	Ea Blow	

ł

ŝ

	Та	arget D	rilling (	Compa	any				Test Boring No.:		
		1850 L	akevill	e Roa	d				Job No		
	Α	von, N	ew Yor	rk 144	14				Page:	2 OF 2	
					_				Report Date:	5/6/2005	
			OF ROC								
	and in case of the local division of the loc		A ASSC	DCIATE	S, PC			Coologist			
		: 254	<u>sing In:</u>	-				Geologist:	S. KAHN		
			Casing (						5/6/2005		
Delow			o donig s	- <u></u>				Completed:			
Seaso	ona	l and cli	matic ch	anges i	nay alte	r obs		d water leve			
	Π		ows on								
				-		N		Sample	Soil and Rock	Information	
35		0"/6"	6"/12"	12"/18	18"/24"		No.	depth			
		7	8	İ						· · · · · · · · · · · · · · · · · · ·	35'6"
				9		17	13	35'0"-36'6"	FIRM RED WET SILT, SOME C-F	-	
	$\left  - \right $								WEATHERED ROCK AND VF SAN	ID .	
40	H								AUGER REFUSAL @		39'2"
	╉╌┨										
									BORING TERMINATED @ 39	2"	
							<u> </u>				
45	$\vdash$		<b> </b>								
-40			<u> </u>								
				<u> </u>							
50				ļ		<b></b>					
50	+		<u> </u>		ļ						
	H		·	+							
	H										
55			ļ		ļ	<u> </u>					
	$\vdash$					┨────					
	$\vdash$		1	1				1			
			- <u>-</u>								
60											
	Н			<b>_</b>	ļ	<u> </u>		4			
								4	- ,		
						<u> </u>					
65								]			
			ļ	<u> </u>	<b>_</b>	ļ	<b> </b>	4			
	$\vdash$		<u> </u>		<u> </u>			ł			
70		·		+		+		1		•	
	. of	Blows to	2"	Spoon	12"	with	140	3(	)"Ea. Blow	· · · · · · · · · · · · · · · · · · ·	
N=No	. of	Blows to	Drive	Spoon		- with		lb. wt	Ea. Blow		

j.

•

	Ta	arget D	orilling (	Compa	any				Test Boring No.: B05-5	
		1850 L	akevill	e Roa	d				Job No 5505	
	Α	von. N	lew Yor	k 144	14				Page: 1 OF 2	
		,							Report Date: 5/11/2005	· · ·
Projec	ct:	PORT	OF ROC	HESTE	R					
	-		A ASSC	CIATE	S, PC					
		: 252		-				Geologist:		
			isin <u>g In:</u>		<u> </u>				S. KAHN	
Below	/ St	Irface -	Casing (	Dut:					5/11/2005	
						_			5/11/2005	
Seaso	ona					er obs		d water leve	IS.	
		Blo	ows on	Samp	ler					
	C				_	N	5	Sample	Soil and Rock Information	
0		0"/6"	6"/12"	12"/18	18"/24"		No.	depth		
		7	19						TOPSOIL AND ORGANIC MATTER	0'7"
				23	28	42	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT, SAND AND GRAVEL	
		13	14						BRICK, WOOD AND SLAG	0101
5	Н	6	4	15	19	29	2	2'0"-4'0"	FILL MATERIAL ( SAME ) COMPACT BROWN MOIST M-VF SAND	<u>3'0"</u> 3'6"
3	+	0	4	4	4	8	3	4'0"-6'0"	LOOSE GREY SATURATED M-VF SAND, TRACE	
	Н	2	4					40-00	ORGANICS ( WOOD )	
	Н			7	4	11	4	6'0"-8'0"	FIRM GREY SATURATED	
	$\vdash$	12	4							
10	H			18	29	22	5	8'0"-10'0 <b>"</b>	FIRM GREY SATURATED ( LITTLE C-F GRAVEL )	
بالأكار الخابينية										
										12'0"
				ļ	`	ļ			(MUDDED BORING FROM 15' TO TERMINATION)	
40		2	7		ļ	10	<u> </u>	10101 15101		
15			<u> </u>	11	<b> </b>	18	6	13'6"-15'0"		
			ļ	<u> </u>	ļ	ļ	<b></b>	ł	(LITTLE SILT LAYERED)	4 7'0"

	18	6	13'6"-15'0"	FIRM GREY SATURATED C-F SAND AND GRAVEL	
				(LITTLE SILT LAYERED)	
					1

ą

ì

							<u> </u>
20							
	W/H	2					
			2		4	7	20'0"-21'6" SOFT GREY SATURATED CLAYEY SILT, LITTLE
							ORGANICS
25							
	W/H	2					
			2		4	8	25'0"-26'6" SOFT GREY WET
30							
	2	3					
			4		7	9	30'0"-31'6" MEDIUM GREY WET
35							
N=No.	of Blows to	2"	Spoon	12"	with	140	
N=No.	of Blows to	Drive	Spoon		with		lb. wtEa. Blow

	Та	arget D	rilling C	Compa	any				Test Boring No.: B05-5
		1850 L	akeville	e Roa	d				Job No 5505
	Α	von, N	ew Yor	k 144	14				Page:         2 OF 2           Report Date:         5/11/2005
									Report Date: 5/11/2005
			OF ROCI						
			A ASSC		S, PC			Coologist	
Eleva		252	sing In:					Geologist:	S. KAHN
			Casing C						5/11/2005
DCION			ousing <u>s</u>					Completed:	
Seaso	ona	l and cli	natic ch	anges r	nay alte	r obs		d water level	
	Π		ws on						
	C					Ν	5	Sample	Soil and Rock Information
35		0"/6"	6"/12"	12"/18	18"/24"		No.	depth	
		2	2						
	$\square$			2		4	10	35'0"-36'6"	SOFT GREY WET ( TRACE ORGANICS )
	Н								
40	Н								
		W/H	2						
				2		4	11	40'0"-41'6"	SOFT GREY WET TO SATURATED (TRACE ORGANICS)
	Н			ļ	 				
45	Н			<u> </u>			<b>-</b>		
		1	1						
				1		2	12	45'0"-46'6"	VERY SOFT GREY SATURATED ( TRACE MARL )
				<u> </u>					
50	Н			+	<b>}</b>	<b> </b>			
		1	2	1		<u> </u>			
				2		4	13	50'0"-51'6 <b>"</b>	SOFT GREY WET ( WOOD NOTED AND
	Ц			<u> </u>	ļ	ļ	<b> </b>		SLIGHTLY MORE CLAY )
55					<u> </u>	<u> </u>			
		3	3						
				5		8	14	55'0"-56'6"	MEDIUM GREY WET TO SATURATED (MORE
				ļ			<u> </u>		ORGANICS TRACE WEATHERED SHALE )
60									( VERY SLOW PENERATION FROM 58')
		82/6				82/6	15	60'0"-60'6"	VERY DENSE RED WEATHERED SHALE 60'6"
				<u> </u>					
		·							BORING TERMINATED @ 60'6"
65			<b> </b>		ļ		<u> </u>		
00	+					+			
				+	1	1	<u>†</u>		
70					ļ		ļ		
70		Blows to	2"	Spoon	12"	 with	140	30	LEa. Blow
		Blows to		Spoon		with		Ib. wt	Ea. Blow

ļ

Ì

	a	arget D	rilling C	Compa	ny				Test Boring No.: B05-7	
		1850 L	akeville	e Road	1				Job No 5505	
	A	von. N	ew Yor	k 144 <sup>.</sup>	14				Page: 1 OF 1	
		,							Page:         1 OF 1           Report Date:         5/10/2005	
			OF ROCI							
			A ASSO		S, PC					
Eleva	tion	: Æ	. 272	.7				Geologist:		
			sing In:		·				S. KAHN	
Below	/ Su	irface - (	Casing <u>C</u>	<u>)ut:</u>				Start: Completed:	<u>5/9/2005</u> <u>5/9/2005</u>	
Soci	na	l and cliu	matic ch	annes r	nav alte	r ohs		d water leve		
0000										
	Blows on Sampler					N		Sample	Soil and Rock Information	
0	M	0"/6"	6"/12"	12"/18	18"/24"		No.	depth		
	┼╍┼	14	10	12/10	10 724		NU.	uepui	TOPSOIL AND ORGANIC MATTER	0'5"
	H		10	18	50/0	28	1	0'0"-1'6"	FILL MATERIAL C/O MOIST SILT, SAND AND GRAVEL	
	$\vdash$					<u> </u>	<u> </u>		AND CRUSHED STONE	
	H	50/4				50/4	2	3'0"-3'4"	FILL MATERIAL CONCRETE	<b>4'0</b> "
5										
		14	13							
	$\left  - \right $			15	18	28	3	5'0"-7'0"	COMPACT BROWN MOIST SILT AND VF SAND	
	$\vdash$	9	13							
10	H		10	14	14	27	4	8'0"-10'0"	COMPACT BROWN MOIST SILT, TRACE VF SAND	
	$\mathbf{T}$									
										12'0"
45	Ц					<b> </b>				
15	+	7 .	8							
				9	· · · · ·	17	5	15'0"-16'6"	STIFF GREY MOIST SILT, LITTLE CLAY	16'6"
	Н	·		<u> </u>						
20									BORING TERMINATED @ 16'6"	
	Н						ļ			
	Н								NOTE: ADDITIONAL 1'6" DRILLED AT THIS LOCATION HEAVY FILLS MOVED BORING 3'	
	Η		<u>  · · · · · · · · · · · · · · · · · · ·</u>			<del> </del>	+			
25	$\vdash$		·	1		1	<u> </u>			
			<b> </b>	<b> </b>		<b> </b>		ļ	· · · · ·	
30	$ \mathbf{H} $	 	<b> </b>			<b> </b>	┨			
30	┿┥	·			·····	<u>+</u>	+			
	H			+	·	<u> </u>	<u>†</u>	1		
		1		1			<u> </u>	1		
35									;	
		Blows to		Spoon		-	140	3(		
N=No	. of	Blows to	Drive	Spoon		_ with		. lb. wt	Ea. Blow	



300 State Street Rochester, New York 14614

# **Appendix 4**

**Photographs of Slag Fill** 



Typical view of slag fill at the Port of Rochester.





300 State Street Rochester, New York 14614

# **Appendix 5**

**Example of Material Tracking Spreadsheet** 

			_		· · · ·									_											
LANDFILL TICKET NO.																									
TIME TRUCK OFF-SITE																									
WASTE DISPOSAL LOCATION																									
TYPE OF WASTE STREAM																									
MANIFEST NO.																									
TRUCK LISCENSE PLATE NO.																									
TRUCK I.D.																									
TRUCKING COMPANY																									
DATE																									
	-	2	3	4	5	6	7	œ	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

# PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN WASTE STREAM TRACKING FORM

Ì

ļ

SHEET \_\_\_\_ OF \_\_\_



# Appendix 6

Example of Health & Safety Plan

## Port of Rochester Site Health and Safety Plan

Location: Port of Rochester Rochester, New York 14612

Prepared For: City of Rochester Division of Environmental Quality 30 Church Street Room 300B Rochester, New York 14614

LaBella Project No. 205182

June 2005

### Port of Rochester Site Health and Safety Plan

Location: Port of Rochester Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality 30 Church Street Room 300B Rochester, New York 14614

LaBella Project No. 205182

June 2005

#### **Table of Contents**

		Page
1.0	INTRODUCTION	1
2.0	RESPONSIBILITIES	1
3.0	ACTIVITIES COVERED	1
4.0	WORK AREA ACCESS AND SITE CONTROL	1
5.0	POTENTIAL HEALTH AND SAFETY HAZARDS	1
6.0	DECONTAMINATION PROCEDURES	3
7.0	PERSONAL PROTECTIVE EQUIPMENT	3
8.0	AIR MONITORING	3
9.0	EMERGENCY ACTION PLAN	4
10.0	MEDICAL SURVEILLANCE	4
11.0	EMPLOYEE TRAINING	4

Compound	PEL-TWA	TLV-TWA	LEL	UEL	IDLH	Odor	Odor Threshold	Ionization
4	(p)(q)(udd)	(ppm)(c)(d)	( <i>%</i> )(e)	(%)(f)	(ppm)(g)(d)		(mdd)	Potential
Acetone	750	750	2.5	13	20,000	Sweet	13	9.69
Anthracene	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1(1)	10	1.3	7.9	Ca	Pleasant	4.7	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.2	NA	NA	700	NA	NA	NA
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100	100	1.0	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA
Ideno (1,2,3-cd) pyrene		065	NA	NA	Ca	Na	Na	Na
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Napthalene	10, Skin	10	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	100	100	0.9	9.5	2,000	Sweet	2.1	8.82
1,2,4-Trimethylbenzene	NA	25	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	Distinct	2.4	NA
Xylenes (o,m,p)	100	100			1,000	Sweet	1.1	8.56
Metals								
Arsenic	0.01	0.2	NA	NA	100, Ca	Almond		NA
Barium	0.5	0.5	NA	NA	1,100			NA
Cadmium	0.2	0.5	NA	NA				NA
Chromium	1	0.5	NA	NA				NA
Lead	0.05	0.15	NA	NA	700			NA
Mercury	0.05	0.05	NA	NA	28	Odorless		NA
Selenium	0.2	0.02	NA	NA	Unknown			NA
Silver	0.01	0.01	NA	NA				NA

# **Exposure Limits and Recognition Qualities** Table 1

 $(\hat{c} \oplus \hat{c} \oplus \hat{c} \oplus \hat{c})$ 

Skin = Skin Absorption OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990 ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003. Metal compounds in mg/m3

Lower Exposure Limit (%) Upper Exposure Limit (%) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

All values are given in parts per million (PPM) unless otherwise indicated. Ca = Possible Human Carcinogen, no IDLH information.

Notes: 1. All 2. Ca

#### SITE HEALTH AND SAFETY PLAN

Project Title:	Port of Rochester
Project Number:	205182
Project Location (Site):	Port of Rochester, Rochester, New York 14608
Project Manager:	Gregory R. Senecal, CHMM
Plan Approval Date:	
Plan Review Date:	
Site Safety Supervisor:	Michael Pelychaty
Site Contact	Michael Pelychaty
LaBella Safety Director	Richard Rote, CIH
<b>Proposed Date(s) of Field</b> <b>Activities:</b>	To Be Determined
Site Conditions:	Level to moderately sloping, encompassing approximately 5 +/- acres
Site Environmental Information Provided By:	Prior Environmental Reports by H&A of New York, Day Environmental, LaBella Associates, P.C., etc.
Air Monitoring Provided By:	LaBella Associates
Site Control Provided By:	To Be Determined

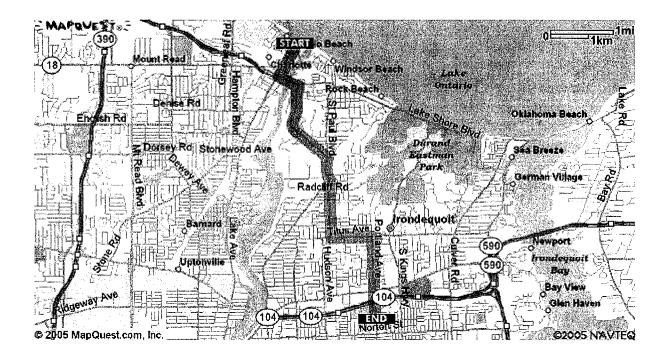
#### **EMERGENCY CONTACTS**

	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Rochester General Hospital	585-922-4000
Poison Control Center:	Finger Lakes Poison Control	585-275-3232
Police (local, state):	City of Rochester Police Department	911
Fire Department:	City of Rochester Fire Department	911
Site Contact:	Michael Pelychaty	585-451-6225
Agency Contact	NYSDEC – To Be Determined MCDOH – To Be Determined NYSDOH – To Be Determined	
Project Manager	Gregory R. Senecal, CHMM LaBella Associates, P.C.	Direct: 585-295-6243 Cell: 585-752-6480
Safety Supervisor	Michael Pelychaty LaBella Associates, P.C.	Direct: 585-295-6253
LaBella Associates Safety Director	Richard Rote, CIH LaBella Associates, P.C.	Direct: 585-295-6241

.

#### MAP AND DIRECTIONS TO THE MEDICAL FACILITY ROCHESTER GENERAL HOSPITAL

	Directions
1:	Start out going NORTHWEST on CORRIGAN ST toward LAKE AVE.
2:	Turn LEFT onto LAKE AVE.
3:	Turn LEFT onto STUTSON ST.
4:	STUTSON ST becomes PATTONWOOD DR/CR-99.
5:	Turn RIGHT onto POW MIA MEMORIAL AVE/THOMAS AVE/CR-124.
6:	Turn RIGHT onto ST PAUL BLVD/CR-122.
7:	Stay STRAIGHT to go onto COOPER RD/CR-116.
8:	Turn LEFT onto TITUS AVE/CR-91.
9:	Turn RIGHT onto PORTLAND AVE/CR-114.
10:	End at Rochester General Hospital, 1425 Portland Ave Rochester, NY 14621-3001



#### **1.0 INTRODUCTION**

The purpose of this Health and Safety Plan (HASP) it to provide guidelines for responding to potential health and safety issues that may be encountered during the earthwork construction at the port of Rochester. The requirements of this HASP are applicable to all LaBella Associates personnel and their authorized visitors at the work site. This document's Environmental Management Plan (EMP), and the Community Air Monitoring Plan (CAMP), are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or and other regulatory body.

#### 2.0 **RESPONSIBILITIES**

The HASP presents guidelines to minimize the risk of injury, to project personnel, and to provide rapid response in the event of injury. The LaBella Associates HASP is applicable only to activities of LaBella personnel and their authorized visitors. The LaBella Associates Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of employees to follow the requirements of this HASP, and all applicable company safety procedures.

#### 3.0 ACTIVITIES COVERED

The activities covered under this HASP are limited to the following:

- Observation and inspection of construction activities
- Environmental Monitoring
- Collection of samples
- Assistance with the on-Site management of excavated soil and fill.

#### 4.0 WORK AREA ACCESS AND SITE CONTROL

The general contractor will have primary responsibility for work area access and site control.

#### 5.0 POTENTIAL HEALTH AND SAFETY HAZARDS

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by LaBella Associates personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times the Site Safety Officer has responsibility for site safety and his or her instructions must be followed.

LaBella Project #205182 June 2005

#### 5.1 Hazards Due to Heavy Machinery

#### Potential Hazard:

Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

#### **Protective Action:**

Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A safety orange vest, hard hat, and steel toe shoes are required.

#### 5.2 Excavation Hazards

#### Potential Hazard:

Excavations and trenches can collapse, causing injury or death. Edges of excavation can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches.

#### **Protective Action:**

LaBella Associates personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. LaBella Associates personnel must receive approval from the LaBella Project Manager to enter an excavation for any reason. Subsequently, LaBella personnel are to receive authorization for entry from the Site Safety Officer.

LaBella Associates personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable.

#### 5.3 Cuts, Punctures and Other Injuries

#### Potential Hazard:

In any excavation or construction work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

#### **Protective Action:**

The LaBella Associates Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The First Aid supplies will be kept in the work trailer. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the LaBella Project Manager. Serious injuries are to be reported immediately (see Section 9.0 - Emergency Action Plan).

LaBella Project #205182 June 2005

#### 5.4 Injury Due to Exposure of Chemical Hazards

#### Potential Hazards:

Volatile organic vapors from petroleum products, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

#### **Protective Action:**

The presence of organic vapors may be detected by their odor and by monitoring instrumentation. LaBella Associates employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring performed by LaBella Associates (see Section 8.0) of the work area will be performed at least every 30 minutes or more often using a Photoionization Detector (PID) or a Flame Ionization Detector (FID). LaBella Associates personnel are to leave the work area whenever PID or FID measurements of ambient air exceed 25 ppm consistently for a 15 minute period.

#### 6.0 DECONTAMINATION PROCEDURES

Upon leaving the work area, LaBella Associates personnel shall decontaminate footwear as needed. Under normal work conditions detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. LaBella Associates personnel should be prepared with a change of clothing whenever on site.

LaBella will use the contractor's disposal container for disposal of PPE.

#### 7.0 PERSONAL PROTECTIVE EQUIPMENT

Conditions requiring a level of protection greater than Level D are not expected at this work site. Typical safety equipment identified in company safety and health procedures is required, i.e., hard hat, safety glasses, orange vest, rubber nitrile sampling gloves, splash resistant coveralls, construction grade boots, etc. Additional site-specific personal protective equipment is not necessary when working under the conditions of this plan.

#### 8.0 AIR MONITORING

The LaBella Associates representative/EPM will utilize a PID to screen the ambient air in the work areas (excavation, soil staging, and soil grading areas) for total Volatile Organic Compounds (VOCs). Work area ambient air will generally be monitored downwind of the excavation or earthwork area in the general breathing zone

Air monitoring of the work areas will be performed at least every 30 minutes or more often using a photoionization Detector (PID). LaBella Associates personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period.

LaBella Project #205182 June 2005

LaBella personnel may re-enter the work areas wearing a ½ face respirator with organic vapor cartridges for an 8-hour duration when VOC concentrations average between 25-50 ppm. Organic vapor cartridges are to be changed after each 8-hour of use. If PID readings are sustained at levels above 50 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered.

At all times, the Site Safety Officer has authority over actions of LaBella Associates personnel and their guests at the site and his or her requests for evacuation are to be heeded without delay. Skin and clothing should be rinsed with clean water if chemical exposure has occurred as a result of splash or spill. Contaminated clothing must be removed; LaBella personnel should bring a change of clothes to the site. Water repellant suits will be provided to help prevent contamination of clothing. Medical attention should be provided if skin irritation has occurred. Please refer to Table 1 outlining chemical compounds detected in recent soil samples at the proposed Port of Rochester.

#### 9.0 EMERGENCY ACTION PLAN

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible and wait at the assigned 'safe area'. Follow the instructions of the Site Safety Officer.

LaBella Associates employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

#### 10.0 MEDICAL SURVEILLANCE

LaBella Associates will provide medical surveillance to all LaBella employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

#### 11.0 EMPLOYEE TRAINING

LaBella personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

LaBella Project #205182 June 2005



**Appendix 7** 

**Community Air Monitoring Plan** 

# Port of Rochester Community Air Monitoring Plan for Earthwork Construction Activities

Location: Port of Rochester Rochester, New York 14612

Prepared For: City of Rochester Division of Environmental Quality 30 Church Street Room 300B

Rochester, New York 14614

LaBella Project No. 205182

June 2005

# Port of Rochester Community Air Monitoring Plan for Earthwork Construction Activities

Location: Port of Rochester Rochester, New York 14612

Prepared For:

City of Rochester Division of Environmental Quality 30 Church Street Room 300B Rochester, New York 14614

LaBella Project No. 205182

June 2005

#### **Table of Contents**

1.0	INTRODUCTION	1
-----	--------------	---

2.0	MET	METHODOLOGY1										
	2.1	Perimeter Monitoring	.1									
	2.2	Work Area Monitoring	.2									
	2.3	Fugitive Dust Control	.2									
	2.4	Minor Vapor Emission Plan	. 2									
	2.5	Major Vapor Emission Plan	3									

#### **1.0 INTRODUCTION**

This Community Air Monitoring Plan (CAMP) has been prepared by LaBella Associates on behalf of the City of Rochester Department of Environmental Quality (DEQ). This CAMP addresses potential Volatile Organic Vapor (VOC) and particulate emissions that may occur during the earthwork portion of construction activities at the Port of Rochester. The Port of Rochester encompasses approximately 26 acres in the City of Rochester, Monroe County, New York 14612 (see Figure 1) herein after referred to as the "Site."

Potential future earthwork construction activities are covered by this CAMP. Low levels of VOCs, semi-VOCs, and metals have been detected in the soil, fill, and groundwater at the Site. The volatilization of organic compounds through disturbance of soil and groundwater at the Site can potentially result in nuisance odors or health threats to the neighborhood in the immediate vicinity of the Site. Inorganic compounds, present in dust, could potentially be disturbed during earthwork construction activities. This CAMP describes daily air monitoring activities intended to identify and control environmental conditions presenting the potential for neighborhood exposure to ambient airborne hazards resulting from fugitive emissions during earthwork construction activities at the Site.

Pursuant to the New York State Department of Environmental Conservation (NYSDEC) Technical Administrative Guidance Manual (TAGM) #4031 – Fugitive Dust Suppression and particulate Monitoring Program at Inactive Hazardous Waste Sites, (HWR-89-4031), this CAMP addresses methods that will be utilized to monitor particulate (dust) levels at the perimeter of, and within the work areas (excavation, soil staging, and soil grading areas) of the Site. If elevated levels of particulate emissions are encountered, this CAMP identifies the procedures that will be employed to mitigate elevated particulate levels.

Perimeter air monitoring procedures for VOCs are also included in this CAMP. VOC monitoring of the work areas (excavation, soil staging, and soil grading areas) of the Site will also be conducted per the Health and Safety Plan (HASP).

#### 2.0 METHODOLOGY

This CAMP has been designed for construction activities at the Port of Rochester. The CAMP pertains primarily to earthwork activities that disturb, man-made fill, soil and groundwater at the Port of Rochester. Previously completed soil investigations have indicated that petroleum soil and groundwater impairment is not significant or wide spread and located at intermittent locations. Fill containing metals is typically located throughout the Port of Rochester. No significant vapor emissions are expected. However, the following procedures will be implemented to monitor and, if necessary, mitigate the potential migration of fugitive particulate and/or VOC emissions at the Site.

#### 2.1 Site Perimeter Monitoring

Each day of field work during the intrusive earthwork, a wind sock or flag will be used to monitor wind direction in the work areas (excavation, soil staging, and soil grading areas). Based upon daily wind conditions three temporary monitoring points, one up and two down wind of the work areas, will be identified at the perimeter of the Site or field work area.

LaBella Project #205182 June 2005

Real time particulate monitoring will be performed utilizing aerosol monitors capable of measuring particulate concentrations of Particulate Matter 10  $\mu$ m in size (PM<sub>10</sub>) or less. VOC monitoring will be performed with a Photo-ionization Detector (PID) equipped with at 10.6 eV lamp. Sufficiently wet Site conditions, such as after precipitation, may temporarily eliminate the need for particulate monitoring.

Each day, prior to the commencement of the intrusive earthwork work, background concentrations of particulate and VOCs will be measured and recorded as 5 minute averages at the identified upwind and downwind locations with the typical construction equipment engines and any other gas/diesel engines operating on Site.

Afterward, measurements will be recorded at approximate 30 minute intervals. The recorded 5 minute averages will be used to determine the difference in value between upwind and downwind particulate and VOC concentrations. Work will be temporarily halted and engineering controls, as per Section 2.3 or 2.5, will be implemented if the difference between the upwind and downwind particulate measurements exceed 100  $\mu$ g/m<sup>3</sup>, or downwind VOC readings exceed upwind readings by 5 parts per million (ppm). It should be noted that downwind VOC readings will be adjusted for engine exhaust. If work is required to be temporarily halted, the Contractor will be required to implement dust suppression methods or other means to control dust and VOCs.

#### 2.2 Work Area Monitoring

In addition to monitoring the perimeter of the work Site for VOCs and particulates, the immediate work areas (excavation, staging, and grading areas) will be monitored for VOCs as per the HASP developed for this project. Real time readings from the Work Area Perimeters will be observed and recorded as 5 minute averages at 30 minute intervals. If measurements exceed 25 ppm, as a 5 minute average, the requirements of Section 2.4 will be implemented.

#### 2.3 Fugitive Dust Control

If the monitoring at the Site Perimeter, as described in Sections 2.1, indicates an upwind/downwind difference in fugitive particulate emissions greater than  $100 \ \mu g/m^3$ , the contractor will be required to implement dust control measures that may include the following methods:

- Apply water on haul roads.
- Wetting equipment and excavation faces.
- Restricting vehicle speeds to 10 mph.
- Hauling material in properly tarped containers.
- Spraying water in buckets during excavation and dumping.
- Reducing excavation size and/or number of excavations.

The contractor will be required to have a water truck or equivalent equipment on site for dust suppressions methods.

#### 2.4 Minor Vapor Emission Response Plan

If any single Work Area Perimeter ambient air reading of total VOCs exceeds 25 ppm in the ambient air above background, as a 5 minute average, <u>continuous</u> Site Perimeter air monitoring shall be conducted at the downwind monitoring location.

Work activities may continue if total organic vapors in the ambient air are less than 25 ppm over background at the Work Area Perimeter, provided that the organic vapor levels measured at the Site Perimeter remain below 5 ppm over background.

Work activities may need to be modified as per the HASP if VOC measurements remain at 25 ppm or above in the ambient air at the Work Area Perimeter. See the HASP for further details.

All work activities must be halted and the Major Vapor Emission Response Plan (Section 2.5) will be implemented immediately if organic vapor levels exceed 5 ppm in the ambient air, as a 5 minute average, over background at the Site Perimeter.

#### 2.5 Major Vapor Emission Plan

Engineering controls to abate the VOC emissions source will immediately be put into effect if total organic vapor levels in the ambient air exceed 5 ppm above background at the Site Perimeter. These engineering controls may include:

- Vapor suppression utilizing foam vapor suppressants, polyethylene sheeting, or water.
- Backfilling of excavations.
- Covering emission sources with stockpiled materials.

If the measures taken to abate the emission source are ineffective and the total organic vapor readings continue at 5 ppm or above background for more than 15 minutes at the Site Perimeter, then the following actions shall be placed into effect.

- Occupants of the residential and commercial buildings will be advised to stay inside their respective structure and to close all windows.
- All personnel listed in the Emergency Contacts section of the HASP for this project will be contacted.
- The Site Safety Supervisor will immediately contact the local authorities and advise them of the circumstances.
- Continuous air monitoring will be conducted at the Site Perimeter and 1 minute average measurements will be recorded every 15 minutes. Air monitoring may be halted or modified by the Site Safety Supervisor when two successive measurements are below 5 ppm.

If readings remain elevated above 5 ppm over background for a period of 60 minutes the Site Safety Officer will request that local authorities evacuate the occupants of the buildings.