LABELLA
Associates, P.C.

Engineering
Architecture
Environmental

Predevelopment Subsurface Conditions Analysis Investigation Report

Location:

Development Area #1
Port of Rochester
4700 Lake Avenue
Rochester, New York

Prepared for:

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

LaBella Project No. 208453

March 2009

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1.0 Introduction

LaBella Associates, P.C. ("LaBella") was retained by the City of Rochester to conduct a Predevelopment Subsurface Conditions Analysis Investigation (PSCAI) of a parcel of land within the Port of Rochester located at 4700 Lake Avenue within the City of Rochester, Monroe County, New York (see Figure 1) hereinafter referred to as the "Site".

The Site is a portion of the Port of Rochester which has been targeted for redevelopment. The Site is generally located in an existing parking lot to the west of River Street, south of Corrigan Street, east of Lake Avenue, and north of Portside Drive. This area is approximately 300-feet (east-west) by 600-feet (north-south). The Site is limited to the area of land up to the sidewalk areas bordering the perimeter of the Site. Figure 2 depicts the property line of the Site in relation to the surrounding areas of the Port of Rochester.

To encourage the redevelopment of the Site, the City of Rochester has designed a potential redevelopment plan as illustrated on Figure 3. This development model sub-divides the Site into four (4) potential development parcels. The parcels, for the purposes of this PSCAI report, will be referred to as area:

- A-1 – Southeastern parcel at the Site
- A-2 – Southwestern parcel at the Site
- A-3 – Northwestern parcel at the Site
- A-4 – Northeastern parcel (greenspace) at the Site

This PSCAI Report outlines the findings of the PSCAI. In addition, the PSCAI Report provides conclusions and recommendations for potential redevelopment of the Site through consideration of the subsurface features known to exist at the Site within each of the four (4) distinct parcels identified above.

2.0 Site History

In the mid to late 1800's, a steel mill (Charlotte Iron Works) was constructed northwest of the Site. Waste products (foundry sand and slag) generated from the steel mill's operations were used to expand the shoreline eastward toward the Genesee River and subsequently across areas of the Site. By 1924, the Corrigan-McKinney Steel Company was operating on what are now areas A-1 and A-2 of the Site. Most of the infrastructure associated with this operation appears to have been located within areas A-1 and A-2. The blast furnaces associated with the steel production also appear to mainly located on, or adjacent to, area A-2. A possible coal storage area may have been located on area A-3. Several rail spurs extended into the Site across each of the four (4) areas of the Site. The steel mill operations were terminated in the mid 1920's, and the buildings were subsequently demolished. Appendix 1 includes historic Sanborn Maps from 1892 and 1924 which show the locations of these buildings and parcels.

Based on previous environmental investigations conducted at the Port of Rochester, it has been documented that slag, cinders, foundry waste, re-worked soil, C&D, and other man-made fill has been placed as backfill within the Site boundaries. The fill materials and historical utilization of the Site represents an environmental and geotechnical concern for redevelopment of the Site. Figure 4 presents the 1924 Sanborn Map which shows the approximate locations of former structures present at the Site.

3.0 Summary of Previous Reports

Several phases of investigation have been completed in the general vicinity of the Site, at the Port of Rochester. Some of the information gathered during these previous investigations was utilized to focus the scope of work for this investigation. The following reports were relied upon for this investigation and are summarized below.

3.1 Geotechnical Site Characterization, Port of Rochester Harbor Improvement and Harbor Ferry Terminal, Rochester, New York, Haley & Aldrich, Inc., September 2000.

This geotechnical report presented the findings of a subsurface investigation in order to develop an understanding of the regional subsurface conditions, sufficient to complete initial planning efforts and preliminary engineering design.

The geotechnical report describes the general subsurface conditions at the Port of Rochester and provides some geotechnical engineering considerations for development of the Port of Rochester.

The Geotechnical Site Characterization Report concluded that,

> "...uncontrolled fill materials and relatively shallow groundwater at the Port of Rochester present variable and potentially settlement-yielding support for streets and parking lots and possibly corrosive environment for utilities. The presence of the loose fill materials and shallow groundwater should be carefully considered in the planning and execution of all utility trenching and installation.
>
> The buried slag and other waste and affected groundwater could pose threats to the long-term integrity of concrete or steel foundations. Removal and replacement or partial removal and insitu densifications of the existing fill materials and replacement with controlled fill may be appropriate for moderately loaded structures. Heavily loaded or settlement intolerant structures would most likely require deep foundations (piles or caissons) seated on or in the glacial till or bedrock.
>
> The shallow groundwater and loose fill and alluvial sediments will exert considerable horizontal loadings on temporary and permanent earth retaining structures. Chemically aggressive groundwater could pose a threat to the long-term integrity of earth retaining walls, particularly those constructed of steel. Care must be taken to assure sufficient lateral support both at the top and at or below the bottom of the excavation or below grade floor.
>
> The characterizations and geotechnical engineering considerations presented in the 2000 Haley & Aldrich Geotechnical Site Characterization Report are based, in part, upon the data obtained from previous subsurface investigations. The historic construction and uses of the Port of Rochester, together with the geotechnical information presented herein, should be carefully considered in establishing the need for additional exploration, testing, and evaluation to support the design and construction of the anticipated structures and Site improvements...."

3.2 Phase II Environmental Site Assessment (ESA): Preliminary Site Characterization Report, LaBella Associates, P.C., Bourne Consulting Engineering, BTA Architects, Inc., Cavendish Partnership, Erdman Anthony & Associates, Haley & Aldrich, Inc., May 31, 2001.

This Phase II ESA report presented the cumulative findings of an overburden soil and groundwater investigation conducted at the Port of Rochester. This Phase II ESA included submitting representative samples of the slag for laboratory analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), 8 United States Environmental Protection Agency (USEPA) Resource Conservation and Recovery Act (RCRA) Metals, cyanide, and Polychlorinated Biphenyls (PCBs). The analytical results indicated that the slag is not representative of hazardous waste. However, the metals arsenic, cadmium, and chromium were detected in the slag samples above laboratory detection limits. Arsenic was the only metal consistently found to exceed the United States Environmental Protection Agency (USEPA) Eastern USA Background Levels published in the New York State Department of Environmental Conservation (NYSDEC) Technical and Administrative Guidance Memorandum (TAGM) #4046. In approximately 20 percent of the soil samples submitted for laboratory analysis, the concentrations of arsenic were reported above the New York State Department of Health (NYSDOH) recommended level of 20 parts per million (ppm). The NYSDOH typically considers concentrations of arsenic found to exceed these criteria to be a health concern only in surface soils. As such, slag contained in the subsurface of the Site would not likely pose any adverse effects to human health. However, if during site grading and/or utility work, this layer of slag is disturbed, brought to ground surface for use as surface fill, or if the layer of topsoil is removed; then the elevated level of arsenic may represent a human health concern. In addition, large-scale disturbance of the slag layer will likely result in a nuisance odor problem.

3.3 Remedial Investigation Report, LaBella Associates, P.C., March 2007.

The Remedial Investigation report attempted to define the horizontal and vertical extent of Regulated Solid Waste (as defined by NYSDEC) and slag at a portion of the Port of Rochester, to evaluate for localized areas of subsurface impacts due to historic operations and/or fill materials, and to analyze and characterize the Regulated Solid Waste to identify potential constituents of environmental concern.

Although, the Remedial Investigation was not conducted specifically on the Site, the findings of this investigation are useful as the subsurface conditions encountered during this 2007 remedial investigation are similar to subsurface conditions encountered during this PSCAI at the Site. Some of the conclusions made in this remedial investigation report are as follows:

- Regulated Solid Waste is located in the subsurface of the Port of Rochester.
- Although select contaminants were encountered at concentrations exceeding soil and/or groundwater standards, if the Regulated Solid Waste is undisturbed these impacts do not appear to constitute a significant threat to the environment or human health. However, if disturbed the Regulated Solid Waste would require to be handled properly.
- Based on the relatively high hydraulic conductivity for the soils and fill material beneath the surface, any excavation work conducted below the water table should take into account the potential that large volumes of groundwater may accumulate and will require proper handling and/or treatment.

3.4 Geothermal Test Bores and Formation Thermal Conductivity Report, Stantec Consulting Services, Inc., December 4, 2007.

Geothermal test boring "GT-1" was advanced to approximately 400 feet BGS in the southwestern portion of area A-2. Bedrock was encountered at approximately 54 feet BGS in this location. Geologic conditions for geothermal drilling were found to be favorable for drilling deep into the bedrock formation at GT-1. No natural gas or other obvious environmental hazards were encountered. An above average thermal conductivity rating was reported in the predominately dry shale formation at this location.

A copy of this report is included as Appendix 2.

3.5 Port of Rochester Environmental Management Plan, LaBella Associates, P.C., July 2005.

The Environmental Management Plan (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.

Solid waste layers are present throughout the Port of Rochester. The solid waste is generally present at depths immediately below the "topsoil" layer or pavement/sub-base layer, which varies in depth form 6 inches to 24 inches below the ground surface. These fill materials include:

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

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. These materials may be disposed of at a New York State Part 360 permitted landfill.

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

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 of Rochester Division of Environmental Quality and the Environmental Project Monitor will determine procedures and protocols to manage any additional environmental impacts.

Please refer to Figure 4 for locations of pertinent testing locations.

4.0 Geophysical Survey Results

On August 7, 2008, LaBella retained the services of Geomatrix to conduct a geophysical evaluation of the Site. Geomatrix conducted an electromagnetic survey using a Geonics EM61 unit, a high-sensitivity, high-resolution, time domain electromagnetic (TDEM) metal detector that can detect both ferrous and nonferrous metallic objects to an approximate depth of 10 feet below ground surface (BGS).

Data collected by the EM61 unit was processed and a contour map was produced based upon the measured electromagnetic response to identified potential magnetic anomalies. The contour map is displayed in colors that indicate the response of the equipment. Areas of blue indicate 'background', while areas of yellow indicate magnetic anomalies. A copy of Geomatrix's Geophysical Survey Report is included as Appendix 3.

The geophysical survey results provided by Geomatrix were overlain on the 1924 Sanborn Map as shown on Figure 4. The geophysical survey identified areas suspected to be free of buried metals in shades of blue. However, areas likely to contain buried metals are depicted in shades of dark blue through yellow on the figure. In addition, buried remnants of building foundations usually become expressed in these data sets as rectilinear anomalies. As such, areas suspected of containing intact building foundations identified during from the geophysical survey were evaluated during the subsequent test pitting investigation (refer to Section 5.0).

Based on the known history of the Site, it was anticipated that various portions of the Site would contain slag fill materials. The slag type fill typically contains enough metal content to create a response on the geophysical survey. As a result, a red line was added to Figure 4 to indicate the approximate areal extent of slag fill at the Site. Slag has been confirmed to the east of this red line. In addition, this line has been approximated based on the various other investigative activities completed at the Site referenced in Section 3.0 of this report.

5.0 Test Pitting Investigation

In order to investigate the significant magnetic anomalies observed in the geophysical data, an exploratory test pit investigation was performed at the Site. The test pit locations were selected based on the results of the geophysical survey, the 1892 and 1924 Sanborn Maps, and the results of previous investigations conducted at the Site as outlined in Section 3.0. The locations of the test pits are illustrated on Figure 4. Additionally, significant findings in the test pits are called out on Figure 4 in "text boxes".

On September 5, 2008 TREC mobilized a "Kubota KX121-3 Super Series" excavator and operator to the Site, and excavated nine (9) test pits. The nine (9) test pits were excavated to depths ranging from 4.5 to 8.5-feet BGS.

In order to excavate to a greater depth, a "John Deere 690" size track-mounted excavator was mobilized to the Site by TREC on October 3, 2008. An additional seven (7) test pits were excavated using this excavator. The seven (7) test pits were excavated to depths ranging from 4.5 to19.5-feet BGS.

Soils from the test pits were continuously assessed for visible impairment, both non-slag containing fill materials and slag fill materials, olfactory indications of impairment, and/or indications of detectable VOCs on a Photo-Ionization Detector (PID) total VOC meter. Positive indications from any of these screening methods were collectively referred to as "evidence of impairment."

The following table summarizes the information obtained from the LaBella test pits. [*Note: Sections 5.0 and 6.0 present the field observations as fill materials and slag fill in order to describe apparent non-native materials that were observed at the Site. Section 7.0 defines the NYSDEC term of Regulated Solid Waste and the evaluations of contours and volumes are based on slag containing and non-slag containing Regulated Solid Waste.*]

Table 1
Test Pit Summary

Test Pit ID	General Test Pit Location	Slag Fill	Other Fill Materials	Observations/Evidence of Impairment
TP-1	Center of Area A-1 on eastern side	None Present	None Present	Sandy silt, no evidence of impairment or elevated PID readings
TP-2	Northeastern corner of Area A-2	None Present	Assorted fill materials (i.e., brick, concrete, metal pieces) encountered at 1.5'-4.5' BGS	Refusal at approximately 4.5' BGS
TP-3	Northeastern corner of Area A-2	None Present	Assorted fill materials (i.e., brick fragments, cut stone, some metal objects, very loose fill) encountered at 1.5'-8.0' BGS	Sandy silt, no evidence of impairment or elevated PID readings
TP-4	Center of Area A-2	None Present	Assorted fill materials (i.e., concrete chunks ~3.0' in diameter and brick fragments) encountered at 1.5'-3.2' BGS	Sandy silt, no evidence of impairment or elevated PID readings below fill materials.
TP-5	Southeastern corner of Area A-2	None Present	None Present	Brick fragmented wall running east to west along southern end of test pit from about 2.0'-6.0' BGS
TP-6	Western edge of Area A-2	None Present	None Present	Silty sand, no fill materials, no evidence of impairment or elevated PID readings.
TP-7	Northeastern portion of Area A-1	Blue slag chunks less than 1.0' in diameter	Brick, crushed concrete, steel plates, some wood pieces from about 1.0'-8.0'-BGS.	Bottom of test pit did not reach beyond depth of slag at approximately 8.0' BGS.
TP-8	Center of Area A-2 along eastern edge	None Present	None Present	Sandy Silt, with some clay, no evidence of impairment or elevated PID readings.

Table 1 (continued)
Test Pit Summary

Test Pit ID	General Test Pit Location	Slag Fill	Other Fill Materials	Observations/Evidence of Impairment
TP-9	Center of Area A-3	None Present	None Present	Sandy silt with trace amounts of clay, no fill materials, no evidence of impairment or elevated PID readings.
TP-10	Northeastern corner of Area A-2	None Present	Assorted fill (C&D debris - concrete chunks & bricks) from 1.0'-8.0' BGS	Sandy silt, no evidence of impairment or elevated PID readings below fill materials.
TP-11	Center of Area A-2	None Present	None Present	Silty sand, no fill materials, no evidence of impairment or elevated PID readings.
TP-12	Center of Area A-3	None Present	None Present	Silty sand, no fill materials, no evidence of impairment or elevated PID readings.
TP-13	Eastern edge of Area A-4 along eastern edge	Large pieces of red slag, 6"-1.0' in diameter encountered from 1.5'-10.0' BGS	None Present	Sandy and clayey silt with some organics (roots) encountered at approximately 10.0' BGS.
TP-14	Southern edge of Area A-3	Assorted fill (i.e., blue slag, brick fragments, and concrete) encountered from about 1.0'-2.0' BGS)	None Present	A large concrete slab was encountered at approximately 7.0' BGS and excavation was unable to continue as a result.
TP-15	Center of Area A-3	None Present	None Present	24" thick concrete and stone wall running east to west encountered from 1.5'-10.0' BGS. Vertical steel support for former trestle system encountered from about 1.5'-19.5' BGS
TP-16	Center of Area A-3	None Present	None Present	24" thick concrete and stone wall running south to north encountered from 1.0'-14.5' BGS. Various steel debris encountered at 14.0' BGS

The test pits were backfilled with excavated materials and compacted with the bucket of the excavator. Test Pit Logs are included in Appendix 4.

Slag-Fill Analytical Results:

One (1) representative slag-fill sample was submitted for laboratory analysis from test pit TP-7 completed on September 5, 2008 in area A-1 of the Site as part of the PSCAI. This sample of the slag-fill was encountered in TP-7 at a depth of approximately 1.0' BGS. A representative sample of the slag was collected from around this 1.0-foot depth and submitted for laboratory analysis.

Paradigm Environmental Services, Inc. (Paradigm) in Rochester, New York analyzed the slag sample. Paradigm is a New York State Department of Health Environmental Laboratory Approval Program (NYSDOH ELAP)-certified laboratory. The sample was submitted to Paradigm for analysis of the following parameters:

- USEPA Target Compound List (TCL) and NYSDEC Spills Technology and Remediation Series (STARS)-list VOCs via USEPA Method 8260;
- USEPA TCL and NYSDEC STARS-list SVOCs via USEPA Method 8270;
- Target Analyte List (TAL) Metals via USEPA Methods 6010 and 7471; and,
- Cyanide via USEPA Method SW 9012.

The slag sample was placed in laboratory supplied bottle-ware, stored in a cooler with ice packs and transported under chain of custody procedures to Paradigm for analysis.

Metals:
A summary of the metals analytical results for the slag sample collected from area A-1 are presented in Table 2 on the following page.

Table 2
Summary of Target Analyte Metals detected in Slag Sample
All results presented in mg/Kg or parts per million (ppm)

Parameter	TP-7	NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives	United States Environmental Protection Agency Eastern USA Background Levels	NYSDEC Subpart 375-6 Remedial Program Soil Cleanup Objectives for the Protection of Public Health - Restricted Residential Use
	Area A-1			
Aluminum	9,870	SB	33,000	N/A
Antimony	ND<6.62	SB	N/A	N/A
Arsenic	**10.9**	7.5 or SB	3.0-12.0	16
Barium	156	300 or SB	15-600	400
Beryllium	**1.39**	0.16 or SB	0-1.75	72
Cadmium	**1.83**	1 or SB	0.1-1	4.3
Calcium	54,300	SB	130-35,000	N/A
Chromium	**14.4**	10 or SB	1.5-40	110
Cobalt	6.32	30 or SB	2.5-60	N/A
Copper	17.9	25 or SB	1.0-50	270

Table 2 (continued)
Summary of Target Analyte Metals detected in Slag Sample
All results presented in mg/Kg or parts per million (ppm)

Parameter	TP-7 Area A-1	NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives	United States Environmental Protection Agency Eastern USA Background Levels	NYSDEC Subpart 375-6 Remedial Program Soil Cleanup Objectives for the Protection of Public Health - Restricted Residential Use
Total Cyanide	*11,000*	***	N/A	27
Iron	**50,600**	2,000 or SB	2,000-550,000	N/A
Lead	35.9	SB ****	****	400
Magnesium	13,200	SB	100-5,000	N/A
Manganese	816	SB	50-5,000	2,000
Mercury	0.0145	0.1	0.001-0.2	0.81
Nickel	**14.3**	13 or SB	0.5-25	310
Potassium	1,510	SB	8,500-43,000 **	N/A
Selenium	ND<0.552	2 or SB	0.1-3.9	180
Silver	2.41	SB	N/A	180
Sodium	489	SB	6,000-8,000	N/A
Thallium	ND<0.0662	SB	N/A	N/A
Vanadium	25.5	150 or SB	1-300	N/A
Zinc	**111**	20 or SB	9.0-50	10,000

Notes:

ND<0.0662 denotes the compounds was not detected above the laboratory method detection limit.
***Bold type** denotes that the compound was detected at a concentration that was found to exceed its associated NYSDEC TAGM #4046 Recommended Soil Cleanup Objective.*
Highlighted type denotes that the compound was detected at a concentration that was found to exceed its associated USEPA Eastern USA Background Level.
Italicized type denotes that the compound was detected at a concentration that was found to exceed its associated NYSDEC Subpart 375-6 Remedial Program Soil Cleanup Objectives for the Protection of Public Health – Restricted Residential Use criteria.
SB denotes Site Background [Note: "Site Background" sampling was not completed as part of this investigation].
*** New York State background*
**** Some forms of Cyanide are complex and very stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objective.*

***** 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.*
****** Recommended soil cleanup objectives are average background concentrations as reported in a 1984 survey of reference material by E. Carol McGovern, NYSDEC.*

As noted in Table 2, each of the TAL metals were present at detectable levels in the slag sample collected from test pit TP-7 (1.0') with the exception of antimony, selenium, and thallium. In addition the metals arsenic, beryllium, cadmium, chromium, iron, nickel, and zinc were found to exceed the NYSDE TAGM #4046 Recommended Soil Cleanup Objectives. The metals cadmium, calcium, magnesium, and zinc were found to exceed their respective USEPA Eastern USA Background Levels. Additionally, only total cyanide was found to exceed its associated NYSDEC Subpart 375-6 Remedial Program Soil Cleanup Objective for the Protection of Public Health – Restricted Residential Use criteria.

No other metals were detected in the slag sample at levels exceeding the laboratory method detection limits (MDLs).

Volatile Organic Compounds (VOCs):

The VOC m,p-Xylene was the only VOC detected above the laboratory MDL in the slag sample collected from TP-7 in area A-1. However, the concentration of m,p-Xylene (11.4 μg/Kg) was not found to exceed the NYSDEC TAGM #4046 RSCO for this constituent. No other VOCs were detected in the slag sample collected from TP-7 completed within area A-1 at concentrations above the reported laboratory MDLs.

Semi-Volatile Organic Compounds:
No SVOCs were detected in the slag sample collected from TP-7 within area A-1 at concentrations above the reported laboratory MDLs.

Copies of the laboratory analytical reports are included in Appendix 5. Additionally, copies of available analytical reports for previous environmental samples collected at the Site are included in Appendix 5. Please refer to Figures 4 & 5 for the locations of the samples with their corresponding analytical data.

6.0 Combined Geotechnical and Environmental Rotary Drill-Rig Soil Borings

LaBella and Foundation Design, P.C. of Rochester, New York (Foundation Design) collaborated to implement the geotechnical and environmental soil borings in order to gain a more thorough understanding of the subsurface characteristics of the Site. A geotechnical evaluation of the Site was completed from October 23, 2008 through October 24, 2008 and on October 27, 2008 through the advancement of eight (8) soil borings. The soil boring locations are presented in Table 3 on the following page.

Table 3
Soil Boring Summary

Parcel	Soil Boring IDs
A-1	B08-3, B08-5, B08-6, B08-7, and B08-8
A-2	No soil borings advanced here as part of the PSCAI
A-3	B08-1
A-4	B08-2/MW-1 and B08-4

As described above, the eight (8) soil borings were advanced in select areas of the Site based on existing data. The locations were intended to fill "data gaps" associated with the existing data generated from previous subsurface investigations in this area.

Soil Boring Program:

Borings for the PSCAI were advanced with a truck-mounted rotary drill. The use of rotary drilling technology allows for relatively rapid sampling, observation and characterization of discrete intervals of overburden soils. The drill rig was equipped with 4.25-inch inside diameter (ID) hollow-stem augers to penetrate the overburden and 2-inch by 2-foot split-spoon samplers. The split-spoons were driven into the soil using a 140-pound hammer allowed to freefall 30-inches in general accordance with American Society for Testing and Materials (ASTM)-D 1586-84 standard procedures. The number of blows needed to drive the sampler each 6-inches of penetration were recorded on the soil boring log sheets which are included in Appendix 4 of this report.

At each sampling location, soils were sampled continuously over the entire length of the boring. Each soil sample was visually inspected by a LaBella environmental geologist for the presence of fill layers (primarily slag), stains and monitored with a PID. Soil borings B08-1 through B08-4 were sampled continuously over the entire depth of the boring until the boring was confirmed to have penetrated at least five (5) feet into the native soil (glacial till) horizon observed beneath the Site. Soil borings B08-5 through B08-8 were sampled continuously over the entire depth of the boring until the boring was confirmed to have penetrated at least five (5) feet into the native soil horizon observed beneath the Site in order to confirm or deny the presence of fill materials. Soil samples were classified in general accordance with Unified Soil Classification System (USCS) specifications, and logged on the Soil Boring Log datasheets included in Appendix 4 of this report.

The soil borings completed at the Site were advanced to depths ranging from 14.0 to 22.0-feet BGS with all borings terminated in native soil deposits. The soil and fill materials collected from the borings were continuously assessed by a LaBella Associates' Environmental Geologist for soil type, changes in lithology, and evidence of impairment. Based on observations of the soil borings, a green line was added to Figures 4 & 5 to show the approximate limit of non-slag containing fill materials at the Site. Non-slag containing fill materials were confirmed in soil borings and/or test pits to the east of this green line.

Geology and Subsurface Fill Characterization:

- Area A-1:

Five (5) soil borings B08-3, B08-5, B08-6, B08-7, and B08-8 were advanced with area A-1. A topsoil deposit was encountered only in soil boring B08-3, as this was the only boring completed off of the asphalt parking lot in area A-1. The topsoil deposit generally consisted of dark brown SILT with some medium to fine-grained SAND and containing organic matter including roots, root traces and humus. The topsoil deposit was observed to be approximately 1.0-feet thick. Asphalt pavement, generally 0.3 to 0.4-feet thick with an underlying 0.3 to 2.6-feet layer of crushed gravel sub-base, was encountered at the ground surface at soil boring locations B08-5 through B08-8.

Soils encountered beneath either the topsoil layer or asphalt pavement/sub-base consisted of non-slag containing fill material. The fill material ranged in texture from a SILT and coarse-grained SAND to no Silt and medium to coarse-grained SAND with some coarse GRAVEL. The non-slag containing fill material was identifiable by the presence of man-made materials including cinders, foundry sand, ash, concrete fragments, asphalt, refractory sand, coal dust and fragments, brick fragments, creosote treated wood and/or glass. Non-slag containing fill material deposits within area A-1 ranged from 1.0 to approximately 3.4-feet thick with the thicker fill material deposits generally located toward the center of area A-1 near soil boring B08-7. In area A-1, blue slag was encountered in soil boring B08-3. Slag was not encountered in soil boring B08-5 through B08-8 advanced in area A-1. The layer of blue slag in B08-3 was found to extend from approximately 6.0-feet to 18.0-feet BGS.

A peat deposit was encountered within soil boring B08-3 at approximately 18-feet BGS [Note: the other borings in area A-1 did not extend to this depth]. The peat layer was observed to be approximately 1.0 foot in total thickness. Figure 6 depicts the approximate location of the early 1800's Lake Ontario shoreline and associated marsh areas. According to Figure 6, the location of B08-3 was within a former marsh area. Native soil deposits consisting of Lacustrine (beach) deposits mixed with either Alluvial (deltaic) deposits were encountered below the peat deposit. These native soil deposits generally ranged in texture from coarse to fine-grained SAND with trace to no Silt & Clay and trace to no fine-grained Gravel to Clayey SILT with trace to no very fine-grained Sand. A Glacial Till deposit was observed to underlay these Lacustrine and/or Alluvial deposits within area A-1. Based on the soil boring GT-1 completed to bedrock in area A-2, it is inferred that this Glacial Till deposit extents to the top of bedrock determined to be at approximately 54-feet BGS in area A-1.

- Area A-2:

No soil borings were advanced in area A-2 during this PSCAI. However, eight (8) test pits were excavated in A-2 during the PSCAI. Test pits TP-2, TP-3, TP-4, TP-5, TP-6, TP-8, TP-10, and TP-11 were excavated throughout area A-2 and were located based on the results of the geophysical survey and historical Site features. Based on these test pits, a topsoil deposit was encountered in each test pit with the exception of TP-4. The topsoil deposit generally consisted of dark brown SILT with some medium to fine-grained SAND and containing organic matter including roots, root traces and humus. The topsoil deposit was observed to be approximately 0.5 to 1.0-feet thick. A layer of crushed gravel was encountered at the ground surface at test pit TP-4. This crushed gravel layer was observed to be approximately 1.0-foot thick.

Soils encountered below the topsoil deposit in test pits TP-2, TP-3, TP-5, TP-8, and TP-10 and beneath the gravel layer in TP-4 consisted of non-slag containing fill material. The non-slag containing fill material ranged in texture from a SILT and coarse-grained SAND to no Silt and medium to coarse-grained SAND with some coarse GRAVEL. The non-slag containing fill material was identifiable by the presence of man-made materials including cinders, foundry sand, ash, concrete fragments, asphalt, refractory sand, coal dust and fragments, brick fragments, creosote treated wood and/or glass. Non-slag containing fill material deposits within area A-2 ranged from 1.0 to approximately 7.0-feet thick with the thicker non-slag containing fill material deposits generally located toward eastern and northern portions of A-2, toward test pits TP-8 and TP-10. Slag was not encountered in any of the other test pits excavated in area A-2.

The non-slag containing fill material observed in the test pits excavated in area A-2 were underlain by Native soil deposits consisting of Lacustrine (beach) deposits mixed with either Alluvial (deltaic) deposits. These native soil deposits generally ranged in texture from coarse to fine-grained SAND with little to no Silt & Clay and trace to no fine-grained Gravel to Clayey SILT with trace to no very fine-grained Sand. A Glacial Till deposit was observed to underlay these Lacustrine and/or Alluvial deposits within area A-2 based on the soil boring GT-1. Based on the soil boring GT-1 completed to bedrock, it is inferred that this Glacial Till deposit extents to the top of bedrock at a depth of approximately 54-feet BGS in area A-2.

- Area A-3:

One (1) soil boring B08-1was advanced with area A-3. A topsoil deposit was encountered here that generally consisted of dark brown SILT with some medium to fine-grained SAND and containing organic matter including roots, root traces and humus. The topsoil deposit was observed to be approximately 0.4-feet thick. The topsoil deposit observed in area A-3 was underlain by re-worked native soil. This native soil consisted of Lacustrine (beach) deposits mixed with either Alluvial (deltaic) deposits. These native soil deposits generally ranged in texture from coarse to fine-grained SAND with trace to no Silt & Clay and trace to no fine-grained Gravel to Clayey SILT with trace to no very fine-grained Sand. A Glacial Till deposit was observed to underlay these Lacustrine and/or Alluvial deposits within area A-3. Slag was not encountered in soil boring B08-1 advanced in area A-3.

- Area A-4:

Two (2) soil borings B08-2 and B08-4 were advanced within area A-4. A topsoil deposit was encountered in both soil borings. The topsoil deposit in boring B08-4 was encountered directly below approximately 1.0 foot of asphalt and crushed gravel sub-base. The topsoil deposit generally consisted of dark brown SILT with some medium to fine-grained SAND and containing organic matter including roots, root traces and humus. The topsoil deposit was observed to be approximately 1.0 to 1.8-feet thick.

In area A-4, blue slag was encountered in soil boring B08-2 and B08-4. The layer of blue slag in B08-2 was found to extend from approximately 2.0-feet to 13.6-feet BGS. The layer of blue slag in B08-4 was found to extend from approximately 4.0 to 6.0-feet BGS.

The blue slag observed in soil boring B08-2 was underlain by a peat deposit at approximately 13.6-feet BGS. The peat layer was observed to be approximately 5.0 foot in total thickness. Figure 6 depicts the approximate location of the early 1800's Lake Ontario shoreline and associated marsh areas. According to Figure 6, the location of B08-2 was within a former marsh area. However, boring B08-4 was not observed to contain a peat layer. Native soil deposits consisting of Lacustrine (beach) deposits mixed with either Alluvial (deltaic) deposits were encountered below the peat deposit or below the slag material in boring B08-4. These native soil deposits generally ranged in texture from coarse to fine-grained SAND with trace to no Silt & Clay and trace to no fine-grained Gravel to Clayey SILT with trace to no very fine-grained Sand. A Glacial Till deposit was observed to underlay these Lacustrine and/or Alluvial deposits within area A-4.

The depth to water on November 5, 2008 within area A-4 (greenspace) was observed at approximately 11.57-feet below the top of the well casing with a groundwater elevation of approximately 246-feet above mean sea level. Figure 5 presents elevation contours of the topography at the Site based on a survey of the Port of Rochester.

The approximate locations of the soil borings and monitoring well completed at the Site are presented on Figures 4 & 5.

Based on the test pits and soil borings completed at the Site during this PSCAI and previous investigations, an approximation of the extent of non-slag containing fill materials and slag materials has been estimated. As shown on Figures 4 & 5, the approximate extent of slag is shown with a red dashed line. The approximate extent of fill materials is shown with a green dashed line.

Overburden Well Installation:

One (1) shallow overburden groundwater monitoring well was installed within soil boring B08-2 advanced within the footprint of area A-4 (greenspace) on October 24, 2008. Monitoring well B08-2/MW-1 was installed to assess groundwater conditions in the northeast portion of the Site.

The well was constructed using 10-feet of 0.010 inch slotted; 2 inch ID Schedule 40 PVC well screen manifolded to an appropriate length of 2-inch ID Schedule 40 PVC riser pipe installed to the base of the boring. The length of the well screen was designed to intercept the top of the water table within the boring, allowing for the observation and sampling of light, non-aqueous phase liquids (LNAPL), if encountered. A filterpack consisting of 00N quartz sand was installed in the annular space surrounding the well to a height of approximately 1.0-foot above the top of the well screen. A bentonite pellet seal was then installed above the sand pack to prevent the intrusion of surface runoff. The well was completed with a locking steel "stick-up" cap completed with a concrete pad.

One (1) day after completion of the well, the well was developed by alternately surging and bailing the well using a dedicated, polyethylene bailer. No dispersing agents, acids, disinfectants, or other additives were used during development or introduced into the well at any other time. The well development included washing the entire well cap and the interior of the well casing above the water table, using only water from the well itself. Eleven days after completion of development, the well was purged of approximately three (3) well volumes and sampled using a disposable polyethylene bailer.

Paradigm in Rochester, New York analyzed the groundwater sample. Paradigm is a NYSDOH ELAP-certified laboratory. The sample was submitted to Paradigm for analysis of the following parameters:

- USEPA TCL and NYSDEC STARS-list VOCs via USEPA Method 8260;
- USEPA TCL and NYSDEC STARS-list SVOCs via USEPA Method 8270; and,
- TAL Metals via USEPA Methods 6010 and 7471.

The groundwater sample was placed in laboratory supplied bottle ware, stored in a cooler with ice packs and transported under chain of custody procedures to Paradigm for analysis.

The groundwater sampling log is presented as Appendix 4.

Groundwater Analytical Results:

One (1) groundwater sample collected from monitoring well B08-2/MW-1 which was completed within area A-4 (greenspace) was submitted for laboratory testing on October 29, 2008. The analytical results from the groundwater sample was compared to the New York State (NYS) Part 703 Groundwater Standards published in the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 dated June 1998. Copies of the laboratory reports are included in Appendix 5. A discussion of the groundwater sampling results is provided below.

Volatile Organic Compounds:

No VOCs were detected in the groundwater sample submitted from monitoring well B08-2/MW-1 completed within area A-4 (greenspace) at concentrations above the reported laboratory MDLs.

Semi-Volatile Organic Compounds:

No SVOCs were detected in the groundwater sample submitted from monitoring well B08-2/MW-1 completed within area A-4 (greenspace) at concentrations above the reported laboratory MDLs.

Metals:

A summary of the metals analytical results for the groundwater sample collected from area A-4 (greenspace) are presented in Table 4 on the following page.

Table 4
Summary of Target Analyte List Metals detected in Groundwater
All results presented in µg/L or parts per billion (ppb)

Parameter / Sample ID #	B08-2/MW-1	B08-2/MW-1	6 NYCRR Part 703 Groundwater Standards
	10/29/2008	**2/11/2009**	
Aluminum	128,000	2.78	Not Available
Antimony	ND<60	ND<0.060	0.003
Arsenic	**43**	0.01	0.025
Barium	797	0.156	1
Beryllium	6	ND<0.005	1
Cadmium	8	ND<0.005	0.01
Calcium	397	139	Not Available
Chromium	**187**	ND<0.010	0.05
Cobalt	69	ND<0.010	Not Available
Copper	187	ND<0.010	0.2
Iron	**174,000**	**9.53**	0.3
Lead	**93**	ND<0.005	0.025
Magnesium	**120,000**	**43.6**	35
Manganese	**3,940**	**1.17**	0.3
Mercury	0.2	ND<0.002	0.0007
Nickel	**145**	ND<0.040	0.1
Potassium	40,800	8.43	Not Available
Selenium	**22**	0.007	0.01
Silver	ND<10	ND<0.010	0.05
Sodium	**544,000**	**830**	20
Thallium	ND<6	ND<0.006	0.0005
Vanadium	247	ND<0.010	Not Available
Zinc	**505**	ND<0.020	2

Notes:

ND<10 denotes the compounds was not detected above the laboratory method detection limit.
***Bold type** denotes that the compound was detected at a concentration that was found to exceed its associated 6 NYCRR Part 703 Groundwater Standard.*

As noted in Table 4, the metals arsenic, chromium, iron, lead, magnesium, manganese, nickel, selenium, and sodium were present at detectable levels in the groundwater sample collected from monitoring well B08-2/MW-1 located in area A-4 (greenspace). In addition these metals were detected at concentrations that were found to exceed the NYSDEC Part 703 Groundwater Standard for each respective metal.

No other metals were detected in the groundwater sample from B08-2/MW-1 at levels exceeding their associated 6 NYCRR Part 703 Groundwater Standards.

Due to the reported concentrations of the aforementioned metals in the groundwater sample collected from B08-2/MW-1 on October 29, 2008 low-flow sampling of this monitoring well was conducted on February 11, 2009. Low-flow groundwater sampling typically provides a nearly turbid free groundwater sample. resulting in relatively significant difference in contaminant concentrations. The low flow sampling methodology, resulting in a nearly turbid free groundwater sample, indicates that heavy metals of concern such as cadmium, chromium, lead, and mercury were not present at concentrations that exceed their respective detection limits, and arsenic and barium were detected at concentrations well below their respective standards.

The low flow groundwater results suggest that metals potentially associated with slag fill materials at the Site are not leaching and impacting groundwater.

7.0 Fill Management

New York State's Solid Waste Management Regulations, Environmental Conservation Law 6 NYCRR Part 360 (Part 360) are the authority by which the State sets design standards and operational criteria for all solid waste management facilities. As such, the NYSDEC may consider the slag and some of the non-slag containing fill material observed in the subsurface (i.e., cinders, ash, coal, foundry sand, etc.) of the Site to be regulated solid waste. Regulated Solid Waste is defined by the NYSDEC as waste generated by manufacturing or industrial processes.

> " Such processes may include, but are not limited to the following: electric power generation; fertilizer/agricultural chemicals; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay and concrete products; textile manufacturing; transportation equipment; and water treatment. The forms of such wastes are exemplified by but not limited to: liquids such as acids, alkalis, caustics, leachate, petroleum (and its derivatives), and processes or treatment wastewaters; sludges which are semi-solid substances resulting from process or treatment operations or residues from storage or use of liquids; solidified chemicals, paints or pigments; and dredge spoil generated by manufacturing or industrial processes, foundry sand, and the end or by-products of incineration or other forms of combustion. This term does not include oil or gas drilling, production, and treatment wastes (such as brines, oil, and frac fluids); overburden, spoil, or tailings resulting from mining; or solution mining brine and insoluble component wastes. "

The proper management of these Regulated Solid Waste materials will be necessary during ground intrusive development activities at the Site. The Port of Rochester Environmental Management Plan (EMP) included in Appendix 11, may be used as a model to the characterization and management of these Regulated Solid Waste materials. To better understand the subsurface conditions of the Site Figure 7 presents the approximate depths and thicknesses of both non-slag and slag containing Regulated Solid Waste materials. Figure 7 is based upon the data collected during the PSCAI and previous investigations.

The software program Surfer® 8 developed by Golden Software, Inc. of Golden, Colorado was utilized to contour the depths and thicknesses and to calculate the approximate volumes. The software program Surfer® 8 created grids of the data using the Natural Neighbor algorithm and used the Trapezoidal Rule, Simpson's Rule, and Simpson's 3/8 Rule as the scientific methods for determining volume. Appendix 6 presents the results of the software generated volumes of non-slag and slag containing Regulated Solid Waste.

The lateral extents of slag containing and non-slag containing Regulated Solid Waste materials are also shown on Figure 7. It should be noted that discrete layers of slag and non-slag Regulated Solid Waste can be located in the same area but at different vertical depths (refer to the cross sections, Figures 8 through 12). Table 5 below summarizes the volumes of slag containing, non-slag containing and total Regulated Solid Waste materials within the PSCAI Site boundaries.

Table 5
Regulated Solid Waste Volumes
(Slag and Non-Slag Containing)

Area	Regulated Solid Waste Without Slag (CY)	Regulated Solid Waste With Slag (CY)	Total Regulated Solid Waste (CY)
A-1	2,258	4,147	6,405
A-2	571	165	736
A-3	39	465	504
Remaining Portions of Site	2,660	6,494	9,154
Totals:	5,528	11,271	***16,799***

[*Note: The above volumes do not include Construction and Demolition debris (C&D, which for the purposes of this evaluation is concrete, brick and asphalt) that was not comingled with Regulated Solid Waste. C&D debris only fill exist at the Site (generally west of the Regulated Solid Waste area) and the volumes and extent of such C&D at the Site are significant.*]

C&D debris was generally observed in test pits located on the western portions of Area A-2 and A-3. Although this material is not considered regulated solid waste, it is important to consider these materials as the relatively significant amounts of C&D debris could present challenges in handling and disposal. As shown on Figure 4, portions of former foundation walls were observed in test pits TP-2, TP-3, TP-5, TP- 12, and TP-15. The C&D materials observed consisted of bricks, cut-stone, concrete, and steel. Being that this infrastructure is likely from the former steel mill that operated in this area, it is possible that additional Regulated Solid Waste may be encountered within some of this former infrastructure. Also, it is likely that more C&D debris exists within the sub-surface in areas A-2 and A-3 than what was observed in the aforementioned test pits. As such, removal and disposal of these C&D debris should be taken in to consideration prior to redevelopment of these areas.

Geologic Cross Sections:

Figures 8 through 12 present five (5) geologic cross sections which illustrate the geology of the Site. Refer to Figure 7for the locations of the starting points and end points of each geologic cross section. Figure 8 presents a cross section of the Site looking south toward Rochester and begins at soil boring B08-3 and ends at geothermal soil boring GT-1. Figure 9 presents a cross section of the Site looking west toward Lake Avenue and begins at soil boring B08-3 and ends at soil boring B08-2/MW-1. Figure 10 presents a cross section of the Site looking north toward Lake Ontario and begins at soil boring B08-2/MW-1 and ends at soil boring B08-1. Figure 11 presents a cross section of the Site looking to the southwest and begins at soil boring B08-3 and ends at soil boring B08-1. Figure 12 presents a cross section of the Site looking to the west and begins at soil boring HA-121 and ends at soil boring B08-1. These geologic cross sections illustrate significant subsurface deposits; fill materials, and other conditions and features.

8.0 Foundation Recommendations

As part of the PSCAI, a geotechnical evaluation was conducted throughout the four (4) areas of the Site by Foundation Design, P.C. (Foundation Design) of Rochester, New York. Foundation Design collaborated with LaBella during the PSCAI to document the findings of the test pitting activities as well as the soil boring study.

The study was meant to assist in evaluating the Site for future redevelopment. Proposed structures considered by this study include wood or steel-framed residential housing buildings or steel-framed office/commercial buildings, including a potential hotel. It was assumed that the new structures would be less than 40-feet in height.

Foundation Design's findings, as well as recommendations for structural development at the Site, are presented in Foundation Design's "Pre-development Assessment" included as Appendix 7 to this report. The Foundation Design report stated the following:

"We offer the following major items for consideration during conceptual design:

- The site previously contained an old steel mill. Remnants of the old plant, including debris laden fills, old foundations, floors slabs, and waste slag by-products lie on the parcel.
- The underlying native soils consist of a thin layer of glacial lake deposits, compact to very dense glacial till, then bedrock.
- An old marsh extends into the east side of the parcel. Deeper slag fills on Lots A-1 and A-4 were placed over the peaty marsh deposits.
- Due to the fill and organic soil conditions, we suspect that a deep foundation system and structural floor slab will be required on Lots A-1 and A-4.

- It is our opinion that building on Lots A-2 and A-3 can be supported using a spread footing foundation system. We suggest designing new structures with at-grade entrances off both North River Street and Lake Avenue; much of the unsuitable material would be removed as part of the lower level excavation work. The following is a list of potential premium cost items associated with redevelopment of these parcels as compared to a 'green' site.
    - Removal of fill required for slab-on-grade/spread footing construction
    - Hoe ramming of old concrete foundations
    - Crushing concrete, brick, cobbles, boulders for structural fill
    - Importing new structural fill to develo9p building pad(s)
    - Off-site disposal of excavated materials (foundations/utility trenches)
    - Import of soil for foundation /utility trench backfill
    - Deep foundation (or caissons, micro-piles, piles) through the fill
    - Structural floor slab(s)
    - Crawl space to hang sub-floor utility systems
    - Crawl space /sub-ventilation system
    - Corrosion protection/wrapping of underground piping
    - Corrosion protection of structural steel/concrete
    - Large diameter pipes/steeper slopes for underground utilities
    - Extra stone base under utility lines
    - Thicker sidewalk sections including geogrid
    - Thicker pavement section including geogrid
    - Lots A-1, A-2, and A-4 contain debris laden fills and/or slag fills. This material is not suitable to support floors or foundations. Assess whether sorting, crushing, and reuse of the concrete, brick, and slag generated during the site grading and excavation work would be less expensive than off-site disposal.
    - We identify this parcel as having a seismic site classification of D."

[*Note: Additional details can be found in the Foundation Design report in Appendix 7. In addition, other potential considerations may be warranted based on project specific conditions.*]

9.0 Existing Utility Summary

The Site is currently serviced by numerous underground utilities, the majority of which are under paved roadways, including Lake Avenue, Portside Drive, River Street, and Corrigan Street, as seen in the *Port of Rochester Harbor and Ferry Terminal Improvements – Access Road and Infrastructure Improvements* as-built drawings included in Appendix 8. The utilities consist of:

- Monroe County Pure Water systems – Storm & Sanitary Sewers
- City of Rochester systems – Water & Street Lighting
- Rochester Gas & Electric – Gas & Electric
- Time Warner Cable – Communications
- Frontier Communications - Communications

The *City of Rochester New York Developers Guide* should be consulted for guidance regarding required permits, and is included as Appendix 9 to this report.

In addition to utility-specific permits, additional permits related to utility connection or installation may be required, such as a Street Opening Permit and an Excavation Permit, which are obtained through the City of Rochester's Department of Environmental Services (DES) Permits Office. The office is located at City Hall, 30 Church Street, Room 121B, and can be contacted at (585) 428-6848.

Based on geotechnical information provided by Foundation Design (see Appendix 7), both the fill materials and the native soil is likely to be considered corrosive to ductile iron pipe. Polyethylene encasement is recommended for any ductile iron pipe installation in areas of slag fill. In shallow fill areas, trench improvement may be accomplished by undercutting utility trenches to remove fill from under the pipe trench, and backfilling with subbase/stone for support. Wrapping the pipe and stone bedding in a geogrid (similar to Mirafi BXG 11) is recommended in the geotechnical report, to span small irregularities that may form under the pipe and cause settling in areas of deeper fill.

Based on the development model presented in Figure 3, and on the design of the Ferry Terminal building and associated retaining wall, a similar tie-back system for the marina retaining wall may have potential impacts on the Site which have not been evaluated at this time. The existing Ferry Terminal tie-back system extends approximately 75' from the sheet pile wall to the end of the tie-back. The tie back system, associated with the proposed marina, may extend into Parcel A-1, A-4, and Corrigan Street.

Municipal Utilities:

If redevelopment results in additional storm or sanitary discharge, a *Rochester Pure Waters District Permit* must be obtained from Monroe County Pure Waters for new connections to sewers. All storm and sanitary sewer piping and laterals described in this section are SDR-35 polyvinyl chloride (PVC). Unlike other areas of the City of Rochester, the Port area has separate storm and sanitary sewer mains, which discharge to separate locations. It is important to note that illicit discharges are not allowed into the storm sewer system. According to the USEPA, "an illicit discharge is defined as any discharge to the municipal separate storm sewer system that is not composed entirely of storm water, except for discharges allowed under a NPDES permit or waters used for firefighting operations."

(http://www.epa.gov/owow/nps/ordinance/discharges.htm) Examples of discharges that shall not be connected to the storm sewer include, but are not limited to: sewage flows, laundry wastewater and floor washing to shop drains.

If the development plan is constructed as shown in Figure 3, the existing River Street utilities will need to be relocated into the new River Street right-of-way and new connections will need to be made with existing utilities. The depth and size of relocated utilities is expected to be similar to the existing utilities. New laterals and services can be constructed from the relocated utilities with the capacity required for the redeveloped use at each parcel.

Sanitary sewers currently consist of 8-inch diameter lines in Corrigan Street and Portside Drive, an 8-inch line in River Street north of Hincher Street, and a 21-inch line in River Street south of Hincher Street. There are multiple laterals available for connection to each of the mains. The invert of the sanitary sewer main under Portside Drive is approximately 9.3 feet below ground surface (bgs) near Lake Avenue, and the invert is approximately 17.3 feet bgs at the manhole located at the intersection with the existing River Street. Under Corrigan Street, the invert is 8.5 feet bgs near Lake Avenue, and 6.7 feet bgs at the manhole located at the intersection with River Street. Inverts and manhole station locations are shown on as-built drawings included in Appendix 8.

The existing storm sewers were designed to capture runoff from the Site in two general locations along the east side of the Site, with a total of four inlets. Two stormwater inlets were installed with connections to the 18-inch diameter line in River Street (south of Hincher) and two were installed with connections to the 21-inch diameter line in River Street (north of Hincher). These storm sewer lines currently convey flow downstream to a Vortex unit for gravity separation of suspended stormwater pollutants with final discharge into the Genesee River.

The invert of a 12-inch storm sewer main under Portside Drive is approximately 5.5 feet bgs at the manhole near Lake Avenue, and approximately 8.6 feet bgs at the manhole located at the intersection with River Street. Under Corrigan Street, the invert of a 12-inch main is 5.5 feet bgs at the manhole near Lake Avenue, and approximately 6.7 feet bgs at the manhole located near the intersection with River Street. Inverts and manhole station locations are shown on as-built drawings included in Appendix 8.

Any water service connection(s) must be approved by the City of Rochester Water Bureau. Eight-inch (8-inch) ductile iron water mains encased in polyethylene installed during the *Port of Rochester Harbor and Ferry Terminal Improvements - Access Roads and Infrastructure Improvements* project are present underneath Corrigan Street, River Street, and Portside Drive. A water main is also present underneath Lake Avenue, located west of the centerline. The 8-inch water mains were designed and installed with the intent that the subject parcel would be developed in the future; therefore, a replacement 8-inch main (in the relocated River Street) would likely be capable of handling "domestic" and fire flow requirements at the Site. The as-built drawings include the record location of the water main, and are included in Appendix 8.

Other Utilities:

Each utility company must be contacted separately for evaluation of the existing capacity of their utility. If additional utility capacity and infrastructure are necessary, based on the specific demands of the proposed Site development, each utility will provide a cost estimate for any upgrades. If the capacity of the existing utility is adequate for the proposed demand, then arrangements should be made with each utility company for connection to the existing services available to the site. Contact information for each utility company is included below:

Utility Company	*Contact Info*
Time Warner Cable	585-756-5000
Frontier Communications	585-777-1611
Rochester Gas & Electric	585-546-1100

Time Warner record mapping indicates underground cable is present within the Site along Portside Drive, River Street, and Corrigan Street, with hand holes present. A stub is present on the Lake Avenue side of the Site, approximately 350 feet north of the intersection with Portside Drive, which would be accessible for service to Parcels A-2 and A-3. Mapping obtained from Time Warner is included in Appendix 10. The as-built drawings include the location of the underground cable, and are included in Appendix 8.

Frontier Communications record mapping indicates ducts under the western portion of Lake Avenue with two manholes present west of the Site. Service for the proposed parcels could be obtained from the existing utilities. Mapping obtained from Frontier Communications is included in Appendix 10.

Rochester Gas and Electric has multiple underground electric utility lines in the Lake Avenue ROW, adjacent to the Site, varying from twelve to sixteen 5-inch diameter PVC electrical conduits, and including stubs located on either side of the curb cut present at Lake Avenue (called out as Pedestrian Access in Figure 3). An 8-inch natural gas pipeline, which reduces to a 4-inch natural gas pipeline, is present on the west side of Lake Avenue. Within the Site, a gas pipeline and an electrical conduit are located generally under the sidewalk in the current western ROW of River Street. A 4-inch polyethylene gas pipeline is present in the ROW of Portside Drive, River Street, and Corrigan Street. The underground electrical conduit (consisting of six 5-inch diameter PVC conduits) crosses Portside Drive in two places, is present north of Portside Drive along the eastern half of the road, continues under the sidewalk along River Street as noted above, and intersects Corrigan Street as it continues north.

Existing gas pipelines and electrical conduits are present throughout the proposed Site and along Lake Avenue; however, the capacity of these utilities will require evaluation by Rochester Gas and Electric, following the development of a specific site design with estimated demand for natural gas and electric needs. Mapping obtained from Rochester Gas and Electric is included in Appendix 8 which illustrates the locations of utilities at the Site and in the vicinity of the Site. The as-built drawings include the location of the underground gas and electric utilities, and are included in Appendix 10.

10.0 Conclusions and Recommendations

LaBella was retained by the City of Rochester to conduct a Predevelopment Investigation at a parcel of land within the Port of Rochester which has been targeted for redevelopment. To encourage the redevelopment of the Site, the City of Rochester has designed a development model for the Site that breaks the Site into four (4) parcels. The subsurface of each area was investigated and documented for the purposes of gaining an understanding of what development of these areas would involve. The development considerations included in the report are 1) Environmental; 2) Geotechnical; and, 3) Underground Utilities. Each of these considerations is discussed below.

Environmental Considerations:

Historical use of the Site included steel mill operations which produced by products such as foundry sand, cinders, and slag. These materials were used to expand the shoreline in the north and east direction toward the Genesee River, and subsequently fill in the naturally occurring marsh areas between the steel mill and the Genesee River. As such, significant quantities of these fill materials, which are considered Regulated Solid Waste by NYSDEC, are known to exist at the Site.

As part of the investigation, the previously issued subsurface investigation reports were researched and pertinent information was gathered from these earlier reports. This information included depth to bedrock at the Site, Regulated Solid Waste without slag and regulated solid waste with slag, and topographic elevations of the Site.

The PSCAI included conducting a geophysical survey of the Site, excavating sixteen (16) test pits, advancing eight (8) rotary drill rig advanced soil borings, and collecting/analyzing fill and groundwater samples. The field observations conducted as part of this work were used to develop the estimated areal and vertical extent of Regulated Solid Waste (slag containing and non-slag containing). In addition, volumes of slag and of Regulated Solid Waste were also estimated.

The analytical testing of the slag material found certain heavy metals to exceed established NYSDEC TAGM #4046 RSCOs and USEPA Eastern USA Background Levels. Groundwater analytical results also reported detections of heavy metals that were found to exceed the established NYSDEC groundwater quality standards for these constituents during the initial analytical testing of the groundwater from monitoring well B08-2/MW-1. However, low-flow sampling of this monitoring well provided a groundwater sample that essentially turbid free. Laboratory analysis of this groundwater sample reported a relatively significant decrease in metals concentrations. The low flow groundwater sample results suggest that metals potentially associated with slag fill materials at the Site are not leaching and impacting groundwater.

In the event that future structures are constructed in areas of the Site where slag would remain in the subsurface, the installation of a sub-slab vapor intrusion mitigation system is recommended. Typical sulfur-like odors were observed to be associated with the slag deposits on-site. Additionally, it is likely that the New York State Department of Health (NYSDOH) and/or the Monroe County Health Department (MCHD) would require the installation of this type of system within future on-site structures.

Based on these results, the presence of cinders, coals, ash and slag (Regulated Solid Waste) on-site represents a development concern; however, proper planning and management of these materials can avoid delays in construction and provide developers the tools necessary to make informed decisions. It should also be noted that significant quantities of C&D fill are also located at the Site, generally west of the Regulated Solid Waste area.

LaBella recommends that a development specific SGMP be developed and implemented at the Site. The SGMP will guide the on-site re-use or off-site reuse and/or off-site disposal of Regulated Solid Waste during development. A SGMP would also provide direction on how to properly dewater, handle and dispose of groundwater, if needed, during development activities. Furthermore a SGMP would indicate the required monitoring and documentation to be conducted during such activities. In addition to a SGMP, a beneficial use determination (BUD) of the Regulated Solid Waste (or portions thereof, e.g., slag) materials could be applied for to NYSDEC in order to minimize off-site disposal costs. [*Note: A BUD is a designation made by the NYSDEC as to how the Part 360 Regulated Solid Waste material is to be beneficially used. Once the NYSDEC grants a BUD, the waste material ceases to be considered a solid waste (for the purposes of Part 360) when used as defined in the BUD.*] Additionally, a SGMP would assist in determining the type, or types, of structures desired to be constructed at the Site as described below.

Geotechnical Considerations:

Foundation Design collaborated with LaBella during this PSCAI to observe subsurface characteristics of the Site. Foundation Design observed the test pits and soil borings advanced and developed the document titled "Predevelopment Assessment" to provide recommendations and considerations for the design of foundations and structures at the different areas of the Site. This document is provided in Appendix 7 of this PSCAI Report. The Foundation Design report stated the following:

"We offer the following major items for consideration during conceptual design:

- The site previously contained an old steel mill. Remnants of the old plant, including debris laden fills, old foundations, floors slabs, and waste slag by-products lie on the parcel.
- The underlying native soils consist of a thin layer of glacial lake deposits, compact to very dense glacial till, then bedrock.
- An old marsh extends into the east side of the parcel. Deeper slag fills on Lots A-1 and A-4 were placed over the peaty marsh deposits.
- Due to the fill and organic soil conditions, we suspect that a deep foundation system and structural floor slab will be required on Lots A-1 and A-4.
- It is our opinion that building on Lots A-2 and A-3 can be supported using a spread footing foundation system. We suggest designing new structures with at-grade entrances off both North River Street and Lake Avenue; much of the unsuitable material would be removed as part of the lower level excavation work.
- Lots A-1, A-2, and A-4 contain debris laden fills and/or slag fills. This material is not suitable to support floors or foundations. Assess whether sorting, crushing, and reuse of the concrete, brick, and slag generated during the site grading and excavation work would be less expensive than off-site disposal.
- We identify this parcel as having a seismic site classification of D."

[*Note: Additional details can be found in the Foundation Design report in Appendix 7. In addition, other potential considerations may be warranted based on project specific conditions.*]

Existing Utility Considerations:

The Site is currently serviced by a variety of underground utilities. The development of the Site could warrant utility work at the Site. As such, the *City of Rochester New York Developers Guide* should be consulted for guidance regarding required permits, and is included as Appendix 9 to this report. In addition to this guide, the following should be considered by developers.

- In addition to utility-specific permits, additional permits related to utility connection or installation may be required, such as a Street Opening Permit and an Excavation Permit, which are obtained through the City of Rochester's Department of Environmental Services (DES) Permits Office. The office is located at City Hall, 30 Church Street, Room 121B, and can be contacted at (585) 428-6848.

- The fill materials and the native soil is likely to be considered corrosive to ductile iron pipe. Polyethylene encasement is recommended for any ductile iron pipe installation in areas of slag fill.

- In shallow fill areas, trench improvement may be accomplished by undercutting utility trenches to remove fill from under the pipe trench, and backfilling with subbase/stone for support. Wrapping the pipe and stone bedding in a geogrid (similar to Mirafi BXG 11) is recommended in the geotechnical report, to span small irregularities that may form under the pipe and cause settling in areas of deeper fill.

- Based on the development model presented in Figure 3, a tie-back system for the marina and associated retaining wall (similar to the Ferry Terminal building system) may be required which may have potential impacts on the Site which have not been evaluated at this time.

- If redevelopment results in additional storm or sanitary discharge, a *Rochester Pure Waters District Permit* must be obtained from Monroe County Pure Waters for new connections to sewers. The Port area has separate storm and sanitary sewer mains, which discharge to separate locations. It is important to note that illicit discharges are not allowed into the storm sewer system. There are existing sanitary and storm sewer laterals available for connection. Information on inverts of these sewers is provided in the previous sections. It should be noted that the storm sewer lines currently convey flow downstream to a Vortex unit for gravity separation of suspended stormwater pollutants with final discharge into the Genesee River. Additional stormwater flows would require designing and approval by regulatory agencies.

- If the development plan is constructed as shown in Figure 3, the existing River Street utilities will need to be relocated into the new River Street right-of-way and new connections will need to be made with existing utilities.

- Any water service connection(s) must be approved by the City of Rochester Water Bureau. Eight-inch ductile iron water mains encased in polyethylene are present underneath Corrigan Street, River Street, and Portside Drive. A water main is also present underneath Lake Avenue, located west of the centerline. The 8-inch water mains were designed and installed with the intent that the subject parcel would be developed in the future; therefore, a replacement 8-inch main (in the relocated River Street) would likely be capable of handling "domestic" and fire flow requirements at the Site.

- Other utilities (gas, electric, cable, etc.) will require contact each utility separately to arrange for connection to the existing utility services available to the site. Contact information for each utility company was included in the previous section and available record mapping is included in the pertinent appendices.

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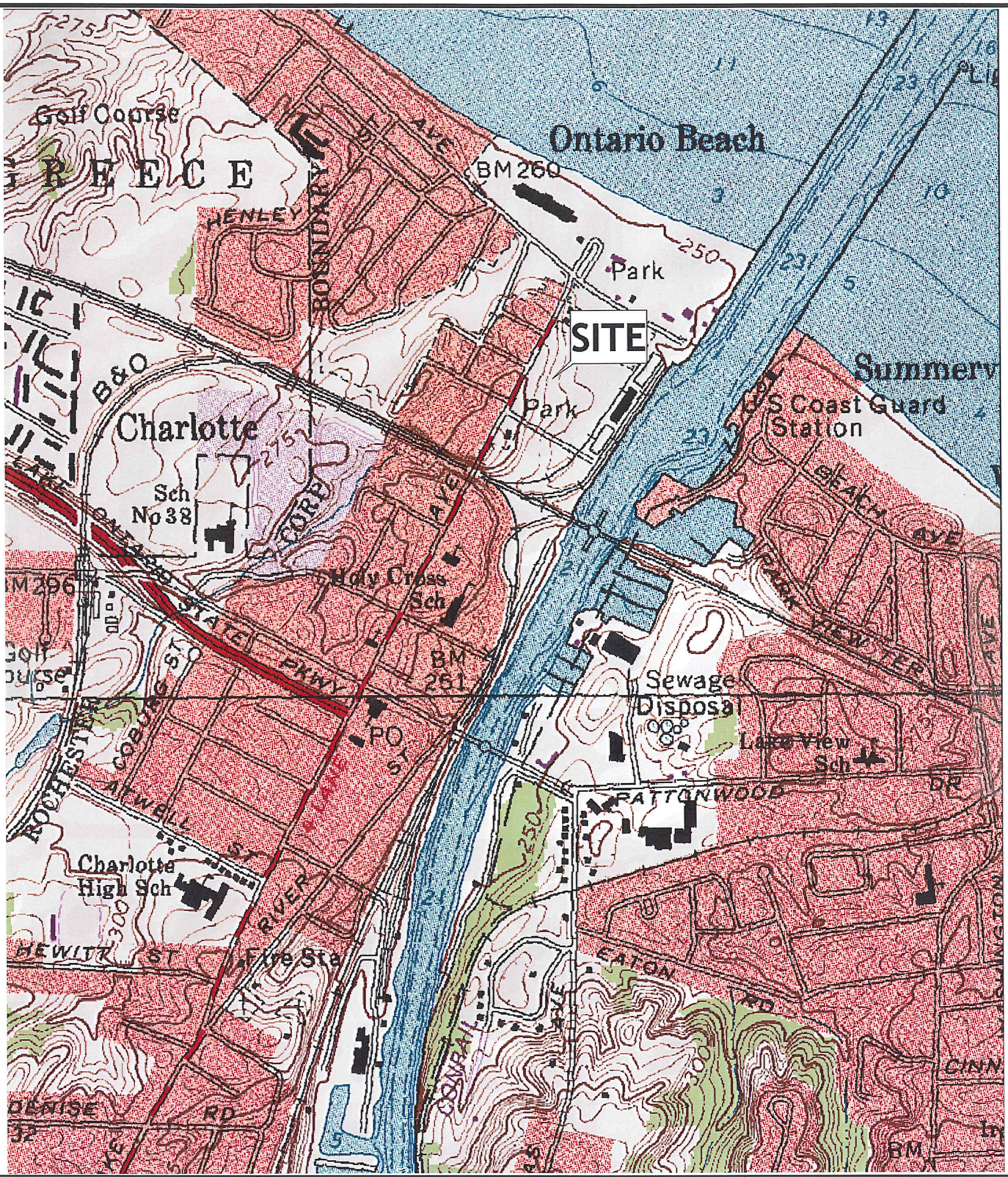
300 State Street
Rochester, New York 14614

Figures



N

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FIGURE 1

SITE LOCATION MAP

Predevelopment Investigation Report

Port of Rochester

Development Area #1

Rochester, New York

LABELLA

PROJECT NO. 208453

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FIGURE 2

DRAWING TITLE

Site Location Map

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REVIEW	DRAWN BY: RCN
DATE: 12/2/2008	REVIEWED BY: ED

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Predevelopment Investigation
Development Area 1
Port of Rochester

Rochester, New York

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Associates, P.C.

300 STATE STREET
ROCHESTER, NY 14614
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F: (585)454-3066
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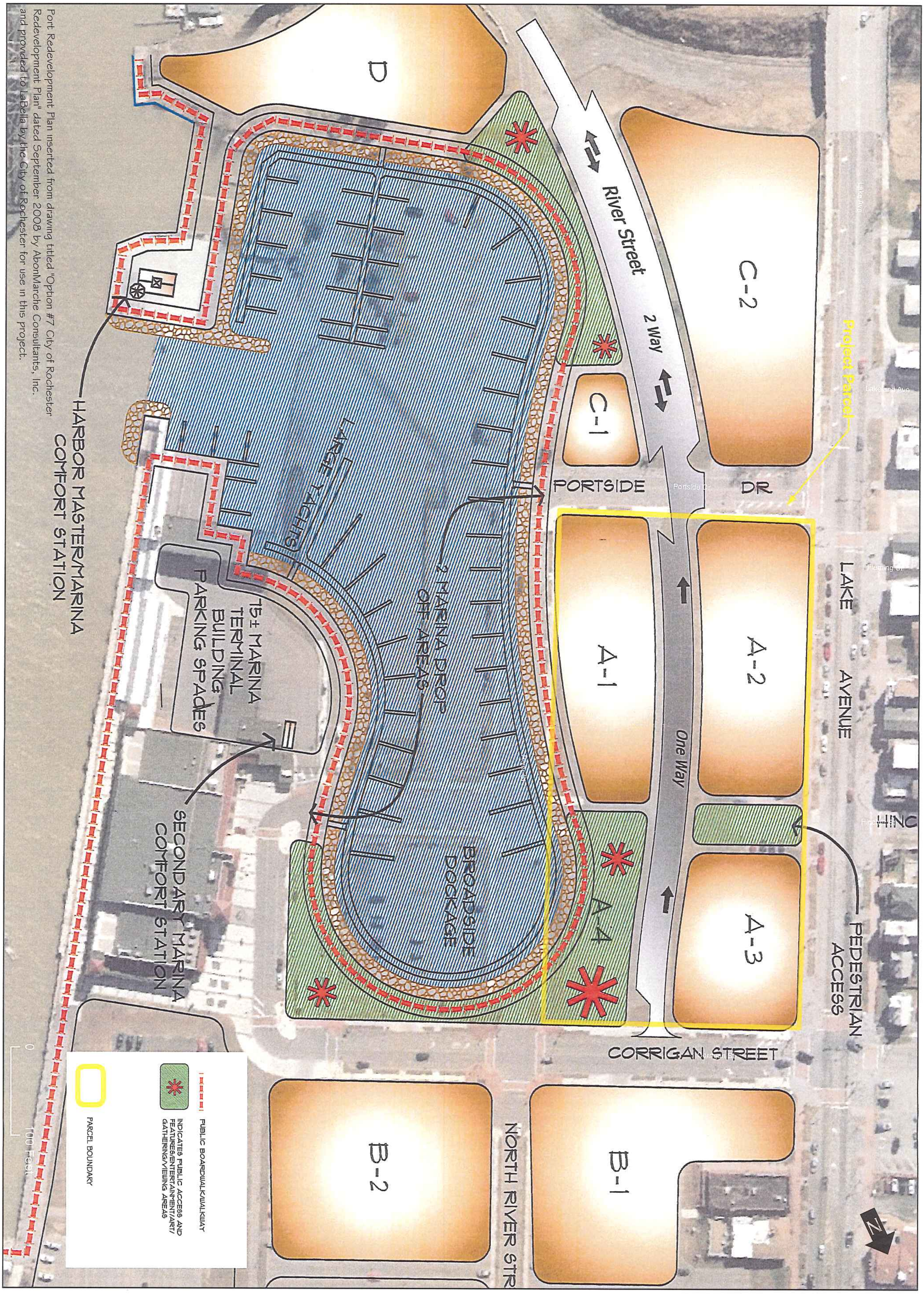

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Predevelopment Investigation
Development Area 1
Port of Rochester

Rochester, New York

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Proposed Redevelopment Plan

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DRAWN BY: RCN
REVIEWED BY: ED
FILE: \\mrpepe1\projects2006\Rochester, City\208453 Port Pre-Dev Inv\Drawings\PDI 3 REDEV PLAN.mxd
USER: moll

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FIGURE 3

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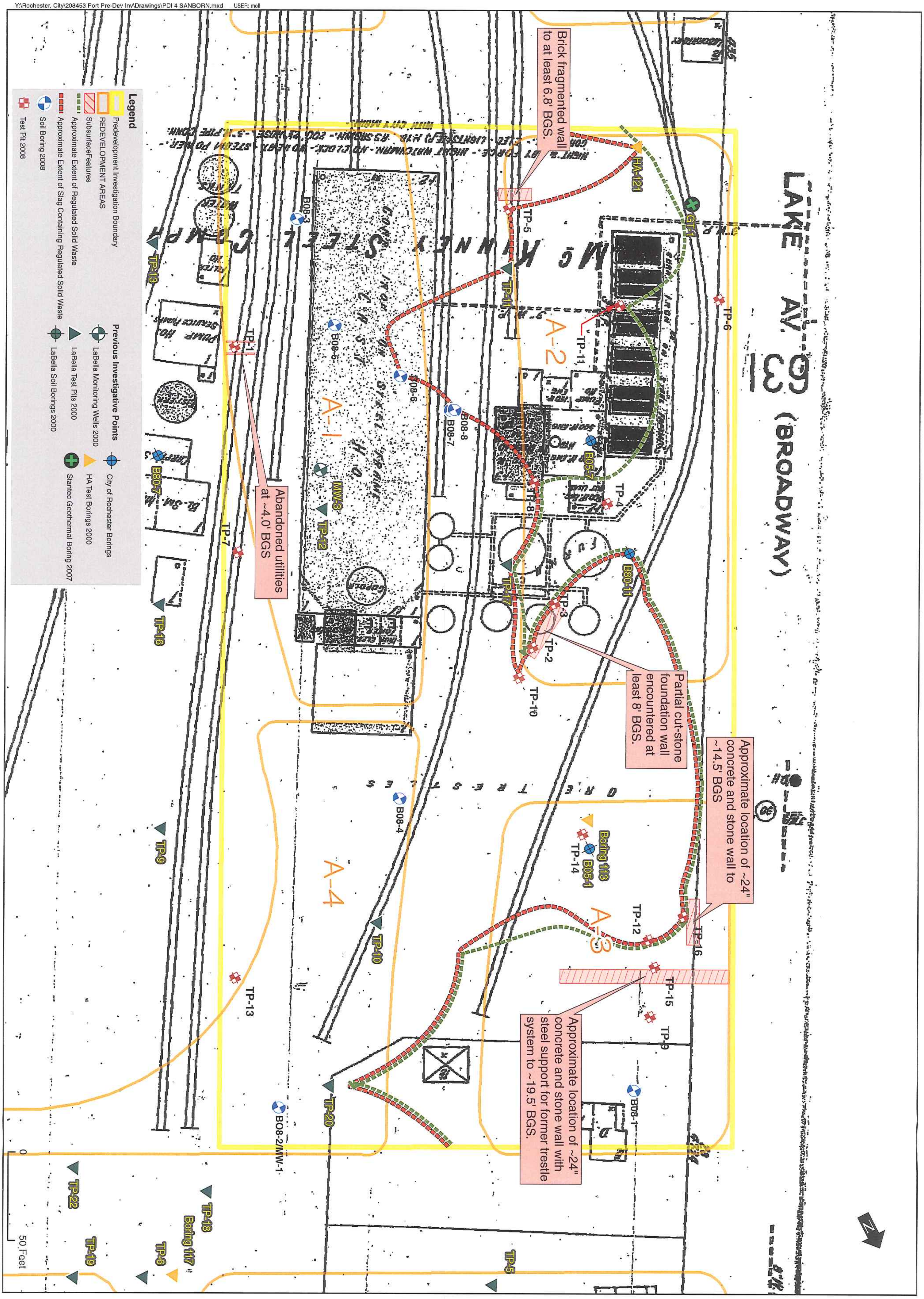

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1924 Sanborn Map with Investigation Points	Predevelopment Investigation Development Area 1 Port of Rochester Rochester, New York	LABELLA Associates, P.C.

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FIGURE 4

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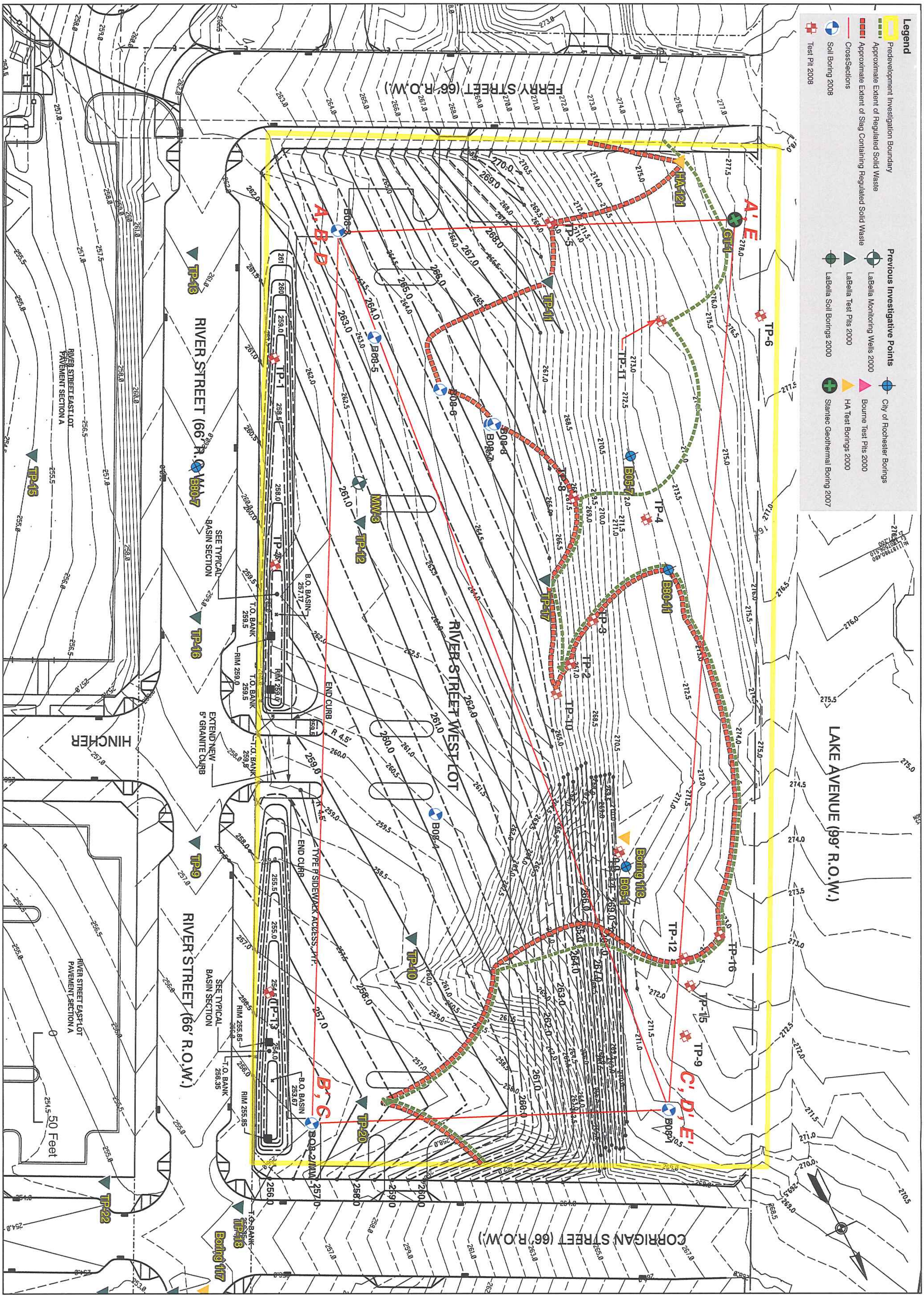

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Predevelopment Investigation Development Area 1 Port of Rochester

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DRAWING TITLE

SITE SURVEY WITH GROUND ELEVATION CONTOURS

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FIGURE 5

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FIGURE 6

DRAWING TITLE

Former Shoreline and Marsh Areas Early 1800s

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REVIEW	DRAWN BY: RCN
DATE: 3/11/2009	REVIEWED BY: ED

FILE: \\mrpepe1\GIS\~NY Countywide\Monroe\~Townwide\Rochester\~Site_Data\PORT ROCHESTER\Port Redevelopment\PDI 5 SHORE&MARSH.mxd

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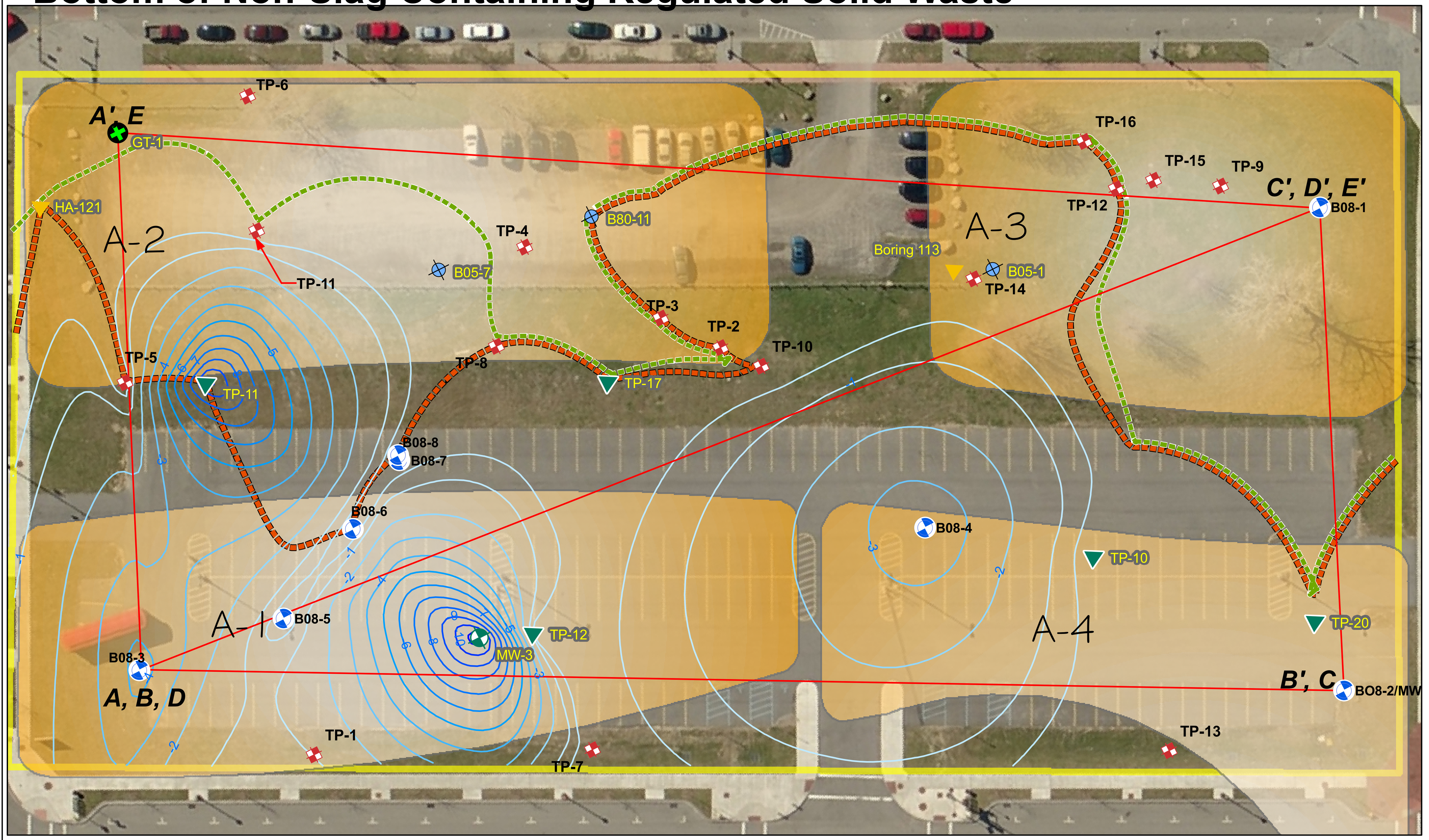
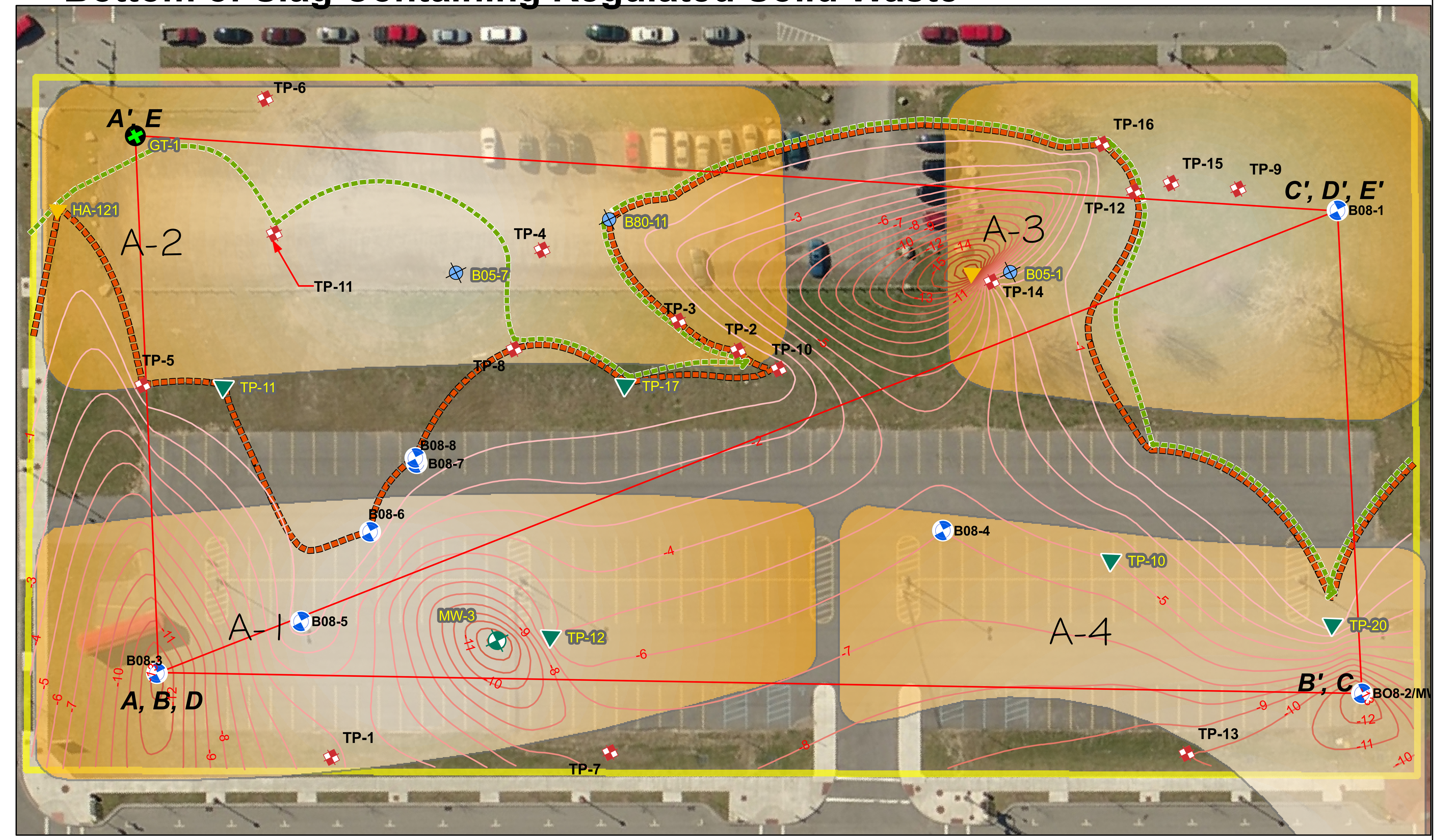
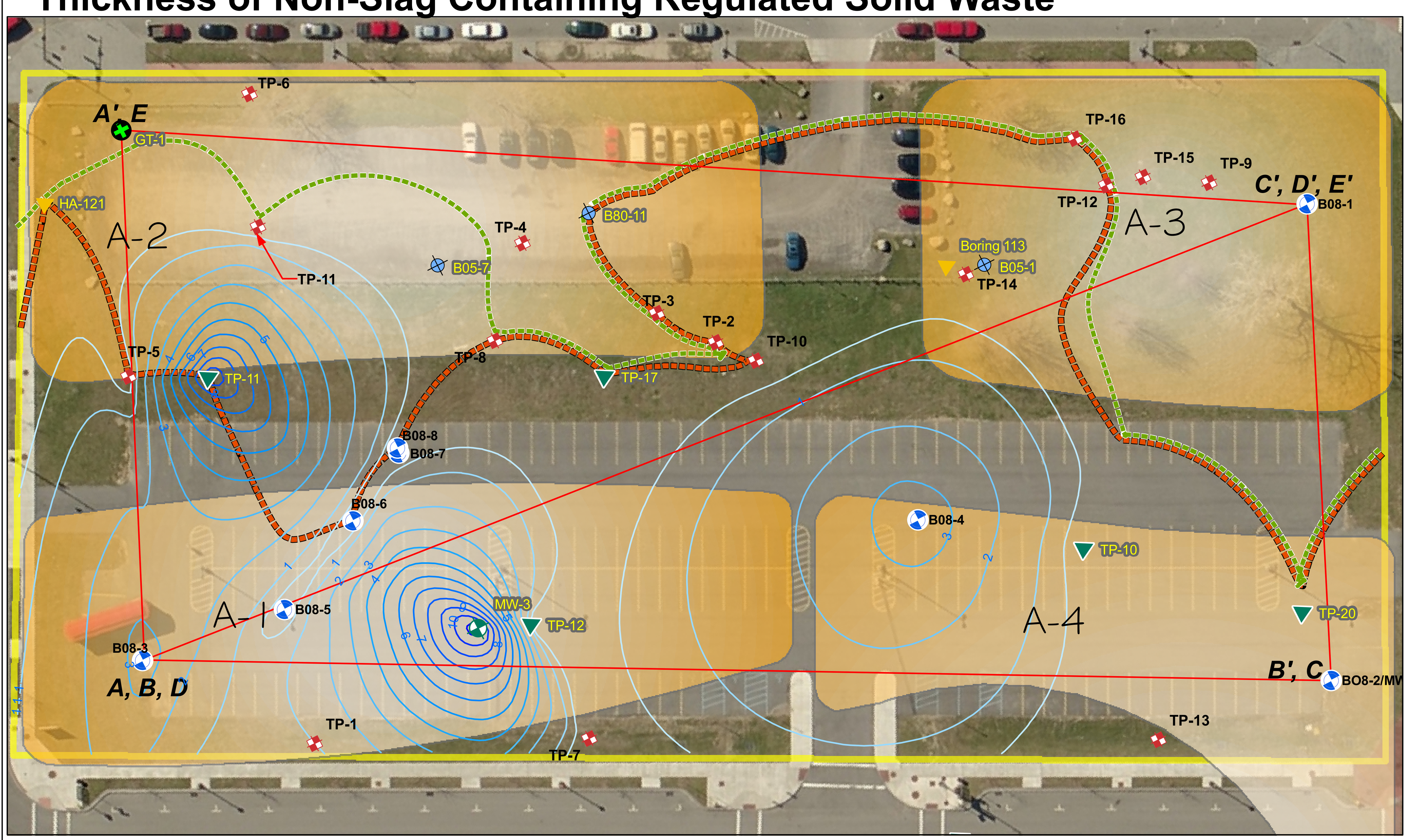
Bottom of Non-Slag Containing Regulated Solid Waste



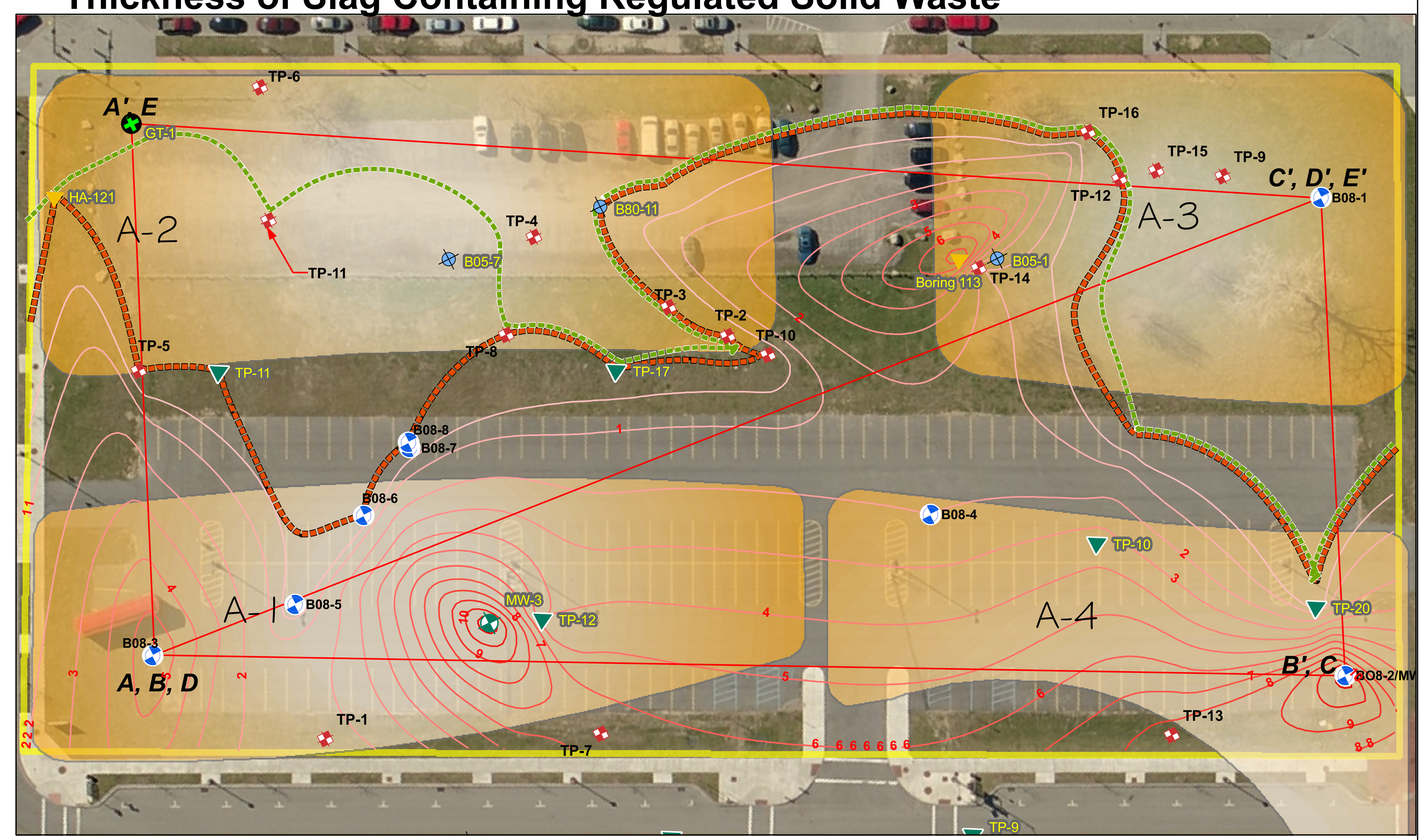
Bottom of Slag Containing Regulated Solid Waste

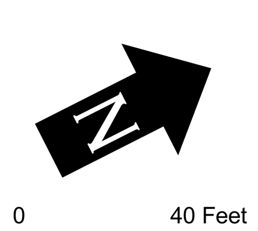


Thickness of Non-Slag Containing Regulated Solid Waste



Thickness of Slag Containing Regulated Solid Waste





Legend

- Soil Boring 2008
- Test Pit 2008

Previous Investigative Points

- LaBella Monitoring Wells 2000
- LaBella Test Pits 2000
- LaBella Soil Borings 2000
- City of Rochester Borings
- Bourne Test Pits 2000
- HA Test Borings 2000
- Stantec Geothermal Boring 2007
- Cross-Sections
- Non-Slag Containing Regulated Solid Waste Contours (ft)
- Slag Containing Regulated Solid WasteContours (ft)
- Approximate Extent of Regulated Solid Waste
- Approximate Extent of Slag Containing Regulated Solid Waste
- REDEVELOPMENT AREAS
- Predevelopment Investigation Boundary

Notes: Contours calculated using the natural neighbor gridding algorithm in Surfer 8.05 software.
Bottom contours reference an arbitrary reference datum of 0-ft at the ground surface

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Predevelopment Investigation Development Area 1 Port of Rochester

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DRAWING TITLE

1-FT Contours of Regulated Soldi Waste (Slag and Non-Slag Containing)

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FILE: \\mrpepe1\projects2006\Rochester, City\208453 Port Pre-Dev Inv \Drawings\PDI 7 SLAG & FILL ansiD.mxd
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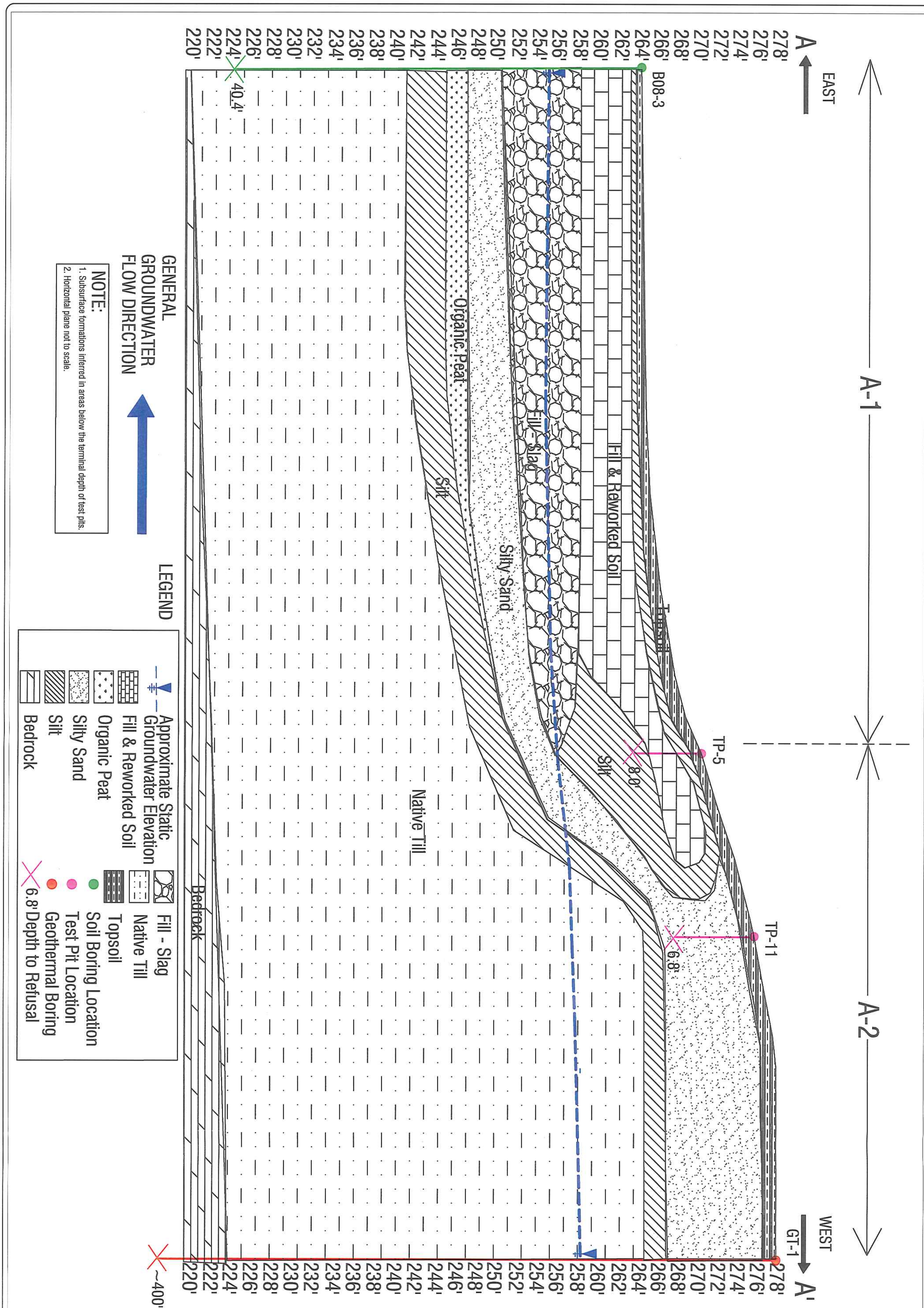
FIGURE 7



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DRAWING TITLE

GEOLOGIC CROSS SECTION
A-A'

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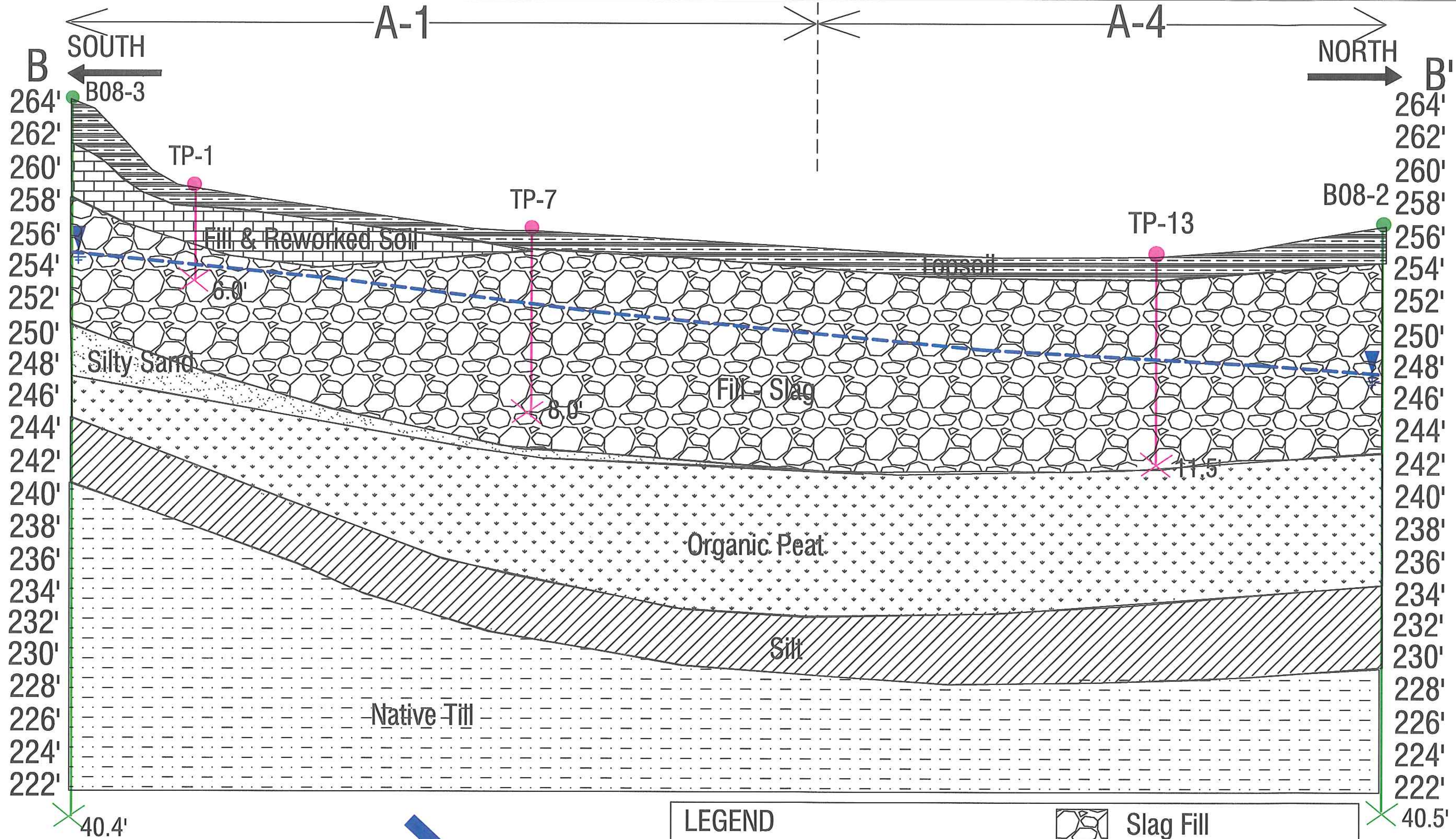
FIGURE 8



GROUNDWATER
FLOW DIRECTION

NOTE:
1. Subsurface formations inferred in areas below the terminal depth of test pits.
2. Horizontal plane not to scale.

LEGEND

- Approximate Static Groundwater Elevation
- Fill & Reworked Soil
- Organic Peat
- Silty Sand
- Silt
- Slag Fill
- Native Till
- Topsoil
- Soil Boring Location
- Test Pit Location
- 6.8' Depth to Refusal

LABELLA
Associates, P.C.
300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
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DRAWING TITLE
GEOLOGIC CROSS SECTION
B-B'

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DATE: DECEMBER 2008	REVIEWED BY:	DEP

PROJECT/DRAWING NUMBER
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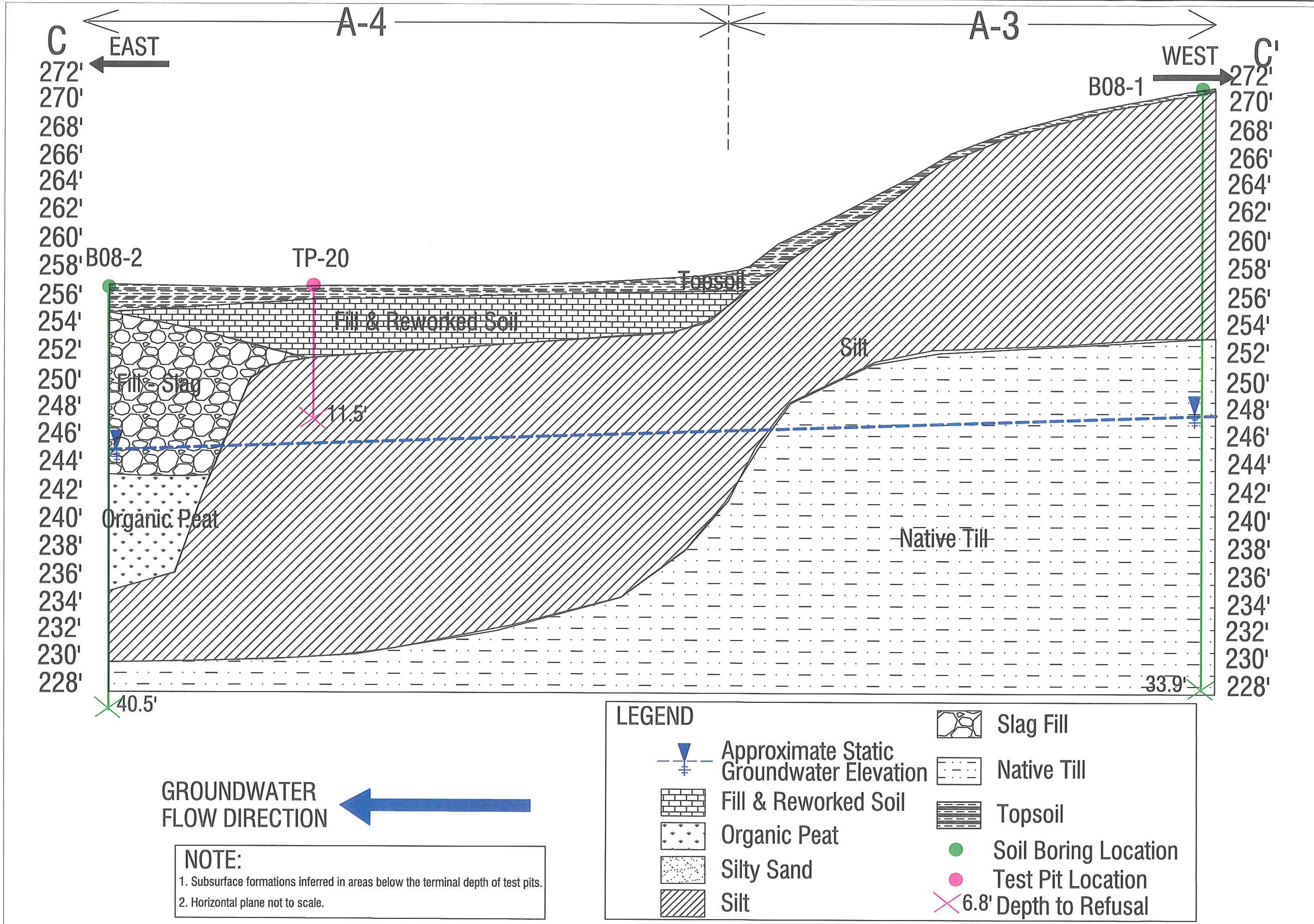
FIGURE 9



NOTE:
1. Subsurface formations inferred in areas below the terminal depth of test pits.
2. Horizontal plane not to scale.

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DRAWING TITLE
GEOLOGIC CROSS SECTION
C-C'

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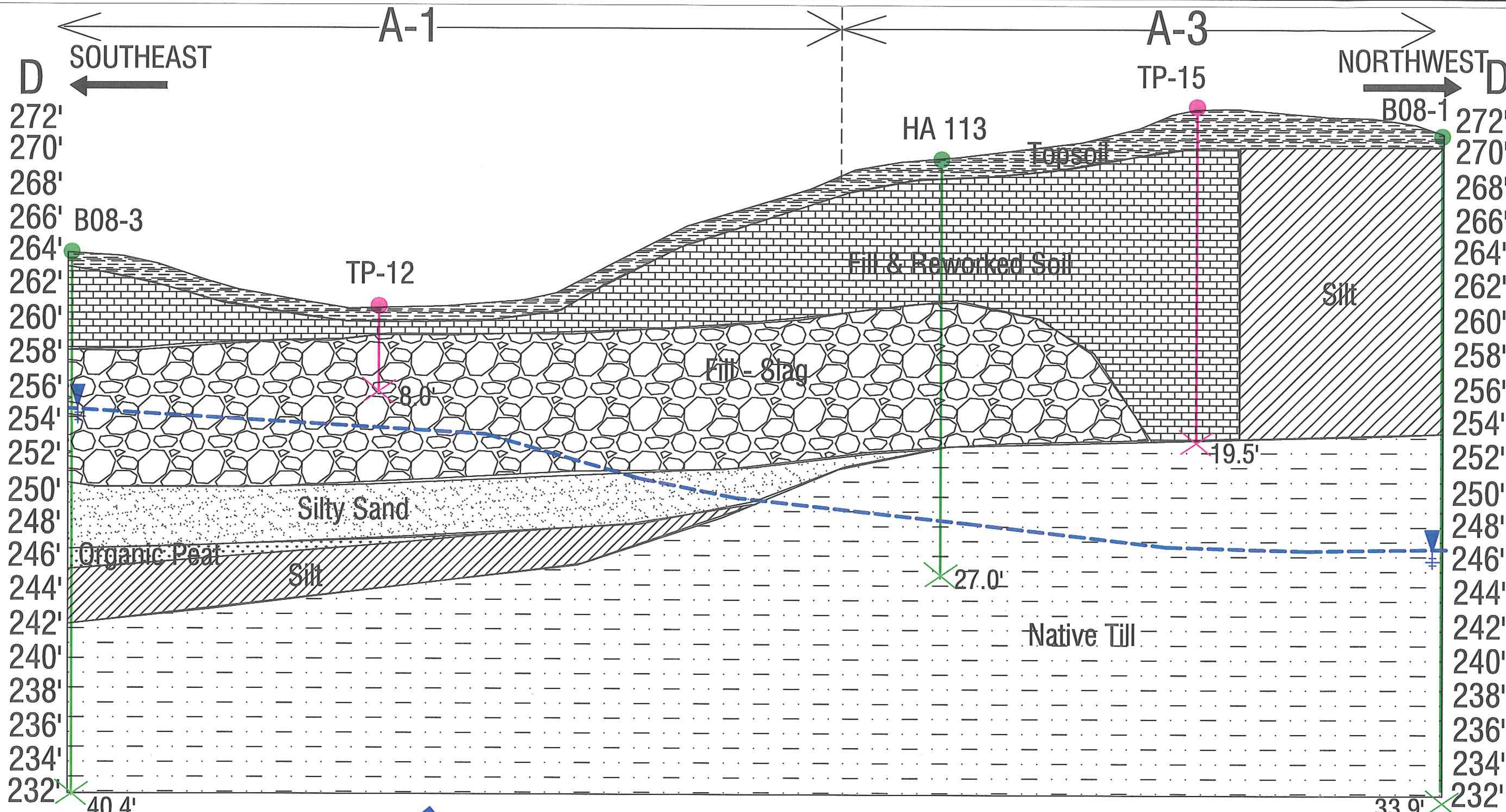
FIGURE 10



GROUNDWATER FLOW DIRECTION

NOTE:

1. Subsurface formations inferred in areas below the terminal depth of test pits.
2. Horizontal plane not to scale.

LEGEND

- Approximate Static Groundwater Elevation
- Fill & Reworked Soil
- Organic Peat
- Silty Sand
- Silt
- Slag Fill
- Native Till
- Topsoil
- Soil Boring Location
- Test Pit Location
- 6.8' Depth to Refusal

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F: (585) 454-3066
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GEOLOGIC CROSS SECTION
D-D'

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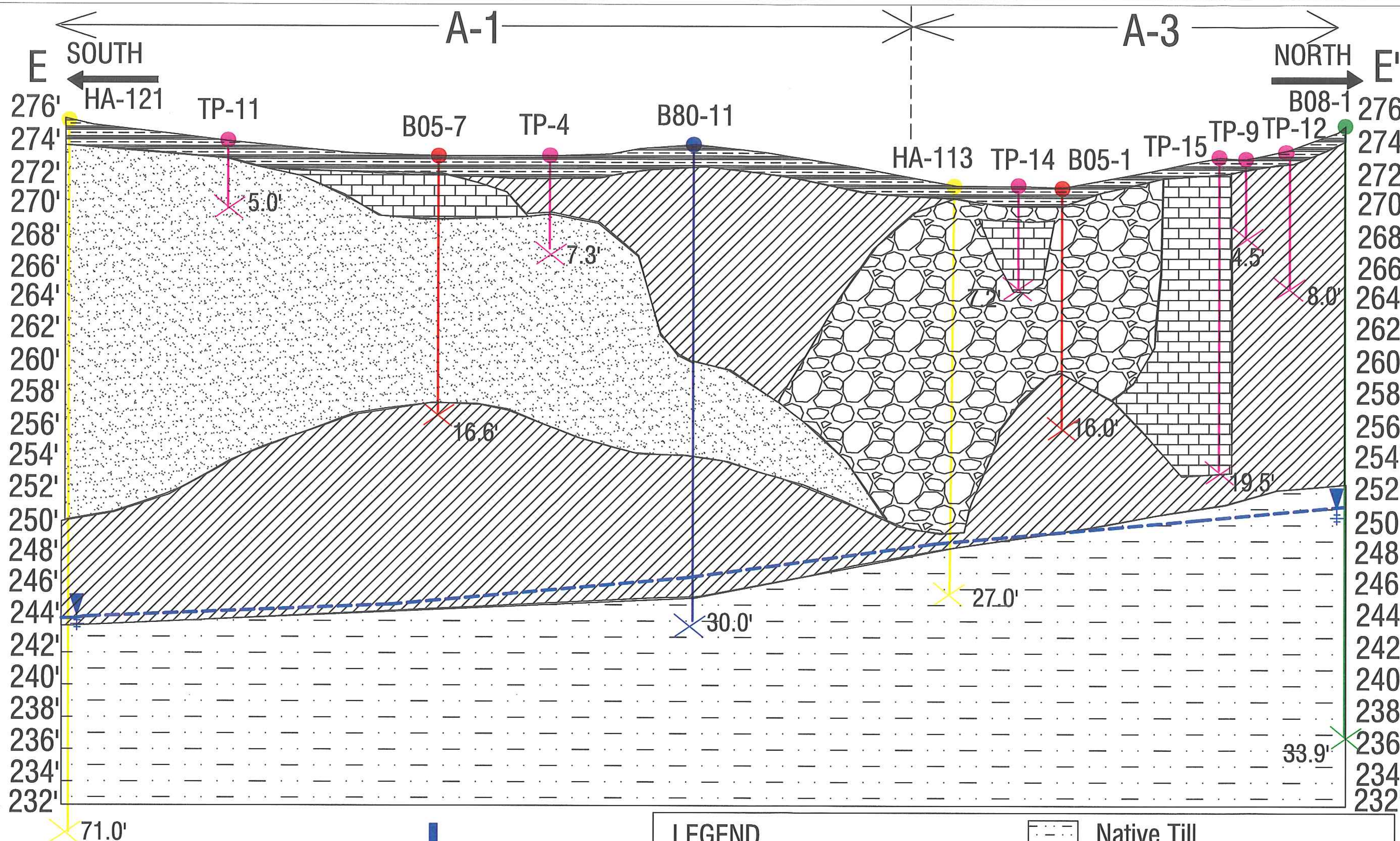
FIGURE 11



GROUNDWATER FLOW DIRECTION

NOTE:

1. Subsurface formations inferred in areas below the terminal depth of test pits.
2. Horizontal plane not to scale.

LEGEND

- Approximate Static Groundwater Elevation
- Fill & Reworked Soil
- Silty Sand
- Silt
- Slag Fill
- Native Till
- Topsoil
- Haley & Aldrich Soil Boring
- City of Rochester Soil Boring
- LaBella 2008 Soil Boring
- LaBella 2008 Test Pit
- LaBella 2005 Soil Boring
- 6.8' Depth to Refusal

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300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
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Rochester, New York

DRAWING TITLE
GEOLOGIC CROSS SECTION
E-E'

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FIGURE 12

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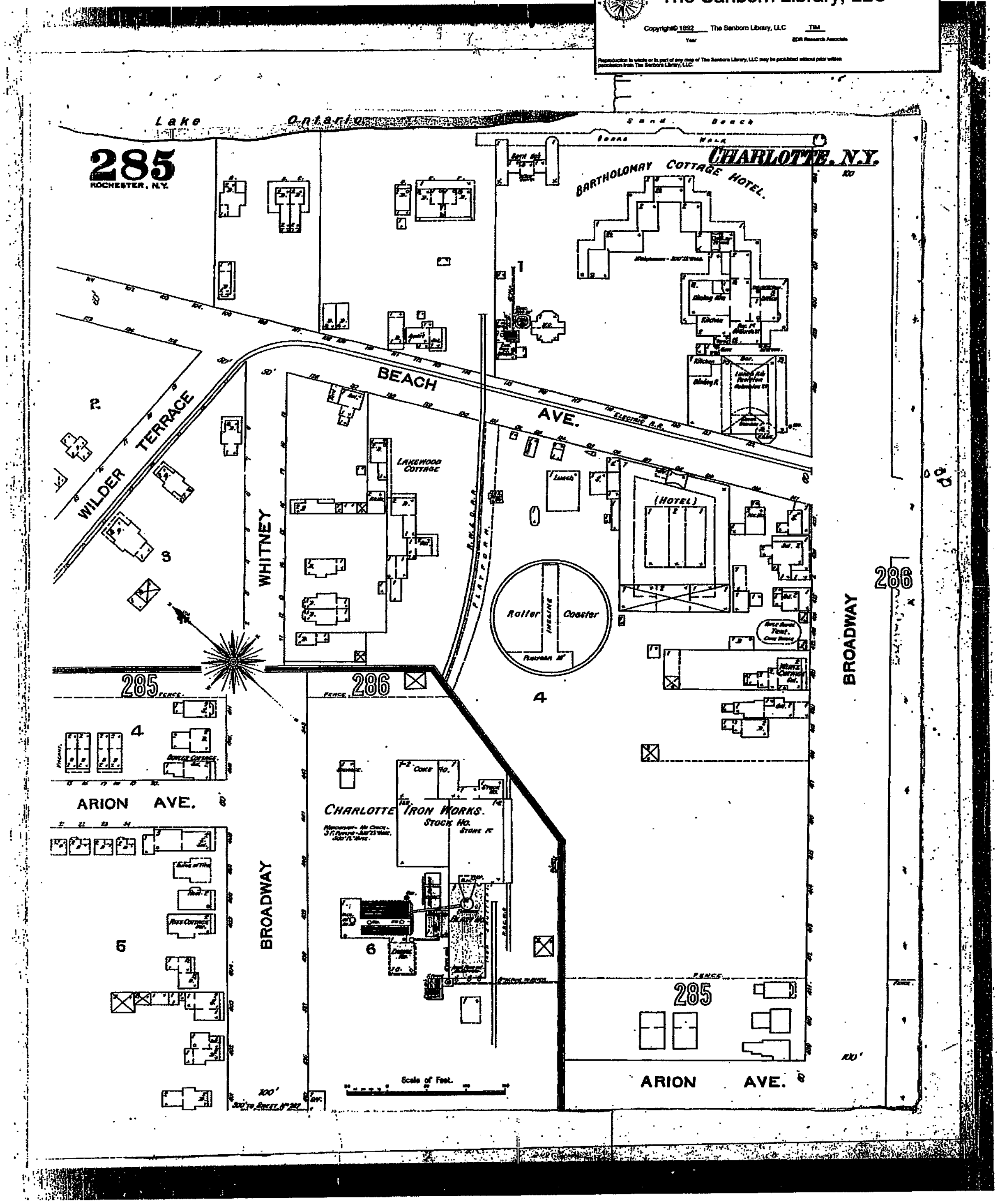
Appendix 1

1892 & 1924 Sanborn Maps



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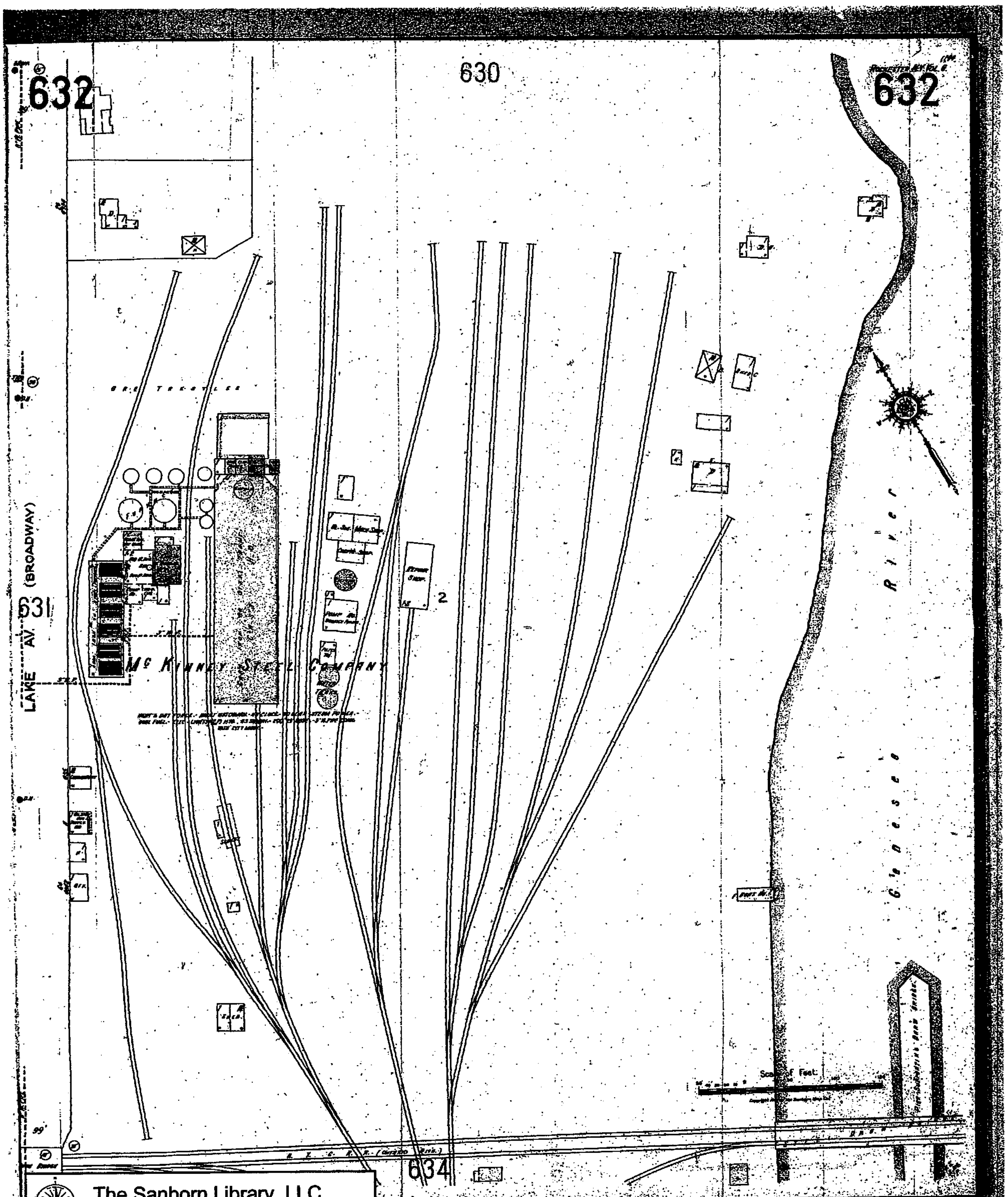
121.0989



1.427289

105.094

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 2

Geothermal Test Bores and Formation Thermal Conductivity Report – Stantec Consulting, Inc., December 2007

Stantec Consulting Services Inc.
2250 Brighton-Henrietta Town Line Road
Rochester NY 14623-2706
Tel: (585) 475-1440 Fax: (585) 424-5951

stantec.com

Stantec

December 4, 2007

Mr. Joseph Biondolillo
City of Rochester
Dept. of Environmental Services
Division of Environmental Quality
City Hall – Room 300B
30 Church Street
Rochester, New York 14614

**RE: Geothermal Test Bores and Formation Thermal Conductivity Report
Port of Rochester
Rochester, New York**

Dear Joe:

Stantec is pleased to present this report for the installation of geothermal test bores and Formation Thermal Conductivity (FTC) testing of the above referenced property.

Geologic and Environmental Review

Due to the proximity of the proposed test bores to the Genesee River channel, there was a potential to encounter variable depths to rock during the completion of the test bores. To assess drilling conditions and the economic benefits of shallow and deep bores, test bore locations were selected to evaluate both shallow overburden and deep bedrock bores. If deep bedrock boreholes for a site are necessary, it is advantageous to have a shallow depth to rock and avoid the installation of excessive overburden casing. The cost of additional casing is apparent as projects move forward and drilling costs are considered for the entire loop field installation. Conversely, if depth to rock is known to be excessive (>100 ft.), it may be advantageous to stop at the top of rock and thereby avoid the installation of overburden casing. This second scenario may lower drilling costs and make other drilling methods possible (i.e. mud rotary).

Depth to rock was evaluated based upon data presented in "Geotechnical Site Characterization, Port of Rochester Harbor Improvement and Harbor Ferry Terminal, Rochester New York" by Haley and Aldrich (2001). Two locations were selected based upon depth to rock in areas that were available based on accessibility, utility clearance and existing environmental conditions. In the area of HA-121, depth to rock was reported to be 61.0 feet below ground surface (ft. bgs.). This area along Lake Avenue was selected for a 400 ft. borehole (GT-1) cased to the top of rock (Figure 1). In the area of HA-101, depth to rock was reported to be 113.0 ft. bgs. This area along the Genesee River was selected for a 100 ft. borehole (GT-2) to be installed without casing (Figure 1).

Borehole and Loop Installation

Prior to initiating the drilling program, the Underground Facilities Protective Organization (UFPO) was contacted to locate publicly owned utilities. Based on previous drilling programs at the Port of Rochester, the City was also able to assist in locating utilities. Boring locations are shown on Figure 1.

On August 6, 2007, GT-2 was completed by Nothnagle Drilling Services, Scottsville, NY. GT-2 was completed with 4-1/4 hollow stem augers to a total depth of 105 ft. bgs. Overburden soils consisted of saturated river alluvium and were stored on site in 55 gallon drums. At completion, a 1-inch diameter HDPE u-bend was installed to a total depth of 105 ft. bgs. The borehole was allowed to collapse from 105 to 10 ft. bgs, with bentonite grout extending from 10 ft. bgs., to the ground surface. A copy of the geothermal test bore log is presented in Appendix A.

Boring GT-1, a 400 ft. geothermal test bore, was completed by Nothnagle Drilling Services, Scottsville, NY on August 13, 2007. A temporary 7-inch steel surface casing was set to the top of rock at a depth of approximately 54 ft. bgs. A nominal 6-inch diameter open rock hole was advanced to a total depth of 400 ft. using air rotary methods. No obvious environmental hazards or natural gas were encountered.

The overburden at GT-1 was primarily silt and sand from the ground surface to approximately 30.0 ft. bgs and from 30 ft to 54.0 ft. bgs. sandy till with some gravel was encountered. Overburden soils were containerized in 55 gallon drums and stored on site. The underlying bedrock was red, dry Queenston Shale from 54 to 400 ft. bgs. The Queenston Formation is a thick sequence of marine shale and mudstone. Trace groundwater was noted throughout the bedrock profile.

On August 14, 2007, the United States Geological Survey (USGS) conducted geophysical testing on the GT-1 open rock bore. Geophysical tests included gamma, electromagnetic induction, mechanical-caliper and acoustic-televiewer log. A copy of the USGS data is provided in Appendix B. From the USGS report, it was noted that from 334 to 368 ft bgs the low gamma counts indicated a change in lithology. This noted change in lithology may correspond to a fossil-rich, shallow marine facies (Georgian Bay) noted in drill core from Orleans County (Bill Goodman, PhD, personal communication).

On August 15, 2007, a 1-1/4 inch diameter HDPE u-bend was installed to a total depth of 400 ft. bgs. The borehole was grouted from 400 ft. bgs to ground surface using tremmie methods and Barotherm thermally enhanced (1.0) grout. A copy of the geothermal test bore log is presented in Appendix A.

Formation Thermal Conductivity Testing

Formation thermal conductivity testing was performed on GT-1 and GT-2 from August 23 to August 27, 2007. However, due to an internal battery failure inside the data acquisition unit, no data were recorded and testing was subsequently rescheduled.

The formation thermal conductivity test for GT-1 and GT-2 was rescheduled by Stantec from September 29 to October 3, 2007. Geothermal Resource Technology Inc. (GRTI) testing and data acquisition units were used for conducting the test. A 25 kW diesel generator from Admar Supply

Co. was used to provide uninterrupted 240-volt single-phase power to the test equipment. Data was submitted via modem to GRTI for analysis using the "line source" method.

Formation Thermal Conductivity Results

GT-1 (400 ft.)

Based on formation thermal conductivity testing, the estimated formation thermal conductivity for GT-1 was 1.63 Btu/hr-ft-^{0}F. The formation thermal diffusivity was 1.19 ft^2/day and the static deep-earth temperature was 53.5 to 54 $^\circ$F. A copy of the geothermal data analysis report is provided in Appendix C.

GT-2 (100 ft.)

Based on formation thermal conductivity testing, the estimated formation thermal conductivity for GT-2 was 0.95 Btu/hr-ft-^{0}F. The formation thermal diffusivity was 0.61 ft^2/day and the static deep-earth temperature was 54 $^\circ$F. A copy of the geothermal data analysis report is provided in Appendix C.

Conclusions and Recommendations

Geologic conditions for geothermal drilling were favorable for deep bedrock drilling. The bedrock encountered was predominantly dry shale, with no natural gas or other obvious environmental hazards encountered. The formation thermal conductivity for GT-1 was 1.63 Btu/hr-ft-^{0}F, which is above average for dry shale.

The top of rock loop installed at GT-2 was completed using hollow stem augers. Given the saturated alluvial conditions, mud rotary methods would also be a viable drilling option. However, the formation thermal conductivity for GT-1 was only 0.95 Btu/hr-ft-^{0}F, which is below average for saturated alluvium. Given the low conductivity of the overburden at GT-2 and the nominal (~100 ft.) depth to rock needed to avoid entering bedrock, it is unlikely that overburden loops at 100 ft. would provide enough capacity to make them viable for a large commercial bore field.

We thank you for the opportunity to work with you on this geothermal project. Should you have any questions, or require further information, please do not hesitate to me at 475-1440, x759.

Sincerely,

Pete Smith

Peter H. Smith
Hydrogeologist
Certified Geothermal Installer

Attachments:	Figure 1	Geothermal Boring Location Map
	Appendix A	Boring Logs
	Appendix B	USGS Geophysical Report
	Appendix C	Formation Thermal Conductivity Reports

This map may contain data from a variety of sources. This map is not intended to replace a survey by a Licensed Surveyor
Stantec does not certify the accuracy of the data. This map is for reference only and should not be used for construction.

Geographic Information Systems

Cartographic Design By: Andrew Less

Printed: 10:50am 11/26/2007 File: U:\190500387\GIS

Stantec
Stantec Consulting
2250 Brighton Henrietta Townline Road
Rochester, NY 14623
Phone 585.475.1440 Fax 585.424.5951
www.stantec.com

Figure 1
Port of Rochester Geothermal Borings

NOTHNAGLE *DRILLING, INC.*

1821 Scottsville-Mumford Road
Scottsville, New York 14546
(585) 538-2328
www.nothnagledrilling.com

Well Completion Report

NYS DEC Permit: N/A

Job Location: Port of Rochester
Corner of Portside
and Lake Ave.
Vacant Lot

Well #: GT-1

Contact: Peter Smith

Phone: 585 413-5635

Fax No.: 424-5951

E-Mail:

Well Coordinates:

Start Well Date: 8/13/07 Finished Well Date: 8/16/07 Driller(s): Steve Gelser, James Smith

Well Diameter: 6" Rig #: T4W New Well: ✓ Deepened: Clean Out:

Left Shop: 7:30 A.M.

	DEPTH	DRILL LOG	PIPE TALLY
Arrived: 8:30			
Departed:			
Well Depth: 400'			
Casing Depth: Drilled with 6.25" HSA to 54' bgs (top of Rock)			
Flow Rate: Had trace of Water at 205' and 230' bgs.			
Static Water Level: After well sat for > 24 Hours Static Level 19' bgs			
Water Zones: 205' 230' trace water.			
Water Quality: N.A.			
Drive Shoe: No			

NOTHNAGLE DRILLING, INC.

1821 Scottsville-Mumford Road
Scottsville, New York 14546
(585) 538-2328
www.nothnagledrilling.com

Well Completion Report

NYS DEC Permit: N. A
Well #: GT-2
Job Location: Port of Rochester. VACANT lot North of Terminal
Contact: Peter Smith
Phone: 585 413 5635
Fax No.: 424 - 5951
E-Mail:

Well Coordinates:
Start Well Date: 8/6/07 Finished Well Date: 8/6/07 Driller(s): Neal Short
Well Diameter: 4.25" HSA Rig #: 75-1 New Well: ✓ Deepened: Clean Out:
Left Shop: 7:00

	DEPTH	DRILL LOG	PIPE TALLY
Arrived: 8:00			
Departed:			
Well Depth:	Drilled with 4.25" HSA to 105' bgs		
Casing Depth: - temporary hollow stem augers.			
Flow Rate:	Cuttings become moist at 12' bgs		
Static Water Level:			
Water Zones:			
Water Quality:			
Drive Shoe:			
Well Cap:			

Grouted: Installed 105' of 1" HDPE SDR11 pipe allowed boring to collapse around piping.

Remarks: topped off loop with 40 Gallons of bentonite slurry.

USGS
science for a changing world

Company USGS Site ID Station name

Other ID Date of log 8/14/2007 Start time of log

County/State Monroe/NY Office/logging unit Troy

Logging operator JAA Observer JES

Description of log-measuring point(LMP) LAND SURFACE

Height of LMP above/below LSD 0.0 Altitude of LMP

Log orientation Mag declination Logging direction

Logging speed Depth error after logging

Logging probe manufacturer

Logging probe model

Logging probe serial number

Description of calibration/standardization

Date of calibration/standardization

Standard(Low) Response(Low)

Standard(High) Response(High)

Borehole depth/diameter/type 400ft/6in/open

Casing depth/diameter/type 54ft/6in/steel auger stem

Borehole fluid type WATER Borehole fluid depth 31.59

Borehole fluid res/cond 67,000 uS/cm Borehole fluid temp

Hydrologic conditions Ambient/pump 0.43

Remarks stickup= 1.0ft, drawdown= 11.96ft.

Geophysical Logs

The geophysical logs collected for the Lake Avenue – Geothermal Test Well in Rochester, New York, include gamma, electromagnetic induction, caliper, borehole image, fluid resistivity, temperature and well deviation. The geophysical logs used in this investigation are described briefly below. The italicized and embolden paragraph summarizes the important features shown with each log for the Lake Avenue borehole. Due to backfilling in the well, the geophysical probes were not able to get past 386 feet.

Gamma log measures the natural gamma radiation of rocks surrounding the borehole. Major natural gamma emitters are uranium, thorium, and daughter products of potassium 40. Units with relatively high natural gamma radiation include clays, shales, bentonites, and other argillaceous units. The gamma tool has a vertical resolution of 1 to 2 ft. Gamma logs collected in the open borehole was used for lithologic identification and stratigraphic correlation.

Lower gamma counts from 334ft to 368ft may indicate a change in the lithology

Mechanical -caliper log records the diameter of the borehole. Changes in borehole diameter are related to drilling and construction procedures and competency of lithologic units, fractures, and solution features. Mechanical-caliper logs were collected with a spring-loaded, three-arm averaging tool. Caliper logs were used in the delineation of fractures, solution features, and lithology; and to determine well and casing depths and diameters.

Acoustic-televiewer log records a 360-degree magnetically oriented acoustic image of the borehole wall. Acoustic-televiewer logs can be collected in clear or murky water. Features with widths greater than 0.01 ft could be identified. Acoustic-televiewer logs were used to characterize bedding and lithology, fractures, solution features, and borehole-wall rugosity.

The planer features (fracture and bedding planes) penetrated by the well are horizontal to sub- horizontal dipping to the south-south/west.

<u>*Fluid-resistivity log*</u> records the electrical resistivity of water in the borehole. Electrical resistivity is inversely related to the concentration of dissolved solids in the water. Slope changes in fluid-resistivity logs may indicate zones of inflow to or outflow from the borehole. Fluid-resistivity logs were used to delineate possible changes in borehole flow.

The ambient (blue) and pumping (red) fluid-resistivity logs indicate 3 water bearing zones, 54ft, 125ft, and 370ft. Specific conductance of this water was measured to be 67.000 uS/cm.

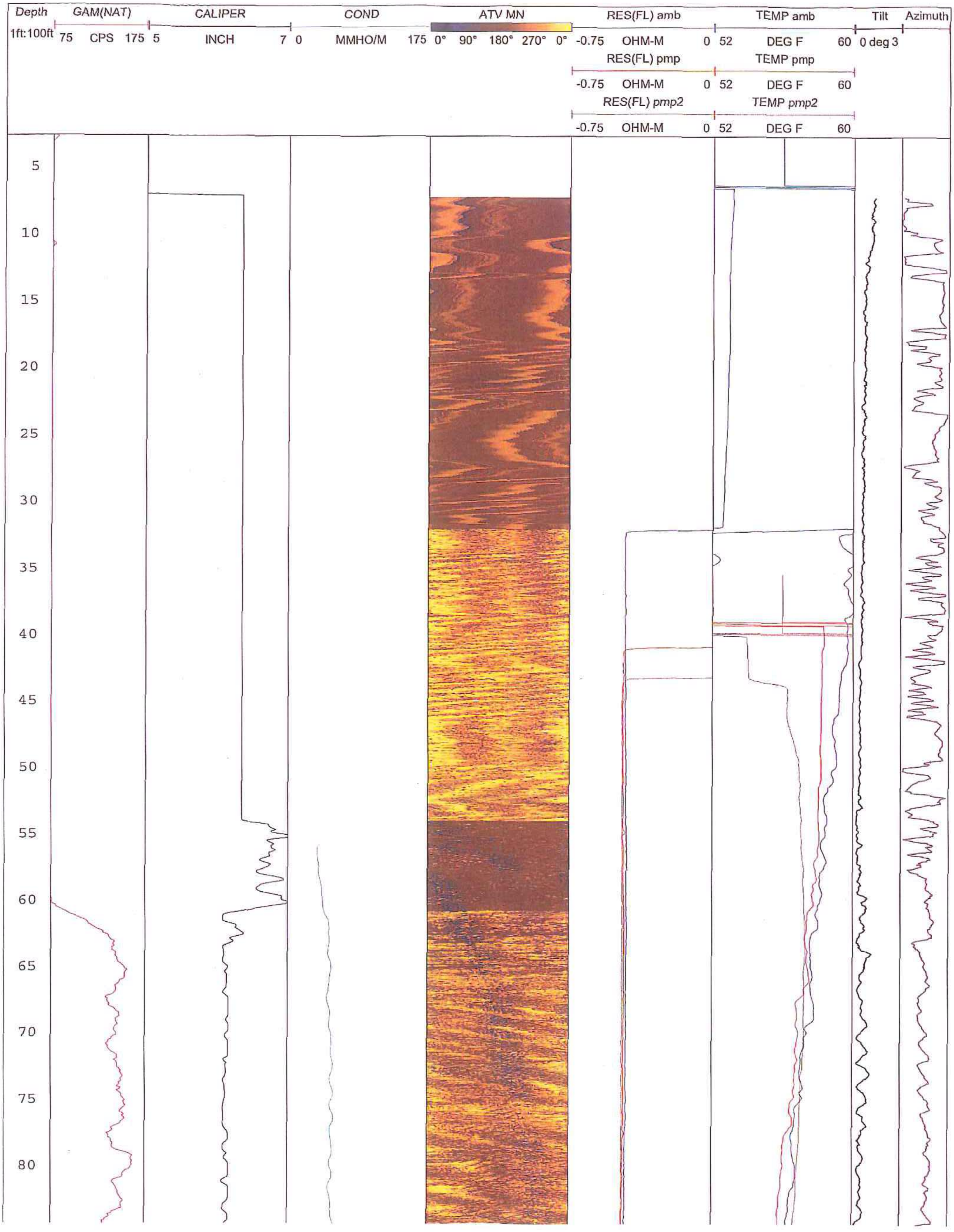
<u>*Temperature log*</u> records the temperature of air and water in the borehole. Temperature gradients smaller than the geothermal gradients may indicate intervals of borehole flow. Temperature logs were used to delineate the water level and possible changes in borehole flow.

<u>*Deviation log*</u> measures the inclination and direction of the well from vertical. Inclination generally is measured within ± 0.5 degree and direction within ± 2 degrees.

The borehole deviates slightly to the southwest. Maximum deviation from vertical is less than 3 degrees.

<u>*Electromagnetic-induction log*</u> measures the electrical conductivity of the rocks and water surrounding the borehole. Electrical conductivity measurements are affected by the argillaceous content and porosity of the rocks and by the dissolved-solids concentration of the water. The electromagnetic-induction tool has a vertical resolution of 2 ft and generally is not affected by the electrical conductivity of the water in boreholes that have a diameter less than 8 in.

A change electrical conductivity from 334ft to 368ft may indicate a change in lithology.



Depth
1ft:100ft
GAM(NAT)
75 CPS 175
CALIPER
5 INCH 7
COND
0 MMHO/M 175
ATV MN
0° 90° 180° 270° 0°
RES(FL) amb
-0.75 OHM-M 0
RES(FL) pmp
-0.75 OHM-M 0
RES(FL) pmp2
-0.75 OHM-M 0
TEMP amb
52 DEG F 60
TEMP pmp
52 DEG F 60
TEMP pmp2
52 DEG F 60
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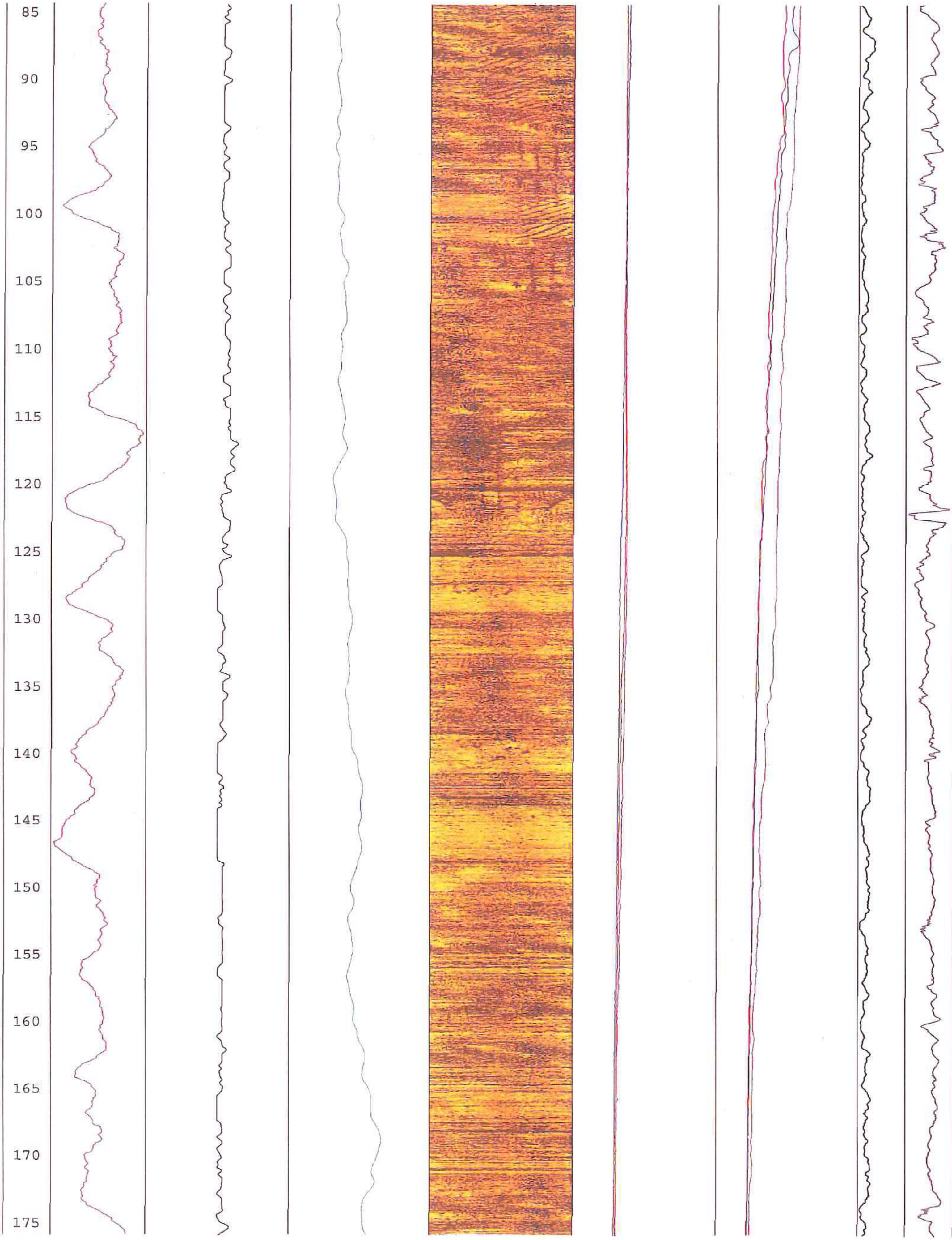
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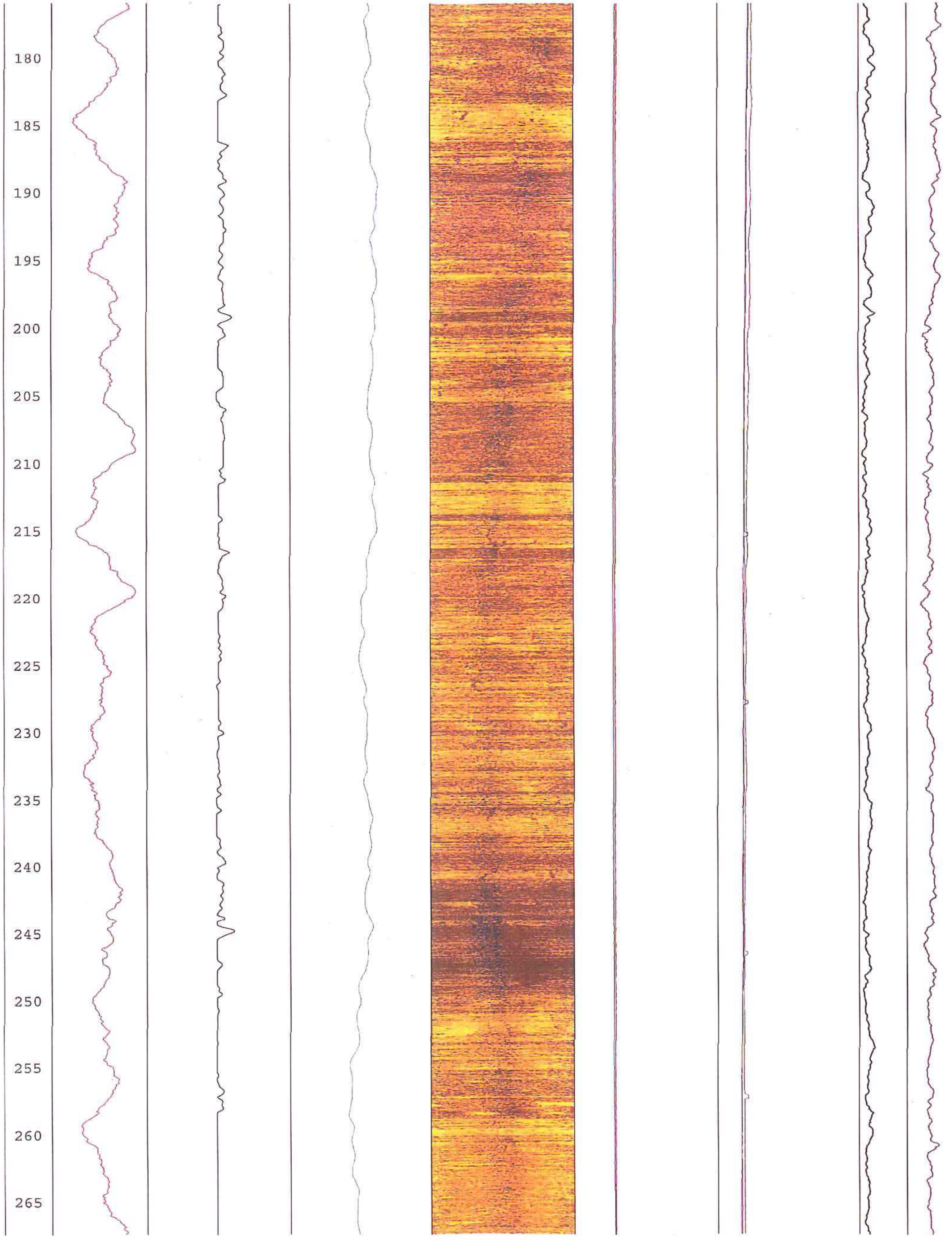
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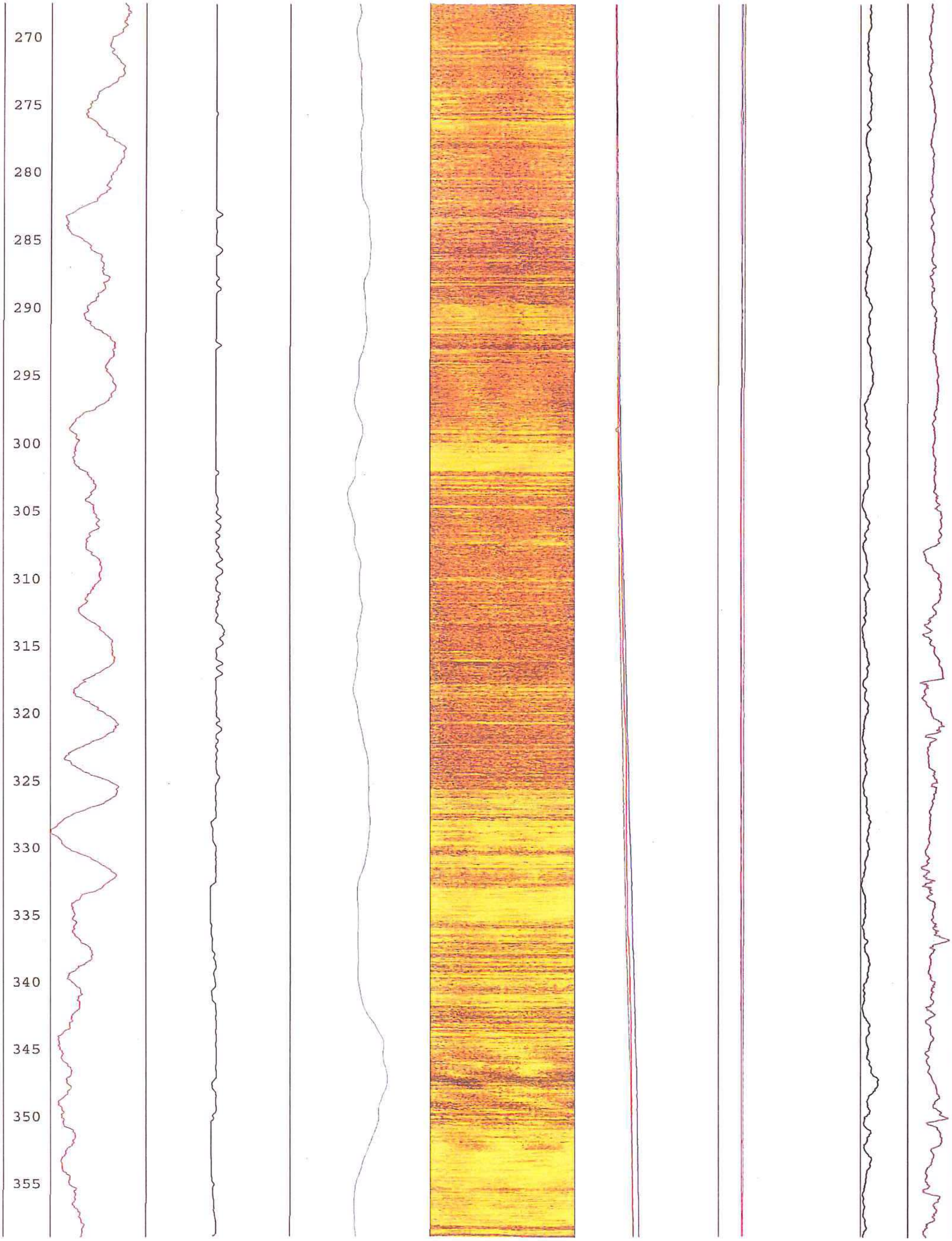
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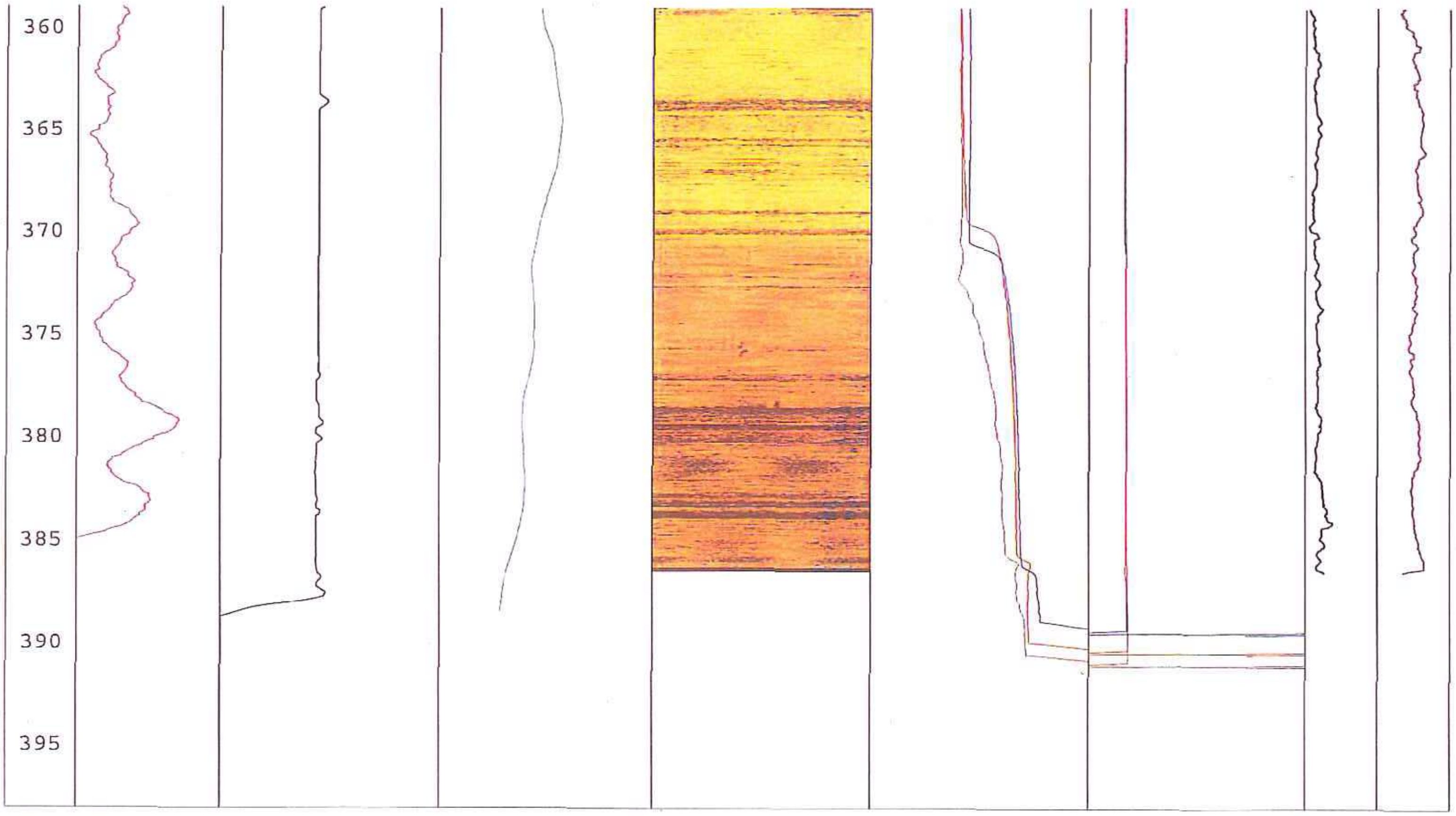
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Geothermal
Resource
Technologies, Inc.

MAIN OFFICE:
P.O. Box 150
BOWIE, TX 76230
(940) 872-2222
Fax: (940) 872-3678

REGIONAL OFFICES:
BROOKINGS, SD
(605) 692-9069
Fax: (605) 692-2604

ASHEVILLE, NC
(828) 225-9166
Fax: (828) 281-4139

WEB SITE:
www.GRTI.com

FORMATION THERMAL CONDUCTIVITY TEST AND DATA ANALYSIS

Analysis for: **Stantec**
2250 Brighton-Henrietta Town Line Road
Rochester, NY 14623-2706
Phone: (585) 413-5635
Fax: (585) 424-5951

Test location: **Port of Rochester, Bore GT-1**
Rochester, NY

Report Date: October 8, 2007

Test Performed by: **Stantec**

Executive Summary

A formation thermal conductivity test was performed on Bore GT-1 at the Port of Rochester site in Rochester, New York. The vertical bore was completed on August 16, 2007 by Nothnagle Drilling, Inc. GRTI's test unit was attached to the vertical bore on the morning of September 29, 2007. Geothermal Resource Technologies, Inc. analyzed the collected data using the "line source" method.

This report provides a general overview of the test and procedures that were used to perform the thermal conductivity test along with a plot of the data in real time and in a form used to calculate the formation thermal conductivity. The following average formation thermal conductivity was found from the data analysis.

⇒ Formation Thermal Conductivity = 1.63 Btu/hr-ft-°F

Due to the necessity of a thermal diffusivity value in the design calculation process, an estimate of the average thermal diffusivity was made for the encountered formation.

⇒ Formation Thermal Diffusivity ≈ 1.19 ft^2/day

An estimate of the undisturbed soil temperature value was determined from the initial temperature data at startup.

⇒ Undisturbed Soil Temperature ≈ 53.5-54°F

A copy of the original collected data is available either in a hard copy or an electronic format upon request.

Test Procedures

The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) recently adopted and published a set of recommended procedures for performing formation thermal conductivity tests for geothermal applications. GRTI is committed to adhering to ASHRAE recommendations. Some of these recommended procedures are listed below:

(1) Required Test Duration – A minimum test duration of 36 hours is recommended, with a preference toward 48 hours.

(2) Power Quality – The standard deviation of the power should be 1.5% of the average power, with maximum power variation of 10% of the average power. The heat flux rate should be 51 Btu/hr (15 W) to 85 Btu/hr (25 W) per foot of borehole depth to best simulate the expected peak loads on the u-bend.

(3) Undisturbed Soil Temperature Measurement – The undisturbed soil temperature should be determined by recording the minimum loop temperature as the water returns from the u-bend at test startup.

(4) Installation Procedures for Test Loops – The bore diameter is to be no larger than 6 inches, with 4.5 inches being the target diameter. To ensure against bridging and voids, the bore annulus is to be uniformly grouted from the bottom to the top using a tremie pipe.

(5) Time Between Loop Installation and Testing – A minimum delay of five days between loop installation and test startup is recommended if the formation is expected to have a low thermal conductivity or if low conductivity grouts (< 0.75 Btu/hr·ft·°F) are used. A minimum delay of three days is recommended for all other conditions.

GRTI's testing procedures deviate slightly from those above with regard to item (5). While item (5) bases the delay between installation and testing on the expected formation conductivity, GRTI bases its delay on the type of drilling used in the installation. When air drilling is required, a five-day delay is recommended to allow the bore to return to its undisturbed temperature. For mud rotary drilling, a minimum waiting period of two days is sufficient.

For a complete list of recommended procedures, refer to the ASHRAE 2007 HVAC Applications handbook, pages 32.12-32.13.

Data Analysis

Geothermal Resource Technologies, Inc. uses the "line source" method of data analysis. The line source equation used is not valid for early test times. Also, the line source method assumes an infinitely thin line source of heat in a continuous medium. If a u-bend grouted in a borehole is used to inject heat into the ground at a constant rate in order to determine the average formation thermal conductivity, the test must be run long enough to allow the finite dimensions of the u-bend pipes and the grout to become insignificant. Experience has shown that the amount of time required to allow early test time error and finite borehole dimension effects to become insignificant is approximately ten hours.

In order to analyze real data from a formation thermal conductivity test, the average temperature of the water entering and exiting the u-bend heat exchanger is plotted versus the natural log of time. Using the Method of Least Squares, the linear equation coefficients are then calculated that produce a line that fits the data. This procedure is normally repeated for various time intervals to ensure that variations in the power or other effects are not producing erroneous results.

Through the analysis process, the collected raw data is converted to spreadsheet format (Microsoft Excel®) for final analysis. A copy of this data can be obtained either in a hard copy or electronic copy format at any time. If desired, please contact Geothermal Resource Technologies, Inc. and provide a ship-to address or e-mail address at one of the following:

Phone: (605) 692-9069
Fax: (605) 692-2604
E-mail: gstreich@brookings.net

Formation Thermal Conductivity Test Report

Date	September 29 – October 1, 2007
Location	Rochester, NY
Undisturbed Soil Temperature	Approx. 53.5-54°F

Borehole Data – As Provided by Stantec

Borehole Diameter	6 inches

Drill Log

Silty sand with clay and gravel	0'-54'
Soft shale with occasional sandstone interbeds	54'-400'

U-bend Size	1 1/4 inch HDPE
U-Bend Length	400 ft
Grout Type	Baroid Barotherm 1.0
Grout Solids	65.1%
Grouted Portion	Entire bore

Test Data

Test Duration	44.2 hrs.
Average Voltage	215.5 V
Average Power	5,036 W
Total Heat Input Rate	17,189 Btu/hr
Calculated Circulator Flow Rate	8.6 gpm

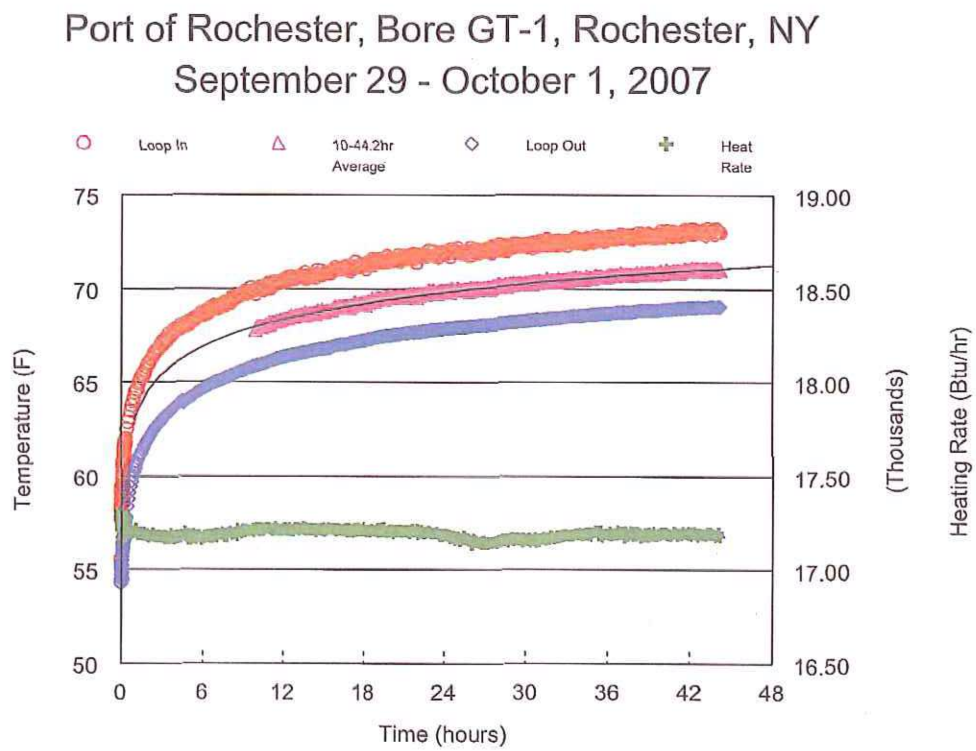

Figure 1: Temperature versus Time Data

Line Source Data Analysis

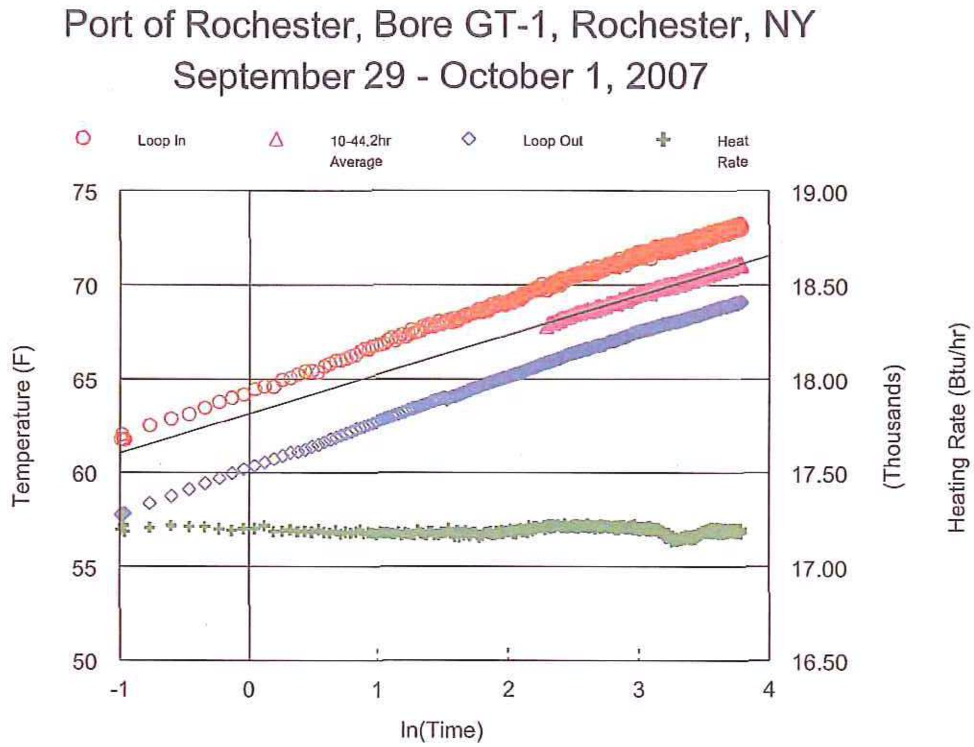

Figure 2: Temperature versus Natural Log of Time

Time Period	Slope: a_1	Average Heat Input (Btu/hr-ft)	(W/ft)	Thermal Conductivity (Btu/hr-ft-°F)
10 – 44.2 hrs	2.10	43.0	12.6	1.63

The temperature versus time data was analyzed using the line source analysis for the time period shown above. An average linear curve fit was applied to the data between 10 and 44.2 hours. The slope of the curve (a_1) was found to be 2.10. The resulting thermal conductivity was found to be 1.63 Btu/hr-ft-°F.

Estimated Thermal Diffusivity

The reported drilling log for this test borehole indicated that the formation consisted primarily of sand, shale and sandstone. A saturated moisture content was assumed for sand in order to calculate a heat capacity value. Heat capacity values for shale and sandstone were calculated from specific heat and density values listed by Kavanaugh and Rafferty (Ground-Source Heat Pumps - Design of Geothermal Systems for Commercial and Institutional Buildings, ASHRAE, 1997). A weighted average of heat capacity values based on the indicated formation was used to develop an average heat capacity for the formation. An estimated diffusivity value was then found using the calculated formation thermal conductivity and the estimated heat capacity. The thermal diffusivity for this formation was estimated to be 1.19 ft^2/day.

Est. Average Heat Capacity (Btu/ft^3 °F)	Thermal Conductivity (Btu/hr-ft-°F)	Est. Thermal Diffusivity (ft^2/day)
32.7	1.63	1.19

Frequently Asked Questions (FAQ's) Regarding FTC Testing

Q: Thermally-enhanced grout is specified for the final loop field design. The test bore was grouted with a low conductivity, 20% solids, bentonite grout. How do I adjust the thermal conductivity value to account for this?

A: While the conductivity of the grout is important for the loop field design, it is not important for determining formation thermal conductivity. We use the "line source" method to analyze data, which assumes an infinitely thin line rejecting heat at a constant rate into an infinite medium. The initial ten hours, which is influenced by the bore dimensions and grout conductivity, is ignored in the analysis. However, once the heat has penetrated into the formation, the temperature rise of the formation approaches steady-state. It is the slope of the temperature rise that is used in the analysis. Hence, no adjustment to the reported formation thermal conductivity is required.

Q: The software I use to design the loop field requires that I input a value for "soil conductivity". Is this the same as formation thermal conductivity?

A: Absolutely. Formation, soil, and ground are all used interchangeably to describe the conditions in which the u-bends will be installed. The use of the word "formation" simply implies that the installation conditions may be soil, rock, or some combination of the two.

Q: I've just received your report. I have a formation conductivity of 1.54 Btu/hr ft °F. How do I translate that into a loop length requirement, in terms of bore depth (in feet) per ton?

A: The formation thermal conductivity test provides values for three key parameters required for the ground loop design. These are the "Undisturbed Soil Temperature, Formation Thermal Conductivity, and Formation Thermal Diffusivity." These parameters, along with many others, are inputs to commercially available loop design software (e.g. GchpCalc, available at GeoKiss.com/software). The software uses all of the inputs to determine the required loop length in bore depth per ton.

Q: Is the "Undisturbed Soil Temperature" value listed in the report the temperature that I enter into my loop design software where it calls for the "Deep-Earth Temperature"?

A: Generally, yes. The "Undisturbed Soil Temperature" is the constant temperature of the formation. We attempt to determine this value by measuring the temperature of the water entering the test unit at the beginning of the test. However, the value we measure and report may be inaccurate if the test is initiated too quickly after the installation of the test bore, or if the testing operator failed to activate the data acquisition unit prior to energizing the heating elements. If you suspect the temperature we are reporting to be too high or too low, we recommend that you investigate further through other sources.

Geothermal
Resource
Technologies, Inc.

MAIN OFFICE:
P.O. Box 150
BOWIE, TX 76230
(940) 872-2222
Fax: (940) 872-3678

REGIONAL OFFICES:
BROOKINGS, SD
(605) 692-9069
Fax: (605) 692-2604

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WEB SITE:
www.GRTI.com

FORMATION THERMAL CONDUCTIVITY TEST AND DATA ANALYSIS

Analysis for: **Stantec**
2250 Brighton-Henrietta Town Line Road
Rochester, NY 14623-2706
Phone: (585) 413-5635
Fax: (585) 424-5951

Test location: **Port of Rochester, Bore GT-2**
Rochester, NY

Report Date: October 8, 2007

Test Performed by: **Stantec**

Executive Summary

A formation thermal conductivity test was performed on Bore GT-2 at the Port of Rochester site in Rochester, New York. The vertical bore was completed on August 6, 2007 by Nothnagle Drilling, Inc. GRTI's test unit was attached to the vertical bore on the afternoon of October 1, 2007. Geothermal Resource Technologies, Inc. analyzed the collected data using the "line source" method.

This report provides a general overview of the test and procedures that were used to perform the thermal conductivity test along with a plot of the data in real time and in a form used to calculate the formation thermal conductivity. The following average formation thermal conductivity was found from the data analysis.

$\Rightarrow$ Formation Thermal Conductivity = 0.95 Btu/hr-ft-°F

Due to the necessity of a thermal diffusivity value in the design calculation process, an estimate of the average thermal diffusivity was made for the encountered formation.

$\Rightarrow$ Formation Thermal Diffusivity $\approx$ 0.61 ft^2/day

An estimate of the undisturbed soil temperature value was determined from the initial temperature data at startup.

$\Rightarrow$ Undisturbed Soil Temperature $\approx$ 54°F

A copy of the original collected data is available either in a hard copy or an electronic format upon request.

Test Procedures

The American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) recently adopted and published a set of recommended procedures for performing formation thermal conductivity tests for geothermal applications. GRTI is committed to adhering to ASHRAE recommendations. Some of these recommended procedures are listed below:

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GRTI's testing procedures deviate slightly from those above with regard to item (5). While item (5) bases the delay between installation and testing on the expected formation conductivity, GRTI bases its delay on the type of drilling used in the installation. When air drilling is required, a five-day delay is recommended to allow the bore to return to its undisturbed temperature. For mud rotary drilling, a minimum waiting period of two days is sufficient.

For a complete list of recommended procedures, refer to the ASHRAE 2007 HVAC Applications handbook, pages 32.12-32.13.

Data Analysis

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In order to analyze real data from a formation thermal conductivity test, the average temperature of the water entering and exiting the u-bend heat exchanger is plotted versus the natural log of time. Using the Method of Least Squares, the linear equation coefficients are then calculated that produce a line that fits the data. This procedure is normally repeated for various time intervals to ensure that variations in the power or other effects are not producing erroneous results.

Through the analysis process, the collected raw data is converted to spreadsheet format (Microsoft Excel®) for final analysis. A copy of this data can be obtained either in a hard copy or electronic copy format at any time. If desired, please contact Geothermal Resource Technologies, Inc. and provide a ship-to address or e-mail address at one of the following:

Phone: (605) 692-9069
Fax: (605) 692-2604
E-mail: gstreich@brookings.net

Formation Thermal Conductivity Test Report

Date .... October 1-3, 2007
Location .... Rochester, NY
Undisturbed Soil Temperature .... Approx. 54°F

Borehole Data – As Provided by Stantec

Borehole Diameter .... 4 1/4 inches

Drill Log	Saturated river alluvium, silt with little clay and sand	0'-105'

U-bend Size .... 1 inch HDPE
U-Bend Length .... 105 ft
Grout Type .... Bore allowed to collapse around loop
Grout Solids .... NA
Note: Bore topped with 40 gallons of bentonite slurry.

Test Data

Test Duration .... 42 hrs.
Average Voltage .... 215.9 V
Average Power .... 2,604 W
Total Heat Input Rate .... 8,887 Btu/hr
Calculated Circulator Flow Rate .... 9.3 gpm

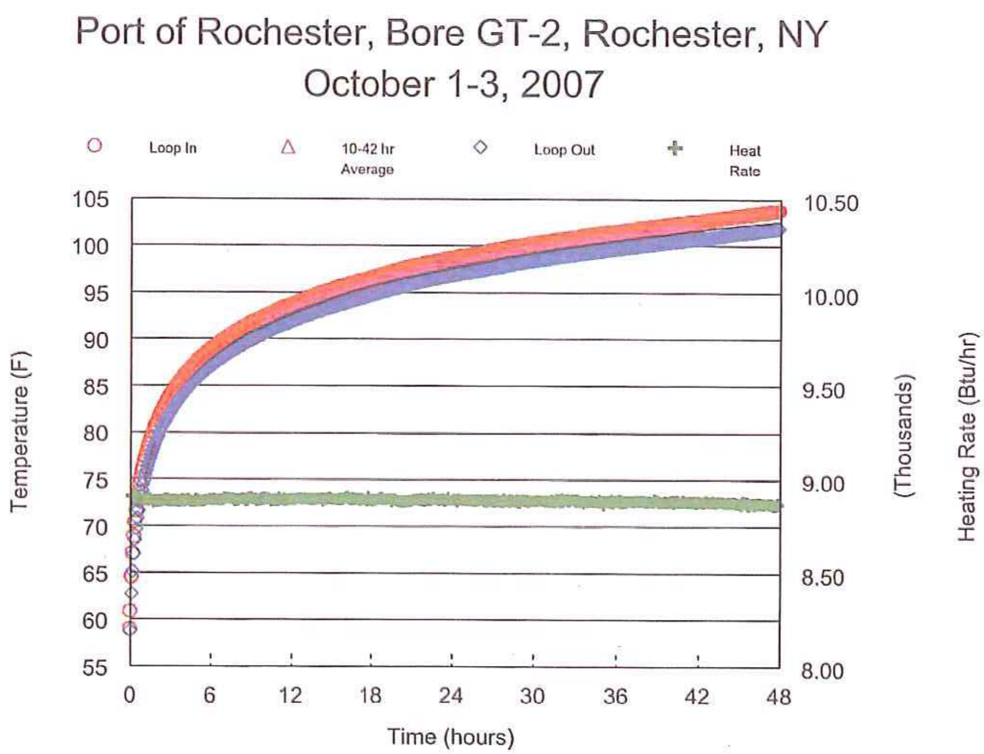

Figure 1: Temperature versus Time Data

Line Source Data Analysis

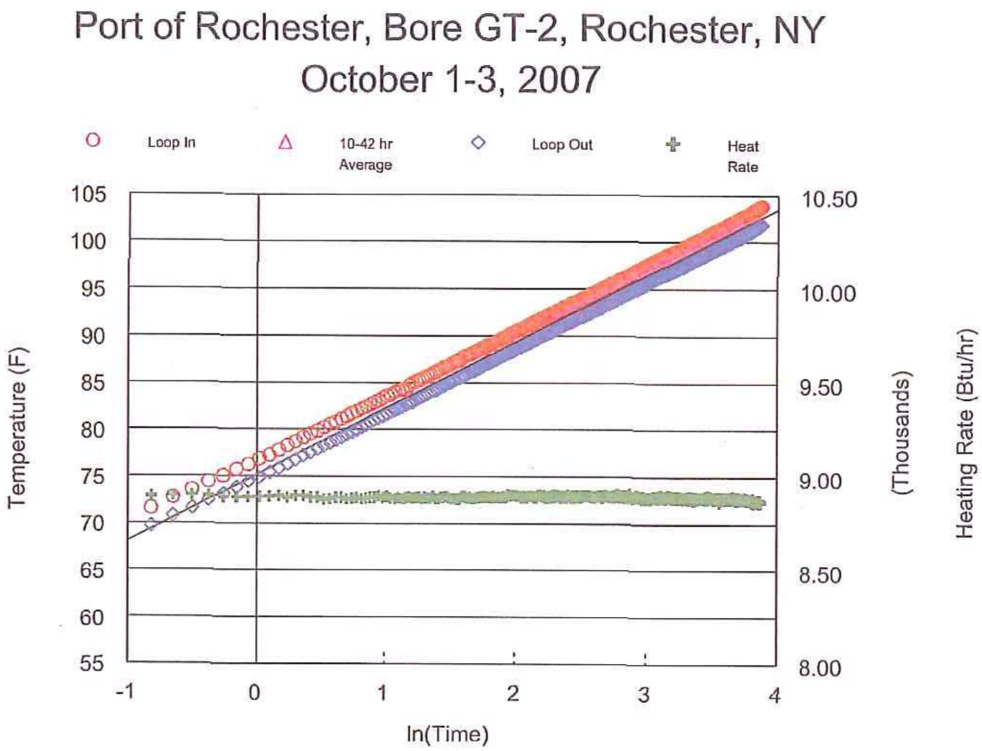

Figure 2: Temperature versus Natural Log of Time

Time Period	Slope: a_1	Average Heat Input (Btu/hr-ft)	(W/ft)	Thermal Conductivity (Btu/hr-ft-°F)
10 – 42 hrs	7.09	84.6	24.8	0.95

The temperature versus time data was analyzed using the line source analysis for the time period shown above. An average linear curve fit was applied to the data between 10 and 42 hours. The slope of the curve (a_1) was found to be 7.09. The resulting thermal conductivity was found to be 0.95 Btu/hr-ft-°F.

Estimated Thermal Diffusivity

The reported drilling log for this test borehole indicated that the formation consisted of saturated river alluvium. An estimated diffusivity value was found using the calculated formation thermal conductivity and the estimated heat capacity. The thermal diffusivity for this formation was estimated to be 0.61 ft^2/day.

Est. Average Heat Capacity (Btu/ft^3 °F)	Thermal Conductivity (Btu/hr-ft-°F)	Est. Thermal Diffusivity (ft^2/day)
37.4	0.95	0.61

Frequently Asked Questions (FAQ's) Regarding FTC Testing

Q: Thermally-enhanced grout is specified for the final loop field design. The test bore was grouted with a low conductivity, 20% solids, bentonite grout. How do I adjust the thermal conductivity value to account for this?

A: While the conductivity of the grout is important for the loop field design, it is not important for determining formation thermal conductivity. We use the "line source" method to analyze data, which assumes an infinitely thin line rejecting heat at a constant rate into an infinite medium. The initial ten hours, which is influenced by the bore dimensions and grout conductivity, is ignored in the analysis. However, once the heat has penetrated into the formation, the temperature rise of the formation approaches steady-state. It is the slope of the temperature rise that is used in the analysis. Hence, no adjustment to the reported formation thermal conductivity is required.

Q: The software I use to design the loop field requires that I input a value for "soil conductivity". Is this the same as formation thermal conductivity?

A: Absolutely. Formation, soil, and ground are all used interchangeably to describe the conditions in which the u-bends will be installed. The use of the word "formation" simply implies that the installation conditions may be soil, rock, or some combination of the two.

Q: I've just received your report. I have a formation conductivity of 1.54 Btu/hr ft °F. How do I translate that into a loop length requirement, in terms of bore depth (in feet) per ton?

A: The formation thermal conductivity test provides values for three key parameters required for the ground loop design. These are the "Undisturbed Soil Temperature, Formation Thermal Conductivity, and Formation Thermal Diffusivity." These parameters, along with many others, are inputs to commercially available loop design software (e.g. GchpCalc, available at GeoKiss.com/software). The software uses all of the inputs to determine the required loop length in bore depth per ton.

Q: Is the "Undisturbed Soil Temperature" value listed in the report the temperature that I enter into my loop design software where it calls for the "Deep-Earth Temperature"?

A: Generally, yes. The "Undisturbed Soil Temperature" is the constant temperature of the formation. We attempt to determine this value by measuring the temperature of the water entering the test unit at the beginning of the test. However, the value we measure and report may be inaccurate if the test is initiated too quickly after the installation of the test bore, or if the testing operator failed to activate the data acquisition unit prior to energizing the heating elements. If you suspect the temperature we are reporting to be too high or too low, we recommend that you investigate further through other sources.

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 3

Geophysical Survey Report

Geomatrix

August 21, 2008

Dennis Porter
LaBella Associates, P.C.
300 State Street, Suite 201
Rochester, NY 14614

Transmitted via email to Porter, Dennis [DPorter@Labellapc.com]

Dear Mr. Porter:

Subject: Geophysical Survey Results, Port of Rochester, Rochester, NY

1.0 INTRODUCTION

This letter report presents the results of the geophysical investigation performed for LaBella Associates, P.C. in support of their environmental investigation of a portion of the Port of Rochester in Rochester, NY (the Site). The approximately 4 acre investigation area is bounded by Lake Avenue to the west and Portside Drive and Corrigan St to the south and north, respectively. The eastern portion of the site is a parking area with the western portion slightly elevated and predominantly grass covered. A second parking lot is located in the southwestern portion of the site.

The geophysical investigation was designed to geophysically characterize the subsurface and focus a follow-up intrusive investigation. The information provided herein is intended to assist LaBella with their assessment of potential environmental concerns at the Site. The objective for the geophysical survey was to identify historical site features (buried foundations, utilities, etc) and if possible define the aerial limits of the fill zones at the site. The whole Port of Rochester was once used as a former Foundry and there are significant slag-wastes buried throughout the site. Geomatrix used time domain geophysical tools (EM61) to characterize the property. Geomatrix Consultants, Inc. (Geomatrix) performed data acquisition on August 7, 2008.

2.0 METHODOLOGY

A reference grid was installed to facilitate data acquisition along lines spaced five feet apart. The grid was marked with orange and white spray paint. Grid coordinate 0N,0E was established at the southwest corner of the survey area. Grid North was taken as the direction parallel to the curb line of Lake Avenue.

The site was geophysically surveyed using the Geonics EM61. The EM61 unit is a high sensitivity, high resolution time domain electromagnetic (TDEM) metal detector that can detect both ferrous and nonferrous metallic objects. It has an approximate investigation depth of 10 feet. The processing console is contained in a backpack worn by the operator which is interfaced to a digital data logger. The transmitter and two receiver coils are located on a two-wheeled cart that is pulled by the operator.

The device's transmitter coil generates a pulsed primary EM field at a rate of 150 pulses per second, inducing eddy currents into the subsurface. The decay rates of these eddy currents are measured by two, 3.28 foot by 1.64 foot (1 meter by ½ meter) rectangular receiver coils. By taking the measurements at a relatively long time frame after termination of the primary pulse, the response is practically independent of the survey area's terrain conductivity. Specifically, the decay rates of the eddy currents are much longer for metals than for normal soils allowing the discrimination of the two.


EM61 in use (photo not from this site)

Data are collected from the EM61's two receiver coils. One of the receiver coils is located coincident to the transmitter coil. The other receiver coil is located 1.31 feet (0.4 meters) above the transmitter coil. Data from the top receiver coil are stored on Channel 1 of a digital data logger. Data from the bottom receiver coil are stored on Channel 2 of the data logger. Channel 1 and Channel 2 data are simultaneously recorded at each station location. The instrument responses are recorded in units of milliVolts (mV). Data were recorded digitally by a data logger at a rate of approximately 2 measurements per foot along the survey lines which were spaced 5 feet apart.

3.0 RESULTS

The following sections present the results from the geophysical investigation.

The EM61 data for the site are shown in Figure 1. The color bar to the right of the map indicates the colors associated with the respective measured values. Areas suspected to be free of buried metals are shown as color shades of blue. All areas exhibiting a response greater than background (0 to 15 mVolts) likely contain buried metals. These areas are depicted in shades of dark blue through yellow on the figure.

Any of the above background responses (EM61) and anomalous conductivity and inphase responses (EM31) may be significant from an environmental perspective. Buried remnants of building foundations usually express themselves in these data sets as rectilinear anomalies. There are no clear anomalies suggestive of building foundations. It is reported that portions of the site contain slag type material. The EM data indeed suggests variability in fill type. Often slag type fill has a high enough metal content to cause small EM61 anomalies. A purple line is drawn on the figure APPROXIMATELY delineating an EM response from what may be slag free (or at least metallic slag free) fill from potentially slag type fill. On one side of this line, the EM response is, with few exceptions, essentially zero. On the other side of the purple line the response exhibits broad regions of low to moderate amplitude response. This may be indicative of a change in fill type however correlation with intrusive test pit or boring data would be necessary to confirm.

4.0 LIMITATIONS

The geophysical methods used during this survey are established, indirect techniques for non-destructive subsurface reconnaissance exploration. As these instruments utilize indirect methods, they are subject to inherent limitations and ambiguities. Metallic surface features (electrical wires, scrap metal, etc.) preclude reliable non-invasive data/results beneath, and in the immediate vicinity of, the surface features. Targets such as buried drums, buried tanks, conduits, etc. are detectable only if they produce recognizable anomalies or patterns against the background geophysical data collected. As with any remote sensing technique, the anomalies identified during a geophysical survey should be further investigated by other techniques such as historical aerial photography, test pit excavation and/or test boring, if warranted.

Please do not hesitate to contact us if you have any questions or require additional information.

Sincerely yours,
AMEC GEOMATRIX, INC.

John Luttinga

John Luttinger
Senior Geophysicist

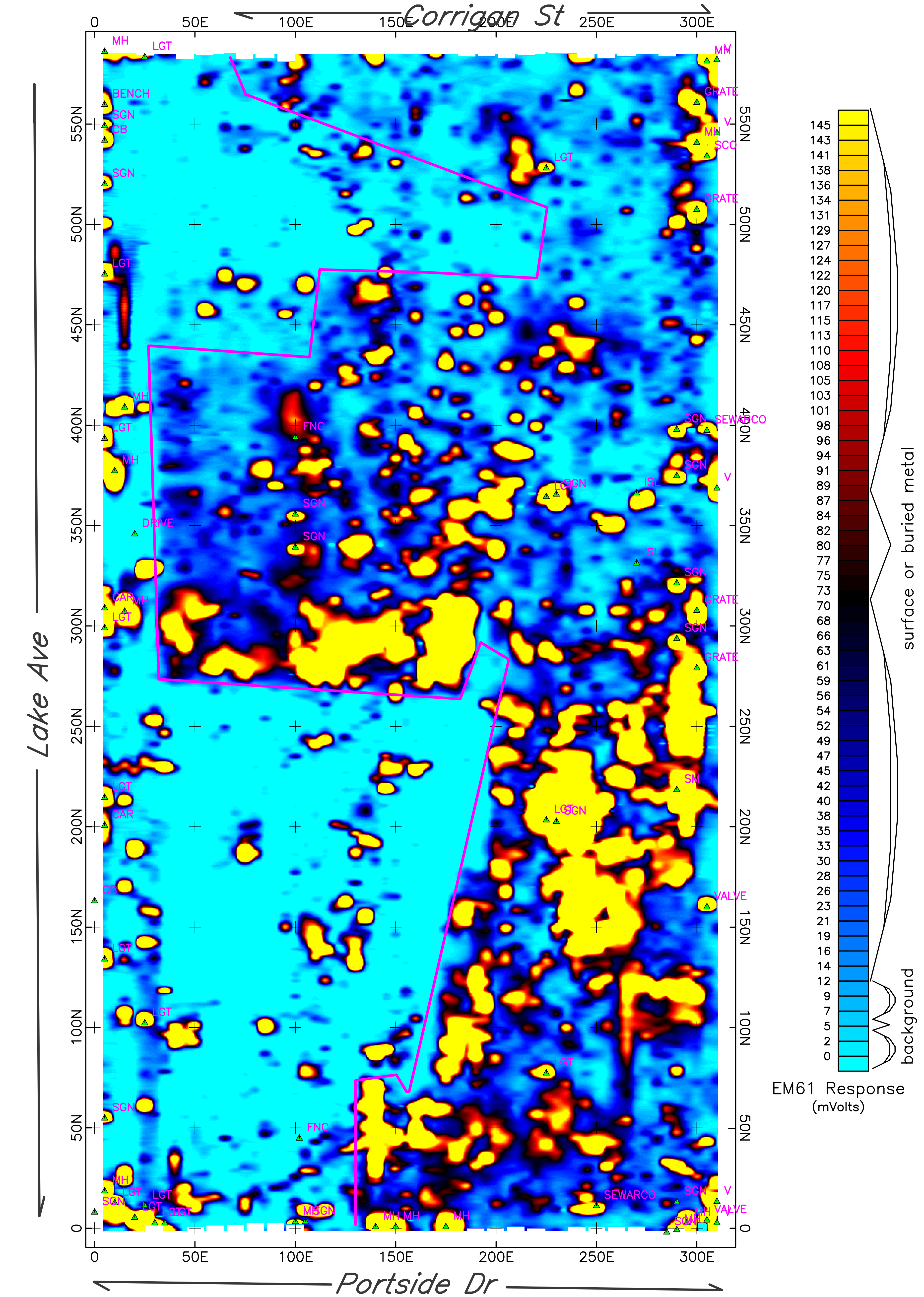

Figure 1

Geophysical Survey Results
Color Contours of EM61 Data
(mVolts)

Port of Rochester
Rochester, NY
Labella

AMEC Geomatrix (716) 565-0624

Appendix 4

Field Logs

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Phase II Environmental Site Assessment Port of Rochester Rochester, New York	BORING B08-1 SHEET 1 of 2 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling	BORING LOCATION		
DRILLER Ben Saragusa	GROUND SURFACE ELEVATION		DATUM
LABELLA REPRESENTATIVI E. Dumrese	START DATE 10/24/2008	END DATE	10/24/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	0	S-1	0.0-2.0	N/A		0.0'	Topsoil	0.0	
1	0						**NATIVE MATERIAL**		
	1					0.4'	Brown, SILT and m SAND, moist, No odor		
2	6								
	9	S-2	2.0-4.0	29		2.0'	As above	0.0	
3	11								
	18								
4	30								
	19	S-3	4.0-6.0	54		4.0'	Light brown, SILT, some f Sand, some iron staining, moist, No odor	0.0	
5	24								
	30								
6	33								
	25	S-4	6.0-8.0	49		6.0'	Light brown, SILT, little m Sand, mosit, No odor	0.0	
7	24								
	25								
8	26								
	11	S-5	8.0-10.0	29		8.0'	Grey to pink, SILT, little m Sand, trace Clay, moist, No odor	0.0	
9	15								
	14								
10	19								
	NA	S-6	10.0-12.0	N/A		10.0'	As above, moist, No odor	0.0	
11	NA								
	NA								
12	NA								
	12	S-7	12.0-14.0	25		12.0'	As Above, moist, No odor	0.0	
13	13								
	12					13.6'	Grey, SILT, trace f Sand and Clay, moist, No odor		
14									
	9	S-8	14.0-16.0	70/9		14.0'	As above, moist, No odor	0.0	
15	20								
	50/3								
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~33.9' BGS
Groundwater Encountered @ ~24.0' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA
Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING **B08-1**
SHEET 2 of 2
JOB # 208453
CHKD. BY: ED

CONTRACTOR:	Target Drilling	BORING LOCATION	
DRILLER	Ben Saragusa	GROUND SURFACE ELEVATION	DATUM
LABELLA REPRESENTATIVE	E. Dumrese	START DATE 10/24/2008	END DATE 10/24/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
17						16.0'	As above	0.0	
18	9 20 50/3	S-9	18.0-20.0	70/9		18.6'	**GLACIAL TILL** Brown, SILT, little f to vf Sand, trace Clay, moist, No odor (Native Till)	0.0	
19									
20						20.0'	As above	0.0	
21									
22						22.0'	As above	0.0	
23									
24						24.0'	Brown, SILT and mc SAND, saturated, No odor	0.0	
25	50/3	S-10	N/A	N/A					
26						26.0'	As above	0.0	
27									
28						28.0'	Grey, SILT, little mf Sand, moist, No odor	0.0	
29	50/3	S-11	N/A	N/A					
30						30.0'	As above		
31		S-12	N/A	N/A				0.0	
32	55/3					32.0'	As above, No odor		

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~33.9' BGS
Groundwater Encountered @ ~24.0' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING B08-2/MW-1
SHEET 1 of 3
JOB # 208453
CHKD. BY: ED

CONTRACTOR:	Target Drilling	BORING LOCATION	
DRILLER	Ben Saragusa	GROUND SURFACE ELEVATION	DATUM
LABELLA REPRESENTATIVE	E. Dumrese	START DATE 10/24/2008	END DATE 10/24/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS
10/24/2008	930	~18.0' BGS		

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	7	S-1	0.0-2.0	39		0.0'	Topsoil - Brown, mf SAND and SILT, moist, No odor	0.0	
1	6						**FILL MATERIAL**		
	33					1.8'	Blue slag, sulfur odor		
2	24								
	15	S-2	2.0-4.0	33		2.0'	Reddish to brown, SILT, some mf Sand, little Gravel, moist, slight sulfur odor some blue slag	0.0	
3	16								
	16								
4	14								
	23	S-3	4.0-6.0	40		4.0'	Blue slag, sulfur odor	0.0	
5	20								
	20								
6	13								
	9	S-4	6.0-8.0	19		6.0'	Brown, SILT, little mf Sand and Gravel, moist, slight sulfur odor	0.0	
7	10					6.2'	Blue slag, slight sulfur odor		
	4								
8	5								
	6	S-5	8.0-10.0	15		8.0'	As above, wet @ ~8.5' BGS	0.0	
9	5								
	10								
10	8								
						10.0'	As above	0.0	
11									
12									
		S-6	13.6-15.0	3		12.0'	As above	0.0	
13	3						**NATIVE MATERIAL**		
	1					13.6'	Dark brown, organic peat layer, strong organic odor	0.2	
14	2								
								0.0	
15						15.0'	As above, saturated @ ~15.0' BGS		
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~40.5 BGS
Groundwater Encountered @ ~8.5' BGS
Monitoring well MW-1 installed to a total depth of ~33.0' BGS with 10' screen from ~ 23' BGS to 13' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Phase II Environmental Site Assessment Port of Rochester Rochester, New York	BORING B08-2/MW-1 SHEET 2 of 3 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 10/24/2008 END DATE 10/24/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS
10/24/2008	930	~18.0' BGS		

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
17						16.0'	As above	0.0	
18-19	2 3 4	S-7	18.6-20.0	7		18.6'	Brown to black, mc SAND and GRAVEL, saturated, organic matter and slight odor	0.2	
20-21						20.0'	As above	0.0	
22-23	2 9 5 7	S-8	23.6-25.0	14		22.0' 23.6'	As above Grey to black, SILT, little Clay and Gravel, saturated, No odor	0.0 0.1	
24-25						24.0'	As above	0.0	
26-27	13 11 22	S-9	27.4-29.0	38		26.0' 27.4'	As above **GLACIAL TILL** Light brown, SILT, little mf Sand, moist to wet, No odor (Native Till)	0.0	
28-29						28.0'	As above	0.0	
30-32						30.0'	As above	0.0	

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~40.5 BGS
Groundwater Encountered @ ~8.5' BGS
Monitoring well MW-1 installed to a total depth of ~33.0' BGS with 10' screen from ~ 23' BGS to 13' BGS

GENERAL NOTES:
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LBA

BORING # B08-2

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING B08-2/MW-1

JOB # 208453
CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION
DATUM
START DATE 10/24/2008
END DATE 10/24/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS
10/24/2008	930	~18.0' BGS		

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
33		S-10	33.6-35.0	80					
	24					33.6'	Light brown, SILT, little f Sand, trace Gravel, moist, No odor	0.0	
34	36					34.0'	As above	0.0	
35									
36						36.0'	As above	0.0	
37									
38						38.0'	As above	0.0	
39									
40						40.0'	As above	0.0	
41						41.0'	*Bottom @ ~40.5' BGS*		
42									
43									
44									
45									
46									
47									
48									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~40.5 BGS
Groundwater Encountered @ ~8.5' BGS
Monitoring well MW-1 installed to a total depth of ~33.0' BGS with 10' screen from ~ 23' BGS to 13' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LBA

BORING # **B08-2**

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

JOB # 208453
CHKD. BY: ED

CONTRACTOR:	Target Drilling	BORING LOCATION	
DRILLER	Ben Saragusa	GROUND SURFACE ELEVATION	DATUM
LABELLA REPRESENTATIVE	E. Dumrese	START DATE 10/23/2008	END DATE 10/23/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
	4	S-1	0.0-2.0	29		0.0'	Dark brown, SILT, some mf Sand and Gravel, moist, no odor	0.0	
1	14						**FILL MATERIAL**		
	15					1.0'	Large pieces of Gravel (i.e., ~1.0" in diameter)	0.0	
2	7					1.3'	Brown, SILT, little f Sand, moist, no odor		
	10	S-2	2.0-4.0	24		2.0'	Dark brown, SILT and c SAND, some fill materials (cinders and coals), moist, no odor	0.0	
3	14								
	10							0.0	
4	12								
	6	S-3	4.0-6.0	10		4.0'	As above, moist, no odor	0.0	
5	5					4.5'	Light brown to grey, SILT, some mf Sand, moist, no odor		
	5							0.0	
6	4								
	6	S-4	6.0-8.0	17		6.0'	Blue slag (sulfur odor), some brown Silt, litle mf Sand, moist, no odor	0.0	
7	8								
	9							0.0	
8	17								
	30	S-5	8.0-10.0	68		8.0'	Dark brown, SILT, little mf Sand, moist, no odor, blue slag (sulfur odor)	0.0	
9	35								
	25							0.0	
10	27								
	20	S-6	10.0-12.0	32		10.0'	Light brown, SILT, trace Clay, blue slag, wet @ ~9.8' BGS, no odor	0.0	
11	23								
	9							0.0	
12									
						12.0'	As above	0.0	
13							**NATIVE MATERIAL**		
						13.6	Light brown, SAND, some mf Sand, moist, no odor	0.0	
14									
						14.0'	As above	0.0	
15									
								0.0	
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~40.4 BGS
Groundwater Encountered @ ~9.0' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Phase II Environmental Site Assessment Port of Rochester Rochester, New York	BORING B08-3 SHEET 2 of 3 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling	BORING LOCATION		
DRILLER Ben Saragusa	GROUND SURFACE ELEVATION	DATUM	
LABELLA REPRESENTATIVE E. Dumrese	START DATE 10/23/2008	END DATE	10/23/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
						16.0'	As above	0.0	
17								0.0	
18	2					18.0'	Black, organic peat layer, some organic odors	0.0	
19	3 5	S-7	18.0-20.0'	8		19.0'	Grey, SILT, trace f Sand, moist, no odor	0.0	
20						20.0'	As above	0.0	
21								0.0	
22						22.0'	As above	0.0	
23	19	S-8	23.0-25.0'	77		23.6'	Light brown, SILT and m SAND, wet, no odor	0.0	
	27						**GLACIAL TILL**		
24						24.0'	As above	0.0	
25								0.0	
26						26.0'	As above	0.0	
27								0.0	
28	26					28.6'	Light brown, SILT and m SAND, wet, no odor	0.0	
29	52	S-9	28.0-30.0'	78					
30						30.0'	As above	0.0	
31								0.0	
32									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~40.4 BGS
Groundwater Encountered @ ~9.0' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Phase II Environmental Site Assessment Port of Rochester Rochester, New York	BORING B08-3 SHEET 3 of 3 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling	BORING LOCATION		
DRILLER Ben Saragusa	GROUND SURFACE ELEVATION		DATUM
LABELLA REPRESENTATIVE E. Dumrese	START DATE 10/23/2008	END DATE	10/23/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
								0.0	
33	46 50/4	S-10	33.6-35.0'	80		33.6'	Grey, mc SAND, saturated, no odor	0.0	
34						34.0'	As above	0.0	
35									
36						36.0'	As above	0.0	
37									
38						38.0'	As above	0.0	
39									
40						40.0'	As above	0.0	
41							*Bottom @ ~40.' BGS*		
42									
43									
44									
45									
46									
47									
48									

LEGEND	NOTES:
S - SPLIT SPOON SOIL SAMPLE U - UNDISTURBED SOIL SAMPLE C - ROCK CORE SAMPLE	Bottom of Boring = ~40.4 BGS Groundwater Encountered @ ~9.0' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

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300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING B08-4
SHEET 1 of 2
JOB # 208453
CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION
DATUM
START DATE 10/24/2008
END DATE 10/24/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
1				N/A		0.0' 0.2' 1.0'	Asphalt **FILL MATERIAL** Crushed stone Topsoil	0.0 0.0	
2–3						2.0'	Spoon bouncing-augering through obstruction	0.0 0.0	
4–5	2 2 3 4	S-2	4.0-6.0'	4		4.0'	Light brown, SILT, little vf Sand, trace Clay, moist, some blue slag, slight sulfur **NATIVE MATERIAL**	0.0 0.0	
6–7	2 2 2 2	S-3	6.0-8.0'	6		6.0'	Light brown, SILT, trace vf Sand, moist, no odor	0.0 0.0	
8–9	2 2 3 4	S-4	8.0-10.0'	6		8.0'	Light brown, SILT, little Clay, trace vf Sand (some iron staining)	0.0 0.0	
10–11	14 19 20	S-5	10.0-12.0'	45		10.0'	As above	0.0 0.0	
12–13						13.5'	Brown, SILT, and m SAND, some assorted Gravel, wet, no odor	0.0 0.0	
14–16						14.0'	As above	0.0 0.0	

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~26.0 BGS
Groundwater Encountered @ ~12.5' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Phase II Environmental Site Assessment Port of Rochester Rochester, New York	BORING B08-4 SHEET 2 of 2 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 10/23/2008 END DATE 10/23/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
						16.0'	As above	0.0	
17								0.0	
18	28							0.0	
19	36	S-6	18.0-20.0'	84		18.5'	Grey, SILT, some mc Sand and assorted Gravel, wet, no odor	0.0	
20						20.0'	As above	0.0	
21								0.0	
22						22.0'	As above	0.0	
23								0.0	
24						24.0'	As above **GLACIAL TILL**	0.0	
25		S-7	25.0-26.0'	N/A		25.0'	Light brown, SILT, little mf Sand, wet, no odor	0.0	
26							*Bottom @ 26.0' BGS*		
27									
28									
29									
30									
31									
32									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~26.0 BGS
Groundwater Encountered @ ~12.5' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING B08-5
SHEET 1 of 1
JOB # 208453
CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION
DATUM
START DATE 10/27/2008
END DATE 10/27/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE: BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
						0.0'	Asphalt **FILL MATERIAL**	0.0	
1		S-1	0.0-2.0'	N/A		0.4'	Crushed stone, assorted fill materials (i.e., concrete, cinders, coarse gravel)	0.0	
2								0.0	
3		S-2	2.0-4.0'	N/A		3.0'	Light brown, SILT, little f to vf Sand, moist, no odor	0.0	
4	10					4.0'	As above, no odor	0.0	
5	10, 13	S-3	4.0-6.0'	22					
6	15							0.0	
	4					6.0'	Grey, mc SAND, moist, no odor	0.0	
7	5, 11	S-4	6.0-8.0'	16				0.0	
8	6						**NATIVE MATERIAL**		
	3					8.0'	Light brown, SILT, little Clay, trace vf Sand, moist, no odor	0.0	
9	4, 4	S-5	8.0-10.0'	8				0.0	
10	5								
						10.0'	As above, moist, no odor	0.0	
11				N/A				0.0	
12	6					12.0'	As above, moist, no odor	0.0	
13	7, 9	S-7	12.0-14.0'	16		13.5'	Light brown, SILT, some Clay, moist, no odor	0.0	
14								0.0	
15				N/A					
16							*Bottom @ 15.0' BGS*		

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~15.0 BGS
Groundwater Encountered @ ~12.5' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LBA

BORING # B08-5

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING B08-6
SHEET 1 of 1
JOB # 208453
CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 10/27/2008 END DATE 10/27/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
						0.0'	Asphalt	0.0	
1				N/A		0.4'	Crushed gravel		
							FILL MATERIAL	0.0	
2	8					2.0'	Fill materials (i.e., brick, crushed stone, concrete)	0.0	
3	4	S-1	2.0-4.0'	9					
	5					3.0'	Brown, SILT and m SAND, moist, no odor	0.0	
4	8								
	40					4.0'	Fill materials (i.e., brick and concrete), brown, to grey, mc SAND, some iron staining, moist, no odor	0.0	
5	18	S-2	4.0-6.0'	22					
	4							0.0	
6	6								
	6					6.0'	As above, moist, no odor	0.0	
7	4	S-3	6.0-8.0'	6					
	2							0.0	
8	7								
	12					8.0'	No Recovery	0.0	
9	14	S-4	8.0-10.0'	20					
	6							0.0	
10	5						**NATIVE MATERIAL**		
	1					10.0'	Grey, SILT and CLAY, wet @ ~10.0' BGS	0.0	
11	2	S-5	10.0-12.0'	4					
	2							0.0	
12	3								
	4					12.0'	As above, no odor	0.0	
13	4	S-6	12.0-14.0'	7					
	3							0.0	
14	4								
							Bottom @ 14.0' BGS		
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~14.0 BGS
Groundwater Encountered @ ~10.0' BGS

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LBA

BORING # B08-6

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Phase II Environmental Site Assessment
Port of Rochester
Rochester, New York

BORING B08-7
SHEET 1 of 1
JOB # 208453
CHKD. BY: ED

CONTRACTOR: Target Drilling	BORING LOCATION		
DRILLER Ben Saragusa	GROUND SURFACE ELEVATION	DATUM	
LABELLA REPRESENTATIVE E. Dumrese	START DATE 10/27/2008	END DATE	10/27/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FT.)	SAMPLE N-VALUE /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
						0.0'	Asphalt **FILL MATERIAL**	0.0	
1		S-1	0.0-2.0'	N/A		0.3'	Fill materials (i.e., crushed gravel, concrete, brick)		
						0.6'	Brown, mc SAND, some c Gravel, moist, no odor	0.0	
2	2					2.0'	As above	0.0	
3	4	S-2	2.0-4.0'	24					
	20							0.0	
4	50/4								
	15					4.0'	Concrete obstruction @ ~3.8' BGS	0.0	
5	69	S-3	4.0-5.6'						
								0.0	
6							*Refusal @ ~5.6' BGS*		
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~5.6 BGS
Groundwater Not Encountered

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Phase II Environmental Site Assessment Port of Rochester Rochester, New York	BORING B08-8 SHEET 1 of 1 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling
DRILLER Ben Saragusa
LABELLA REPRESENTATIVE E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 10/27/2008 END DATE 10/27/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoon
ROCK DRILLING METHOD N/A

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
						0.0'	Asphalt	0.0	
1						0.3'	Crushed gravel		
						1.0'	Light brown, SILT, some mf Sand, moist, no odor	0.0	
2							**NATIVE MATERIAL**		
						2.0'	As above	0.0	
3									
								0.0	
4						4.0'	Grey to brown, SILT, little Clay, moist, no odor	0.0	
5									
								0.0	
6						6.0'	Grey to brown, SILT, some Clay, moist, no odor	0.0	
7									
								0.0	
8							*Bottom @ 8.0' BGS*		
9									
10									
11									
12									
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
Bottom of Boring = ~8.0 BGS
Groundwater Not Encountered

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NY ENVIRONMENTAL ENGINEERING CONSULTANTS	TEST PIT LOG PROJECT Phase II ESA: Test Pit Soil Sampling Port of Rochester Lake Avenue, Rochester, New York	BORING: TP-1 SHEET 1 OF 1 JOB: 208453 CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 10/3/08 END DATE: 10/3/08
TIME: 1200 TO 1300
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
			NATIVE MATERIAL	0.0	
		1.0'	Light brown, SILT, little f Sand, moist, No odor		
2		2.0'	As above	0.0	
		3.0'	*4" Steel pipe running east to west	0.0	
4		4.0'	As above	0.0	
		5.5'	8' Steel abandoned water line running east-west	0.0	
6			*Bottom @ 6.0' BGS*		
8					
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			6.0' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-1

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-2
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 9/5/08
END DATE: 9/5/08
TIME: 1345 TO 1430
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
		1.0' 1.5'	**FILL MATERIAL** Light brown, SILT and mf SAND, dry, No odor Assorted fill materials (i.e., brick concrete, metal pieces)	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above *Refusal @ 4.5' BGS*	0.0	
6					
8					
10					
12					

WATER LEVEL DATA DATE	TIME	ELAPSED TIME	BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
			4.8' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations
and = 35 to 50 %
some = 20 to 35%
little = 10 to 20%
trace = 1 to 10%
c = coarse
m = medium
f = fine
vf = very fine
BGS = Below the Ground Surface
NA = Not Applicable

BORING: TP-2

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-3
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental | TEST PIT LOCATION: | TIME: 1300 TO 1345
EXCAVATOR: Kubota KX121-3 Super Series | GROUND SURFACE ELEVATION: NA | DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese | START DATE: 9/5/08 | END DATE: 9/5/08

OVERBURDEN SAMPLING METHOD: Direct Grab | OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
		1.0' 1.5'	**FILL MATERIAL** Light brown to pink, SILT, little mf Sand, trace Clay, damp, No odor Eastern end of TP-3 - Brick fragments, cut stone, some metal objects, very loose	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above	0.0	
		5.0'	As above	0.0	
6		6.0'	As above	0.0	
		7.0'	As above	0.0	
8		8.0'	*Bottom @ 8.0' BGS*		
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			8.0' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-3

LABELLA
Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-4
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 9/5/08 END DATE: 9/5/08
TIME: 1045 TO 1130
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Crushed Gravel	0.1	
		1.0' 1.5'	**FILL MATERIAL** Light brown to grey, SILT and f SAND, moist, No odor (buried topsoil) Concrete chunk	0.0	
2		2.5'	Crushed brick and concrete fragments - concrete block ~3.0' in diameter encountered	0.0	
		3.2'	**NATIVE MATERIAL** Light brown, mf SAND, little Silt, dry, No odor	0.0	
4		4.0'	Light brown, SILT, little mf Sand, trace Clay, moist, No odor	0.0	
		5.0'	As above	0.0	
6		6.0'	As above, No odor	0.0	
		7.3'	As above *Bottom @ 7.3' BGS*	0.0	
8					
10					
12					

WATER LEVEL DATA DATE	TIME	ELAPSED TIME	BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
			7.3' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-4

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT

Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-5
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental | TEST PIT LOCATION: | TIME: 1445 TO 1600
EXCAVATOR: Kubota KX121-3 Super Series | GROUND SURFACE ELEVATION: NA | DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese | START DATE: 9/5/08 | END DATE: 9/5/08

OVERBURDEN SAMPLING METHOD: Direct Grab | OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
		1.0'	Grey, SILT, trace f Sand, moist, No odor Abandoned clay sewer line running north to south **FILL MATERIAL**	0.0	
2		2.0' 2.5'	Some brick fragments, asphalt pieces and crushed concrete Brick fragmented wall running east to west along southern end of test pit	0.0	
		3.0'	As above	0.0	
4		4.0'	As above	0.0	
		5.0'	As above **NATIVE MATERIAL**	0.0	
6		6.0'	Grey, SILT, little Clay, trace f Sand, wet, No odor *Bottom @ 6.8' BGS*	0.0	
8					
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			6.8' BGS	6.5' BGS	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-5

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-6
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION: -
GROUND SURFACE ELEVATION: NA
START DATE: 9/5/08 END DATE: 9/5/08
TIME: 930 TO 1030
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
		0.5'	**NATIVE MATERIAL** Light brown, mf SAND, trace Silt, dry, No odor		
		1.5'	~3/4" steel conduit running north to south	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above, some Silt	0.0	
		5.0'	As above	0.0	
6		6.0'	As above	0.0	
		7.0'	As above	0.0	
8			*Bottom @ 8.0' BGS*		
10					
12					

WATER LEVEL DATA DATE	TIME	ELAPSED TIME	BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
			8.0' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-6

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-7
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 9/5/08 END DATE: 9/5/08
TIME: 830 TO 930
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
			FILL MATERIAL		
	S-1 1.5'	1.0'	Blue slag encountered - large chunks (i.e. <1' in diameter Fill materials: Brick, crushed concrete, steel plates, some wood pieces to 8.0' BGS	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above	0.0	
		5.0'	As above	0.0	
6		6.0'	As above	0.0	
		7.0'	As above	0.0	
8			*Bottom @ 8.0' BGS*		
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			8.0' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-7

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-8
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
TEST PIT LOCATION:
TIME: 1330 TO 1400
EXCAVATOR: Kubota KX121-3 Super Series
GROUND SURFACE ELEVATION: NA
DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese
START DATE: 9/5/08
END DATE: 9/5/08

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil **NATIVE MATERIAL**	0.0	
		1.0'	Light brown, SILT, some mf Sand, dry, No odor	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	Brown to grey, SILT, some Clay, moist, No odor	0.0	
			Bottom @ 5.0' BGS		
6					
8					
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			5.0' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-8

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-9
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 10/3/08/2008
END DATE: 10/3/08
TIME: TO
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0' 0.8'	Topsoil **NATIVE MATERIAL** Light brown, SILT, trace f Sand and Clay	0.0	
		1.0'	As above	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above *Bottom @ 4.5' BGS*	0.0	
6					
8					
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			4.5' BGS	Not encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-9

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-10
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 10/3/08/2008
END DATE: 10/3/08
TIME: _ TO
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil	0.0	
			FILL MATERIAL		
		1.0'	Assorted fill (C&D debris - concrete chunks, bricks, etc.)	0.0	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above	0.0	
		5.0'	As above	0.0	
6		6.0'	As above	0.0	
		7.0'	As above	0.0	
			NATIVE MATERIAL		
8		8.0'	Light brown, SILT, trace f Sand, moist, No odor	0.0	
		9.5'	As above, wet @ 8.8' BGS	0.0	
10		10.0'	As above	0.0	
			Bottom @ 10.6' BGS		
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			10.6' BGS	8.8' BGS	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-10

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-11
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental | TEST PIT LOCATION: | TIME: TO
EXCAVATOR: Kubota KX121-3 Super Series | GROUND SURFACE ELEVATION: NA | DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese | START DATE: 9/5/08 | END DATE: 9/5/08

OVERBURDEN SAMPLING METHOD: Direct Grab | OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil **NATIVE MATERIAL**	0.0	
		1.0'	Light brown, mf SAND, little Silt, dry, No odor	0.0	
2		2.0'	As above, No odor	0.0	
		3.0'	As above	0.0	
4		4.0'	As above, No odor	0.0	
		5.0'	As above	0.0	
6		6.0'	As above, No odor	0.0	
		7.0'	As above	0.0	
8		8.0'	As above *Bottom @ 8.5' BGS*	0.0	
10					
12					

WATER LEVEL DATA: DATE	TIME	ELAPSED TIME	BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
			8.5' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-11

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TEST PIT LOG

PROJECT

Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-12
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 9/5/08 END DATE: 9/5/08
TIME: TO
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil **NATIVE MATERIAL**	0.0	
		1.0'	Light brown, SILT, little mf Sand, moist, No odor	0.0	
2		2.0'	As above, No odor	0.0	
		3.0'	As above	0.0	
4		4.0'	As above, No odor	0.0	
		5.0'	As above	0.0	
6		6.0'	As above, No odor	0.0	
		7.0'	As above	0.0	
8			*Bottom @ 8.0' BGS*		
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			8.5' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations
and = 35 to 50 %
some = 20 to 35%
little = 10 to 20%
trace = 1 to 10%
c = coarse
m = medium
f = fine
vf = very fine
BGS = Below the Ground Surface
NA = Not Applicable

BORING: **TP-12**

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TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-13
SHEET 1 OF 1
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
TEST PIT LOCATION:
TIME: TO
EXCAVATOR: Kubota KX121-3 Super Series
GROUND SURFACE ELEVATION: NA
DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese
START DATE: 10/3/08
END DATE: 10/3/08

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil **FILL MATERIAL**	0.0	
		1.0' 1.5'	Reddish to brown, mc SAND and SILT, moist, No odor Red slag (large pieces, > 6" in diameter, but < 1' in diameter) - Sulfur odor	0.1	
2		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above	0.0	
		5.0'	As above	0.0	
6		6.0'	As above	0.0	
		7.0'	As above	0.0	
8		8.0'	As above	0.0	
		9.3'	As above, wet @ ~9.3' BGS **NATIVE MATERIAL**	0.0	
10		10.0'	Dark brown to black, SILT, trace f Sand and Clay, some organics (roots), saturated, sulfur odor	0.1	
		11.0'	As above *Bottom @ 11.5' BGS*	0.0	
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			11.5' BGS	9.3' BGS	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-13

TEST PIT LOG

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PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: **TP-14**
SHEET 1 OF 1
JOB: **208453**
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese

TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 10/3/08 END DATE: 10/3/08

TIME: TO
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab

OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil **FILL MATERIAL**	0.0	
		1.0'	Assorted fill (i.e. brick fragments, concrete, blue slag) **NATIVE MATERIAL**	0.0	
2		2.0'	Light tan, SILT, trace f Sand, moist, No odor	0.0	
		3.0'	As above	0.0	
4		4.0'	As above, No odor	0.0	
		5.0'	As above	0.0	
6		6.0'	As above, No odor	0.0	
		7.0'	Large concrete slab, unable to excavate beneath *Refusal @ 7.2' BGS*	0.0	
8					
10					
12					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			7.2' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: **TP-14**

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ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-15
SHEET 1 OF 2
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 10/3/08
END DATE: 10/3/08
TIME: TO
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil **NATIVE MATERIAL**	0.0	
		1.0'	Light brown, SILT, trace f Sand, moist, No odor	0.0	
2		1.5'	Broken steel I-beams encountered - 24" thick concrete and stone wall running east to west along northern side of test pit - Vertical steel support for former trestle system encountered, depth to top of concrete pilon ~10.0' BGS		
		2.0'	As above	0.0	
		3.0'	As above	0.0	
4		4.0'	As above, No odor	0.0	
		5.0'	As above	0.0	
6		6.0'	As above, No odor	0.0	
		7.0'	As above	0.0	
8		8.0'	As above, No odor	0.0	
		9.0'	As above	0.0	
10		10.0'	Pink to reddish brown, SANDSTONE, some mc Sand, moist, No odor	0.0	
		11.0'	As above	0.0	
12		12.0'	As above, No odor	0.0	

WATER LEVEL DATA: DATE	TIME	ELAPSED TIME	BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
			19.5' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-15

LABELLA
Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: TP-15
SHEET 2 OF 2
JOB: 208453
CHKD BY: ED

CONTRACTOR: TREC Environmental
TEST PIT LOCATION:
TIME: TO
EXCAVATOR: Kubota KX121-3 Super Series
GROUND SURFACE ELEVATION: NA
DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese
START DATE: 10/3/08
END DATE: 10/3/08

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
14		14'	As above. No odor	0.0	
		15'	As above	0.0	
16		16'	As above. No odor	0.0	
		17'	As above	0.0	
18		18'	As above. No odor	0.0	
		19'	Concrete Slab encountered @ ~19.5' BGS *Refusal @ 19.5' BGS*	0.0	
20					
22					
24					
26					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			19.5' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-15

LABELLA
Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

TEST PIT LOG

PROJECT
Phase II ESA: Test Pit Soil Sampling
Port of Rochester
Lake Avenue, Rochester, New York

BORING: **TP-16**
SHEET 1 OF 2
JOB: **208453**
CHKD BY: ED

CONTRACTOR: TREC Environmental
EXCAVATOR: Kubota KX121-3 Super Series
LABELLA REPRESENTATIVE: E. Dumrese
TEST PIT LOCATION:
GROUND SURFACE ELEVATION: NA
START DATE: 10/3/08 END DATE: 10/3/08
TIME: TO
DATUM: NA

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
0		0.0'	Topsoil - Concrete wall ~24" thick running north to south **NATIVE MATERIAL**	0.0	
		1.0'	Light brown, SILT, trace f Sand, moist, No odor	0.0	
2		2.0'	As above, No odor	0.0	
		3.0'	As above	0.0	
4		4.0'	As above, No odor	0.0	
		5.0'	As above	0.0	
6		6.0'	As above, No odor	0.0	
		7.0'	As above	0.0	
8		8.0'	As above, No odor	0.0	
		9.0'	As above	0.0	
10		10.0'	As above, No odor	0.0	
		11.0'	As above	0.0	
12		12.0'	As above, No odor	0.0	

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			14.5' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
some = 20 to 35%	m = medium	BGS = Below the Ground Surface
little = 10 to 20%	f = fine	NA = Not Applicable
trace = 1 to 10%	vf = very fine	

BORING: TP-16

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NY ENVIRONMENTAL ENGINEERING CONSULTANTS	**TEST PIT LOG** PROJECT Phase II ESA: Test Pit Soil Sampling Port of Rochester Lake Avenue, Rochester, New York	**BORING: TP-16** SHEET 2 OF 2 **JOB: 208453** CHKD BY: ED

CONTRACTOR: TREC Environmental
TEST PIT LOCATION:
TIME: TO
EXCAVATOR: Kubota KX121-3 Super Series
GROUND SURFACE ELEVATION: NA
DATUM: NA
LABELLA REPRESENTATIVE: E. Dumrese
START DATE: 10/3/08
END DATE: 10/3/08

OVERBURDEN SAMPLING METHOD: Direct Grab
OTHER:

DEPTH	SAMPLE NO. AND DEPTH	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	REMARKS
14		14'	Various steel debris	0.0	
		14.5'	Concrete slab @ ~14.5' BGS		
			Refusal @ 14.5' BGS		
16					
18					
20					
22					
24					
26					

WATER LEVEL DATA			BOTTOM OF TEST PIT	GROUNDWATER ENCOUNTERED	NOTES:
DATE	TIME	ELAPSED TIME			
			14.5' BGS	Not Encountered	

GENERAL NOTES
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES. TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED. FLUCTUATIONS OF GROUNDWATER
3) Abbreviations

and = 35 to 50 %	c = coarse	
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trace = 1 to 10%	vf = very fine	

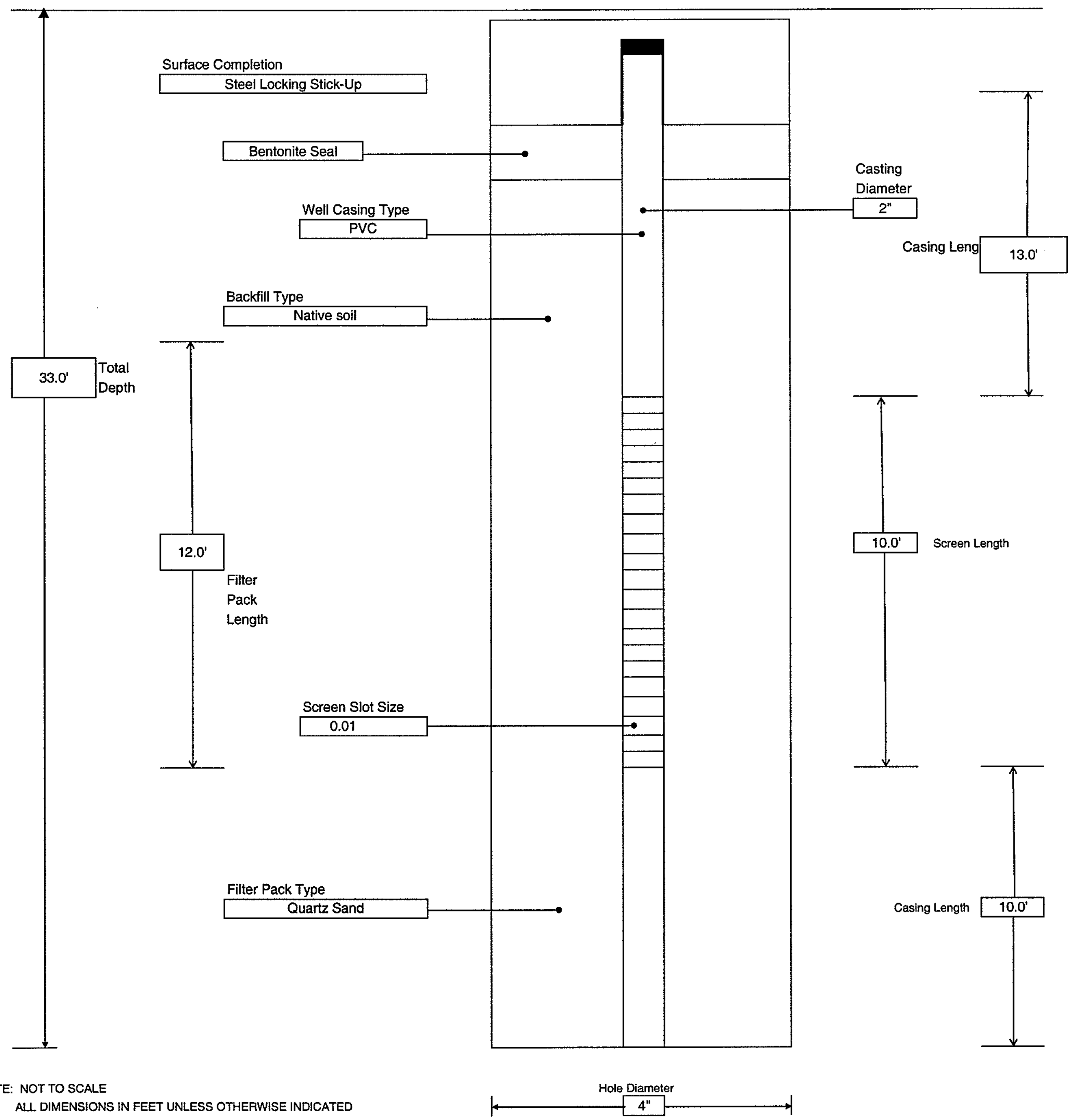
BORING: TP-16

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester - Port Redevelopment 4700 Lake Avenue Rochester, New York	BORING: B08-2/MW-1 SHEET 1 OF 1 JOB # 208453 CHKD. BY: ED

CONTRACTOR: Target Drilling, Inc.	BORING LOCATION: Area A-4
DRILLER: B. Saragusa	GROUND SURFACE ELEVATION: N/A DATUM: N/A
LABELLA REPRESENTATIVE: Evan Dumrese	START DATE: 10/24/2008 END DATE: 10/25/2008

TYPE OF DRILL RIG: Rotary Drill Rig
AUGER SIZE AND TYPE: N/A
OVERBURDEN SAMPLING METHOD: Hollow Stem Auger
ROCK DRILLING METHOD: N/A

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS
10/25/2008	930	~18.0'		



NOTE: NOT TO SCALE
ALL DIMENSIONS IN FEET UNLESS OTHERWISE INDICATED

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
PH: (585) 454-6110 FAX: (585) 454-3066

GROUNDWATER SAMPLING FORM

WELL I.D. B08-2/MW-1

Project Name: Port of Rocheter - Pre Development Assessment
Project No.: 208763
Location: 4700 Lake Avenue, Rochester, NY
Sampled By: E. Dumrese
Date: 11/5/2008
Weather: Partly Cloudy and Cold ~34 Degrees F.

PURGE VOLUME CALCULATION

Well Diameter: 1.0 -Inch
Static Water Level: 11.57 -Feet
Depth of Well: 35.31 -Feet
Single Well Volume: 3.90 -Gallons

PURGE & SAMPLING METHOD

[X] Bailer - Type: Disposable Bailer
[ ] Pump - Type
Sampling Device: Disposable Bailer
Pump Rate:

FIELD PARAMETER MEASUREMENTS

Time	Gallons Purged	pH	Temp (oC)	Conductivity (mS/cm)	Turbidity (NTU)		Comments
							Color =
							LNAPL or DNAPL observed = No

Total ~3.0 Gallons Purged Purge Start Time: 1410 Purge End Time: 1450

WELL SAMPLING

Sample I.D. MW-1
Sample Time: 1500
No. of Containers: 4
Sample Preservation: HCl/HNO3

Sampled For:
VOCs - 8260B TCL + STARS
SVOCs - 8270C STARS
PCBs
8 RCRA-Dissolved TAL Metals

OBSERVATIONS:

Well Volume (1" well) = 0.0408-gal/ft.	Well Volume (4" well) = 0.65-gal/ft.
Well Volume (2" well) = 0.163-gal/ft.	

LABELLA Associates, P.C.
300 State Street
Rochester, New York 14614
Telephone: (585) 454-6110
Facsimile: (585) 454-3066

WELL I.D.: B08-2/MW-1

Project Name: Predevelopment Subsurface Conditions Analysis Investigation
Location: Port of Rochester, Development Area #1, Rochester, New York
Project No.: 208453
Sampled By: E. Dumrese
Date: 2/11/09
Weather: Partly Cloudy, ~50 degrees F.

WELL SAMPLING INFORMATION

Well Diameter:	2"	Static Water Level:	~10.38'
Depth of Well:	~34.37'	Length of Well Screen:	10.0' (13.0' – 23.0' BGS)
Measuring Point:	Top of PVC	Depth to Top of Pump:	~20.0'
Pump Type:	QED Sample Pro – Low Flow Pump	Tubing Type:	¼" O.D. Polyethylene Tubing

FIELD PARAMETER MEASUREMENT

Time	Pump Rate	Gallons Purged	pH	Temp °C	Conductivity (μS/cm)	Turbidity (NTU)	Dissolved O_2 (mg/L)	Depth to Water (Feet)	Comments
			+/- 0.1	+/-3%	+/- 3%	+/-10%	+ 10%	+/- 0.3	
915	<500 mL/min.	0.10	6.54	11.11	5.15	403.0	8.87	10.62	
920	<500 mL/min.	0.20	6.58	11.05	5.15	399.0	9.82	10.98	
925	<500 mL/min.	0.25	6.71	10.99	5.14	444.0	9.54	10.97	
930	<500 mL/min.	0.30	6.77	11.11	5.15	439.0	9.11	10.98	
935	<500 mL/min.	0.40	6.81	11.24	5.15	356.0	8.61	10.99	
940	<500 mL/min.	0.50	6.83	11.28	5.14	340.0	8.32	10.98	
945	<500 mL/min.	0.60	6.86	11.33	5.14	347.0	8.15	10.99	
950	<500 mL/min.	0.70	6.89	11.35	5.13	350.0	7.90	10.98	
955	<500 mL/min.	0.80	6.91	11.37	5.11	336.0	7.09	10.99	
1000	<500 mL/min.	0.90	6.94	11.34	5.08	265.0	6.98	10.99	
1005	<500 mL/min.	1.05	6.96	11.36	5.06	270.0	6.89	10.99	
1010	<500 mL/min.	1.25	6.98	11.37	5.03	287.0	6.76	10.98	

Total ~1.50 Gallons Purged

Purge Time Start: 915 Purge Time End: 1012 Final Static Water Level: 10.99'

OBSERVATIONS

Notes:
- Sample Time = 1015

Appendix 5

Laboratory Analytical Reports

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report Cover Page

LaBella Associates, P.C.

For Lab Project # 08-3286
Issued September 17, 2008
This report contains a total of 7 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil or solid samples have been reported on a dry weight basis, unless qualified "reported as received".

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The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.
"E" = Result has been estimated, calibration limit exceeded.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

179 Lake Avenue · Rochester, NY 14608 · (585) 647-2530 · Fax (585) 647-3311 · ELAP ID# 10958

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 (585) 647-2530 FAX (585) 647-3311

LABORATORY REPORT OF ANALYSIS

Client: LaBella Associates, P.C.

Client Job Site: Port of Rochester

Client Job No.: N/A

Lab Project No.: 08-3286

Sample Type: Soil
Analytical Method: SW9012
Date Sampled: 9/9/2008
Date Received: 9/10/2008
Date Analyzed: 9/15/2008

Lab Sample ID.	Sample Location/Field ID	Total Cyanide (ug/g)
10688	TP-7 (1.0')	11

ELAP ID No. 10709

Comments:

Approved By Technical Director: Val McMiller for
Bruce Hoogesteger

This report is part of a multipage document and should be evaluated in its entirety. Chain of Custody provides additional sample information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: LaBella Associates, P.C.
Client Job Site: Port of Rochester
Client Job No.: N/A
Field Location: TP-7 (1.0')
Field ID No.: N/A

Lab Project No.: 08-3286
Lab Sample No.: 10688
Sample Type: Soil
Date Sampled: 09/09/2008
Date Received: 09/10/2008

Laboratory Report for TAL Metals Analysis in Solid

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Aluminum	09/17/2008	SW846 6010	9870
Antimony	09/17/2008	SW846 6010	<6.62
Arsenic	09/17/2008	SW846 6010	10.9
Barium	09/17/2008	SW846 6010	156
Beryllium	09/17/2008	SW846 6010	1.39
Cadmium	09/17/2008	SW846 6010	1.83
Calcium	09/17/2008	SW846 6010	54300
Chromium	09/17/2008	SW846 6010	14.4
Cobalt	09/17/2008	SW846 6010	6.32
Copper	09/17/2008	SW846 6010	17.9
Iron	09/17/2008	SW846 6010	50600
Lead	09/17/2008	SW846 6010	35.9
Magnesium	09/17/2008	SW846 6010	13200
Manganese	09/17/2008	SW846 6010	816
Mercury	09/12/2008	SW846 7471	0.0145 M
Nickel	09/17/2008	SW846 6010	14.3
Potassium	09/17/2008	SW846 6010	1510
Selenium	09/17/2008	SW846 6010	<0.552
Silver	09/17/2008	SW846 6010	2.41
Sodium	09/17/2008	SW846 6010	489
Thallium	09/17/2008	SW846 6010	<0.662
Vanadium	09/17/2008	SW846 6010	25.5
Zinc	09/17/2008	SW846 6010	111

ELAP ID No.:10958

Comments:

Approved By: Val McMullen for:
Bruce Hoogesteger, Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi-Volatile Analysis Report for Soils/Solids/Sludges

Client: LaBella Associates, P.C.

Client Job Site:	Port of Rochester	**Lab Project Number:**	08-3286
		Lab Sample Number:	10688
Client Job Number:	N/A		
Field Location:	TP-7 (1.0')	**Date Sampled:**	09/09/2008
Field ID Number:	N/A	**Date Received:**	09/10/2008
Sample Type:	Soil	**Date Analyzed:**	09/15/2008

Base / Neutrals	Results in ug / Kg	Base / Neutrals	Results in ug / Kg
Acenaphthene	ND< 372	Dibenz (a,h) anthracene	ND< 372
Anthracene	ND< 372	Fluoranthene	ND< 372
Benzo (a) anthracene	ND< 372	Fluorene	ND< 372
Benzo (a) pyrene	ND< 372	Indeno (1,2,3-cd) pyrene	ND< 372
Benzo (b) fluoranthene	ND< 372	Naphthalene	ND< 372
Benzo (g,h,i) perylene	ND< 372	Phenanthrene	ND< 372
Benzo (k) fluoranthene	ND< 372	Pyrene	ND< 372
Chrysene	ND< 372	Acenaphthylene	ND< 372
Diethyl phthalate	ND< 372	1,2-Dichlorobenzene	ND< 372
Dimethyl phthalate	ND< 929	1,3-Dichlorobenzene	ND< 372
Butylbenzylphthalate	ND< 372	1,4-Dichlorobenzene	ND< 372
Di-n-butyl phthalate	ND< 372	1,2,4-Trichlorobenzene	ND< 372
Di-n-octylphthalate	ND< 372	Nitrobenzene	ND< 372
Bis (2-ethylhexyl) phthalate	ND< 372	2,4-Dinitrotoluene	ND< 372
2-Chloronaphthalene	ND< 372	2,6-Dinitrotoluene	ND< 372
Hexachlorobenzene	ND< 372	Bis (2-chloroethyl) ether	ND< 372
Hexachloroethane	ND< 372	Bis (2-chloroisopropyl) ether	ND< 372
Hexachlorocyclopentadiene	ND< 372	Bis (2-chloroethoxy) methan	ND< 372
Hexachlorobutadiene	ND< 372	4-Bromophenyl phenyl ether	ND< 372
N-Nitroso-di-n-propylamine	ND< 372	4-Chlorophenyl phenyl ether	ND< 372
N-Nitrosodiphenylamine	ND< 372	Benzidine	ND< 929
N-Nitrosodimethylamine	ND< 372	3,3'-Dichlorobenzidine	ND< 372
Isophorone	ND< 372	4-Chloroaniline	ND< 372
Benzyl alcohol	ND< 929	2-Nitroaniline	ND< 929
Dibenzofuran	ND< 372	3-Nitroaniline	ND< 929
2-Methylnapthalene	ND< 372	4-Nitroaniline	ND< 929

Acids	Results in ug / Kg	Acids	Results in ug / Kg
Phenol	ND< 372	2-Methylphenol	ND< 372
2-Chlorophenol	ND< 372	3&4-Methylphenol	ND< 372
2,4-Dichlorophenol	ND< 372	2,4-Dimethylphenol	ND< 372
2,6-Dichlorophenol	ND< 372	2-Nitrophenol	ND< 372
2,4,5-Trichlorophenol	ND< 929	4-Nitrophenol	ND< 929
2,4,6-Trichlorophenol	ND< 372	2,4-Dinitrophenol	ND< 372
Pentachlorophenol	ND< 929	4,6-Dinitro-2-methylphenol	ND< 929
4-Chloro-3-methylphenol	ND< 372	Benzoic acid	ND< 929

ELAP Number 10958 Method: EPA 8270C Data File: S42020.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram

Signature: Valhhhh for.
Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

083286S1.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges

Client: LaBella Associates, P.C.

Client Job Site:	Port of Rochester	**Lab Project Number:**	08-3286
		Lab Sample Number:	10688
Client Job Number:	N/A		
Field Location:	TP-7 (1.0')	**Date Sampled:**	09/09/2008
Field ID Number:	N/A	**Date Received:**	09/10/2008
Sample Type:	Soil	**Date Analyzed:**	09/16/2008

Halocarbons	Results in ug / Kg
Bromodichloromethane	ND< 8.02
Bromomethane	ND< 8.02
Bromoform	ND< 20.1
Carbon Tetrachloride	ND< 20.1
Chloroethane	ND< 8.02
Chloromethane	ND< 8.02
2-Chloroethyl vinyl Ether	ND< 40.1
Chloroform	ND< 8.02
Dibromochloromethane	ND< 8.02
1,1-Dichloroethane	ND< 8.02
1,2-Dichloroethane	ND< 8.02
1,1-Dichloroethene	ND< 8.02
cis-1,2-Dichloroethene	ND< 8.02
trans-1,2-Dichloroethene	ND< 8.02
1,2-Dichloropropane	ND< 8.02
cis-1,3-Dichloropropene	ND< 8.02
trans-1,3-Dichloropropene	ND< 8.02
Methylene chloride	ND< 20.1
1,1,2,2-Tetrachloroethane	ND< 8.02
Tetrachloroethene	ND< 8.02
1,1,1-Trichloroethane	ND< 8.02
1,1,2-Trichloroethane	ND< 8.02
Trichloroethene	ND< 8.02
Trichlorofluoromethane	ND< 8.02
Vinyl chloride	ND< 8.02

Aromatics	Results in ug / Kg
Benzene	ND< 8.02
Chlorobenzene	ND< 8.02
Ethylbenzene	ND< 8.02
Toluene	ND< 8.02
m,p-Xylene	11.4
o-Xylene	ND< 8.02
Styrene	ND< 20.1
1,2-Dichlorobenzene	ND< 20.1
1,3-Dichlorobenzene	ND< 20.1
1,4-Dichlorobenzene	ND< 8.02

Ketones	Results in ug / Kg
Acetone	ND< 40.1
2-Butanone	ND< 40.1
2-Hexanone	ND< 20.1
4-Methyl-2-pentanone	ND< 20.1

Miscellaneous	Results in ug / Kg
Carbon disulfide	ND< 8.02
Vinyl acetate	ND< 20.1

ELAP Number 10958 Method: EPA 8260B Data File: V59777.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram
Surrogate outliers indicate probable matrix interference

Signature: Val McMullen for

Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Soils/Solids/Sludges (Additional STARS Compounds)

Client: LaBella Associates, P.C.

Client Job Site:	Port of Rochester	**Lab Project Number:**	08-3286
		Lab Sample Number:	10688
Client Job Number:	N/A		
Field Location:	TP-7 (1.0')	**Date Sampled:**	09/09/2008
Field ID Number:	N/A	**Date Received:**	09/10/2008
Sample Type:	Soil	**Date Analyzed:**	09/16/2008

Aromatics	Results in ug / Kg	**Aromatics**	Results in ug / Kg
n-Butylbenzene	ND< 40.1	1,2,4-Trimethylbenzene	ND< 8.02
sec-Butylbenzene	ND< 8.02	1,3,5-Trimethylbenzene	ND< 8.02
tert-Butylbenzene	ND< 20.1		
n-Propylbenzene	ND< 8.02	**Miscellaneous**	
Isopropylbenzene	ND< 40.1	Methyl tert-butyl Ether	ND< 8.02
p-Isopropyltoluene	ND< 40.1		
Naphthalene	ND< 20.1		

ELAP Number 10958 Method: EPA 8260B Data File: V59777.D

Comments: ND denotes Non Detect
ug / Kg = microgram per Kilogram
Surrogate outliers indicate probable matrix interference

Signature: Val M Mulls BSG

Bruce Hoogesteger: Technical Director

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:			
COMPANY: LaBella Associates, P.C.		COMPANY: LaBella Associates, P.C.		LAB PROJECT #: 08-3286	CLIENT PROJECT #:
ADDRESS: 300 State Street		ADDRESS: 300 State Street		TURNAROUND TIME: (WORKING DAYS)	
CITY: Rochester STATE: NY ZIP: 14614		CITY: Rochester STATE: NY ZIP: 14614			
PHONE: 295-6295	FAX:	PHONE: 295-6245	FAX:	STD	OTHER
ATTN: Dennis Porter		ATTN: Dennis Porter		☐ 1 ☐ 2 ☐ 3 ☒ 5	☐
COMMENTS:				QUOTE #:	

PROJECT NAME/SITE NAME: Port of Rochester

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TAL Metals	TCL + STARS VOCs	STARS SVOCs	TCL SVOCs	Cyanide						REMARKS	PARADIGM LAB SAMPLE NUMBER
1	9/9/08	1000		X	TP-7 (1.0')	Soil	2	X	X	X	X	X						CPCED 1030 8270 ABN	10688
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type: Comments:	Y ☒	N ☐
Preservation: N/A Comments:	Y ☐	N ☐
Holding Time: Comments:	Y ☒	N ☐
Temperature: 12°C iced Comments:	Y ☐	N ☒

	Date/Time
Sampled By: Evan P. Dannese	9/9/08 / 1000
Relinquished By: [signature]	9/10/08 / 1320
Received By: [signature]	9/10/08 1320
Received @ Lab By: Elizabeth A. Honck	9/10/08 1545

Total Cost:

P.I.F.

PARADIGM
ENVIRONMENTAL SERVICES, INC.

Analytical Report Cover Page

LaBella Associates

For Lab Project # 08-4228
Issued November 5, 2008
This report contains a total of 5 pages

The reported results relate only to the samples as they have been received by the laboratory.

Any noncompliant QC parameters having impact on the data are flagged or documented on the final report.

All soil or solid samples have been reported on a dry weight basis, unless qualified "reported as received".

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The Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt. Sample condition requirements are defined under the 2003 NELAC Standard, sections 5.5.8.3.1 and 5.5.8.3.2.

NYSDOH ELAP does not certify for all parameters. Paradigm Environmental Services or the indicated subcontracted laboratory does hold certification for all analytes where certification is offered by ELAP unless otherwise specified.

Data qualifiers are used, when necessary, to provide additional information about the data. This information may be communicated as a flag or as text at the bottom of the report. Please refer to the following list of frequently used data flags and their meaning:

"ND" = analyzed for but not detected.
"E" = Result has been estimated, calibration limit exceeded.
"D" = Duplicate results outside QC limits. May indicate a non-homogenous matrix.
"M" = Matrix spike recoveries outside QC limits. Matrix bias indicated.
"B" = Method blank contained trace levels of analyte. Refer to included method blank report.

179 Lake Avenue · Rochester, NY 14608 · (585) 647-2530 · Fax (585) 647-3311 · ELAP ID# 10958

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, NY 14608 (585) 647-2530 FAX (585) 647-3311

Client: LaBella Associates

Client Job Site: Port of Rochester - Pre-development

Client Job No.: 208413

Field Location: MW-1
Field ID No.: N/A

Lab Project No.: 08-4228
Lab Sample No.: 12808

Sample Type: Water

Date Sampled: 10/29/2008
Date Received: 10/29/2008

Laboratory Report for TAL Metals Analysis in Waters

Parameter	Date Analyzed	Analytical Method	Result (mg/L)
Aluminum	10/31/2008	SW846 6010	128
Antimony	10/31/2008	SW846 6010	<0.060
Arsenic	10/31/2008	SW846 6010	0.043
Barium	10/31/2008	SW846 6010	0.797
Beryllium	10/31/2008	SW846 6010	0.006
Cadmium	10/31/2008	SW846 6010	0.008
Calcium	10/31/2008	SW846 6010	397
Chromium	10/31/2008	SW846 6010	0.187
Cobalt	10/31/2008	SW846 6010	0.069
Copper	10/31/2008	SW846 6010	0.187
Iron	10/31/2008	SW846 6010	174
Lead	10/31/2008	SW846 6010	0.093
Magnesium	10/31/2008	SW846 6010	120
Manganese	10/31/2008	SW846 6010	3.94
Mercury	11/03/2008	SW846 7470	0.0002
Nickel	10/31/2008	SW846 6010	0.145
Potassium	10/31/2008	SW846 6010	40.8
Selenium	11/03/2008	SW846 6010	0.022
Silver	10/31/2008	SW846 6010	<0.010
Sodium	11/03/2008	SW846 6010	544
Thallium	10/31/2008	SW846 6010	<0.006
Vanadium	10/31/2008	SW846 6010	0.247
Zinc	10/31/2008	SW846 6010	0.505

ELAP ID No.:10958

Comments:

Approved By: ______________________

Bruce Hoogesteger, Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

File ID:084228.xls

PARADIGM
ENVIRONMENTAL SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Semi -Volatile Analysis Report for Non-potable Water

Client: LaBella Associates

Client Job Site:	Port of Rochester Pre-Development	**Lab Project Number:**	08-4228
		Lab Sample Number:	12808
Client Job Number:	208413		
Field Location:	MW-1	**Date Sampled:**	10/29/2008
Field ID Number:	N/A	**Date Received:**	10/29/2008
Sample Type:	Water	**Date Analyzed:**	11/04/2008

Base / Neutrals	Results in ug / L	Base / Neutrals	Results in ug / L
Acenaphthene	ND< 10.0	Dibenz (a,h) anthracene	ND< 10.0
Anthracene	ND< 10.0	Fluoranthene	ND< 10.0
Benzo (a) anthracene	ND< 10.0	Fluorene	ND< 10.0
Benzo (a) pyrene	ND< 10.0	Indeno (1,2,3-cd) pyrene	ND< 10.0
Benzo (b) fluoranthene	ND< 10.0	Naphthalene	ND< 10.0
Benzo (g,h,i) perylene	ND< 10.0	Phenanthrene	ND< 10.0
Benzo (k) fluoranthene	ND< 10.0	Pyrene	ND< 10.0
Chrysene	ND< 10.0	Acenaphthylene	ND< 10.0
Diethyl phthalate	ND< 10.0	1,2-Dichlorobenzene	ND< 10.0
Dimethyl phthalate	ND< 25.0	1,3-Dichlorobenzene	ND< 10.0
Butylbenzylphthalate	ND< 10.0	1,4-Dichlorobenzene	ND< 10.0
Di-n-butyl phthalate	ND< 10.0	1,2,4-Trichlorobenzene	ND< 10.0
Di-n-octylphthalate	ND< 10.0	Nitrobenzene	ND< 10.0
Bis (2-ethylhexyl) phthalate	ND< 10.0	2,4-Dinitrotoluene	ND< 10.0
2-Chloronaphthalene	ND< 10.0	2,6-Dinitrotoluene	ND< 10.0
Hexachlorobenzene	ND< 10.0	Bis (2-chloroethyl) ether	ND< 10.0
Hexachloroethane	ND< 10.0	Bis (2-chloroisopropyl) ether	ND< 10.0
Hexachlorocyclopentadiene	ND< 10.0	Bis (2-chloroethoxy) methan	ND< 10.0
Hexachlorobutadiene	ND< 10.0	4-Bromophenyl phenyl ether	ND< 10.0
N-Nitroso-di-n-propylamine	ND< 10.0	4-Chlorophenyl phenyl ether	ND< 10.0
N-Nitrosodiphenylamine	ND< 10.0	Benzidine	ND< 25.0
N-Nitrosodimethylamine	ND< 10.0	3,3'-Dichlorobenzidine	ND< 10.0
Isophorone	ND< 10.0	4-Chloroaniline	ND< 10.0
Benzyl alcohol	ND< 25.0	2-Nitroaniline	ND< 25.0
Dibenzofuran	ND< 10.0	3-Nitroaniline	ND< 25.0
2-Methylnapthalene	ND< 10.0	4-Nitroaniline	ND< 25.0

Acids	Results in ug / L	Acids	Results in ug / L
Phenol	ND< 10.0	2-Methylphenol	ND< 10.0
2-Chlorophenol	ND< 10.0	3&4-Methylphenol	ND< 10.0
2,4-Dichlorophenol	ND< 10.0	2,4-Dimethylphenol	ND< 10.0
2,6-Dichlorophenol	ND< 10.0	2-Nitrophenol	ND< 10.0
2,4,5-Trichlorophenol	ND< 25.0	4-Nitrophenol	ND< 25.0
2,4,6-Trichlorophenol	ND< 10.0	2,4-Dinitrophenol	ND< 10.0
Pentachlorophenol	ND< 25.0	4,6-Dinitro-2-methylphenol	ND< 25.0
4-Chloro-3-methylphenol	ND< 10.0	Benzoic acid	ND< 25.0

ELAP Number 10958 Method: EPA 8270C Data File: S42825.D

Comments: ND denotes Non Detect
ug / L = microgram per Liter

Signature:

Bruce Hoogesteger: Technical Director

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084228S1.XLS

PARADIGM
ENVIRONMENTAL SERVICES, INC. 179 Lake Avenue Rochester, New York 14608 (585) 647 - 2530 FAX (585) 647 - 3311

Volatile Analysis Report for Non-potable Water

Client: LaBella Associates

Client Job Site:	Port of Rochester Pre-Development	**Lab Project Number:**	08-4228
		Lab Sample Number:	12808
Client Job Number:	208413		
Field Location:	MW-1	**Date Sampled:**	10/29/2008
Field ID Number:	N/A	**Date Received:**	10/29/2008
Sample Type:	Water	**Date Analyzed:**	11/04/2008

Halocarbons	Results in ug / L
Bromodichloromethane	ND< 2.00
Bromomethane	ND< 2.00
Bromoform	ND< 5.00
Carbon Tetrachloride	ND< 2.00
Chloroethane	ND< 2.00
Chloromethane	ND< 2.00
2-Chloroethyl vinyl Ether	ND< 10.0
Chloroform	ND< 2.00
Dibromochloromethane	ND< 2.00
1,1-Dichloroethane	ND< 2.00
1,2-Dichloroethane	ND< 2.00
1,1-Dichloroethene	ND< 2.00
cis-1,2-Dichloroethene	ND< 2.00
trans-1,2-Dichloroethene	ND< 2.00
1,2-Dichloropropane	ND< 2.00
cis-1,3-Dichloropropene	ND< 2.00
trans-1,3-Dichloropropene	ND< 2.00
Methylene chloride	ND< 5.00
1,1,2,2-Tetrachloroethane	ND< 2.00
Tetrachloroethene	ND< 2.00
1,1,1-Trichloroethane	ND< 2.00
1,1,2-Trichloroethane	ND< 2.00
Trichloroethene	ND< 2.00
Trichlorofluoromethane	ND< 2.00
Vinyl chloride	ND< 2.00

Aromatics	Results in ug / L
Benzene	ND< 0.700
Chlorobenzene	ND< 2.00
Ethylbenzene	ND< 2.00
Toluene	ND< 2.00
m,p-Xylene	ND< 2.00
o-Xylene	ND< 2.00
Styrene	ND< 5.00
1,2-Dichlorobenzene	ND< 2.00
1,3-Dichlorobenzene	ND< 2.00
1,4-Dichlorobenzene	ND< 2.00

Ketones	Results in ug / L
Acetone	ND< 10.0
2-Butanone	ND< 10.0
2-Hexanone	ND< 5.00
4-Methyl-2-pentanone	ND< 5.00

Miscellaneous	Results in ug / L
Carbon disulfide	ND< 5.00
Vinyl acetate	ND< 5.00

ELAP Number 10958 Method: EPA 8260B Data File: V61276.D

Comments: ND denotes Non Detect
ug / L = microgram per Liter

Signature:

Bruce Hoogesteger: Technical Director

This report is part of a multipage document and should only be evaluated in its entirety. Chain of Custody provides additional information, including compliance with sample condition requirements upon receipt.

PARADIGM
ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue
Rochester, NY 14608
(585) 647-2530 • (800) 724-1997
FAX: (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:			
COMPANY: LaBella Associates		COMPANY:		LAB PROJECT #: 08-4228	CLIENT PROJECT #: 208453
ADDRESS: 300 State Street		ADDRESS:			
CITY: Rochester STATE: NY ZIP: 14614		CITY: ← Same STATE: ZIP:		TURNAROUND TIME: (WORKING DAYS)	
PHONE: (585) 295-6245	FAX:	PHONE:	FAX:	1 ☐ 2 ☐ 3 ☐ STD 5 ☒	OTHER ☐
ATTN: Mr. Denis Porter		ATTN:			
COMMENTS: cc Evan Dunmore				QUOTE #:	

PROJECT NAME/SITE NAME: Port of Rochester - Pre-Development

REQUESTED ANALYSIS

	DATE	TIME	COMPOSITE	GRAB	SAMPLE LOCATION/FIELD ID	MATRIX	NUMBER CONTAINERS	TCL VOCs	TCL SVOCs	TAL Metals								REMARKS	PARADIGM LAB SAMPLE NUMBER
1	10/29/08	1500		X	MW-1	GW	4	X	X	X									12808
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

LAB USE ONLY BELOW THIS LINE

Sample Condition: Per NELAC/ELAP 210/241/242/243/244

Receipt Parameter	NELAC Compliance	
Container Type: Comments:	Y ☒	N ☐
Preservation: Comments:	Y ☒	N ☐
Holding Time: Comments:	Y ☒	N ☐
Temperature: 12°C iced Comments: pres begun in field	Y ☒	N ☐

	Date/Time
Evan Dunmore	10/29/08 / 1500
Sampled By	**Date/Time**
[signature]	10/29/08 / 1503
Relinquished By	**Date/Time**
Jane J. Aaloia	10/29/08 1503
Received By	**Date/Time**
Elizabeth A. Honck	10/29/08 1610
Received @ Lab By	**Date/Time**

Total Cost:

P.I.F.

PARADIGM

ENVIRONMENTAL SERVICES, INC.
179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

SEMI-VOLATILES LABORATORY REPORT FOR SOIL/SOLIDS

Client:	LaBella Associates	**Lab Project No.:**	00-0490
Client Job Site:	Port of Rochester	**Lab Sample No.:**	2139
		Sample Type:	Soil
Client Job No.:	99150	**Sample Date:**	02/28/2000
Field Location:	Test Pit #10 @3'	**Date Received:**	03/09/2000
Field ID No.:	N/A	**Date Analyzed:**	03/15/2000

COMPOUND	RESULT (ug/Kg)	COMPOUND	RESULT (ug/Kg)
Benzyl alcohol	ND< 795	2,4-Dinitrophenol	ND< 318
Bis (2-chloroethyl) ether	ND< 318	2,4-Dinitrotoluene	ND< 318
Bis (2-chloroisopropyl) ether	ND< 318	2,6-Dinitrotoluene	ND< 318
2-Chlorophenol	ND< 318	Fluorene	ND< 318
1,3-Dichlorobenzene	ND< 318	Hexachlorocyclopentadiene	ND< 318
1,4-Dichlorobenzene	ND< 318	2-Nitroaniline	ND< 795
1,2-Dichlorobenzene	ND< 318	3-Nitroaniline	ND< 795
Hexachloroethane	ND< 318	4-Nitroaniline	ND< 795
2-Methylphenol	ND< 318	4-Nitrophenol	ND< 795
4-Methylphenol	ND< 318	2,4,6-Trichlorophenol	ND< 318
N-Nitrosodimethylamine	ND< 318	2,4,5-Trichlorophenol	ND< 795
N-Nitroso-di-n-propylamine	ND< 318	4-Bromophenyl phenyl ether	ND< 318
Phenol	ND< 318	Di-n-butyl phthalate	ND< 318
Benzoic acid	ND< 795	4,6-Dinitro-2-methylphenol	ND< 795
Bis (2-chloroethoxy) methane	ND< 318	Fluoranthene	ND< 318
4-Chloroaniline	ND< 318	Hexachlorobenzene	ND< 318
4-Chloro-3-methylphenol	ND< 318	N-Nitrosodiphenylamine	ND< 318
2,4-Dichlorophenol	ND< 318	Pentachlorophenol	ND< 795
2,6-Dichlorophenol	ND< 318	Anthracene	ND< 318
2,4-Dimethylphenol	ND< 318	Phenanthrene	ND< 318
Hexachlorobutadiene	ND< 318	Benzidine	ND< 795
Isophorone	ND< 318	Benzo (a) anthracene	ND< 318
2-Methylnapthalene	ND< 318	Bis (2-ethylhexyl) phthalate	ND< 318
Naphthalene	ND< 318	Butylbenzylphthalate	ND< 318
Nitrobenzene	ND< 318	Chrysene	ND< 318
2-Nitrophenol	ND< 318	3,3'-Dichlorobenzidine	ND< 318
1,2,4-Trichlorobenzene	ND< 318	Pyrene	ND< 318
2-Chloronaphthalene	ND< 318	Benzo (b) fluoranthene	ND< 318
Acenaphthene	ND< 318	Benzo (k) fluoranthene	ND< 318
Acenapthylene	ND< 318	Benzo (g,h,i) perylene	ND< 318
4-Chlorophenyl phenyl ether	ND< 318	Benzo (a) pyrene	ND< 318
Dibenzofuran	ND< 318	Dibenz (a,h) anthracene	ND< 318
Diethyl phthalate	ND< 318	Di-n-octylphthalate	ND< 318
Dimethyl phthalate	ND< 795	Indeno (1,2,3-cd) pyrene	ND< 318

Analytical Method: EPA 8270 **ELAP ID No: 10958**

Comments: ND denotes Not Detected

Approved By: ______________
Laboratory Director

PARADIGM
Environmental Services, Inc. 179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: LaBella

Client Job Site: Port of Rochester

Client Job No.: 99150-270

Field Location: Test Pit #10 @ 3'
Field ID No.: N/A

Lab Project No.: 00-0532
Lab Sample No.: 2250

Sample Type: Soil

Date Sampled: 02/29/2000
Date Received: 03/16/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic*	03/22/2000	SW846 7060	51.1
Barium	03/20/2000	SW846 6010	22.2
Cadmium	03/20/2000	SW846 6010	0.604
Chromium	03/20/2000	SW846 6010	3.72
Lead	03/20/2000	SW846 6010	5.33
Mercury*	03/23/2000	SW846 7471	0.240
Selenium*	03/21/2000	SW846 7740	<5.03
Silver	03/20/2000	SW846 6010	<2.01

*ELAP ID No.:10958
ELAP ID No.:10709

Comments:

Approved By: ______________________
Laboratory Director

File ID: 000532p7

PARADIGM
Environmental Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: LaBella

Client Job Site: Port of Rochester

Client Job No.: 99150-270

Field Location: Test Pit #17 @ 8'
Field ID No.: N/A

Lab Project No.: 00-0532
Lab Sample No.: 2254

Sample Type: TCLP Extract

Date Sampled: 02/29/2000
Date Received: 03/16/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/L)	Regulatory Limit (mg/L)
TCLP Metal Series				
Arsenic	03/21/2000	EPA 6010	<0.025	5.0
Barium	03/21/2000	EPA 6010	0.400	100.0
Cadmium	03/21/2000	EPA 6010	<0.025	1.0
Chromium	03/21/2000	EPA 6010	<0.025	5.0
Lead	03/21/2000	EPA 6010	<0.025	5.0
Mercury*	03/21/2000	EPA 7470	<0.0020	0.2
Selenium	03/21/2000	EPA 6010	<0.025	1.0
Silver	03/21/2000	EPA 6010	<0.100	5.0

*ELAP ID No.: 10958
ELAP ID No.: 10709

Comments:

Approved By: ____________________
Laboratory Director

File ID: 000532t8

PARADIGM
Environmental Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: LaBella
Client Job Site: Port of Rochester
Client Job No.: 99150-270
Field Location: Test Pit #10 @ 13'
Field ID No.: N/A

Lab Project No.: 00-0532
Lab Sample No.: 2253
Sample Type: TCLP Extract
Date Sampled: 02/28/2000
Date Received: 03/16/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/L)	Regulatory Limit (mg/L)
TCLP Metal Series				
Arsenic	03/21/2000	EPA 6010	<0.025	5.0
Barium	03/21/2000	EPA 6010	0.200	100.0
Cadmium	03/21/2000	EPA 6010	<0.025	1.0
Chromium	03/21/2000	EPA 6010	<0.025	5.0
Lead	03/21/2000	EPA 6010	<0.025	5.0
Mercury*	03/21/2000	EPA 7470	<0.0020	0.2
Selenium	03/21/2000	EPA 6010	<0.025	1.0
Silver	03/21/2000	EPA 6010	<0.100	5.0

*ELAP ID No.: 10958
ELAP ID No.: 10709

Comments:

Approved By: ______________________
Laboratory Director

File ID: 000532t7

PARADIGM
Environmental
Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: LaBella

Client Job Site: Port of Rochester

Client Job No.: 99150-270

Field Location: Test Pit #10@ 5' (cinders)
Field ID No.: N/A

Lab Project No.: 00-0532
Lab Sample No.: 2252

Sample Type: TCLP Extract

Date Sampled: 02/28/2000
Date Received: 03/16/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/L)	Regulatory Limit (mg/L)
TCLP Metal Series				
Arsenic	03/21/2000	EPA 6010	0.050	5.0
Barium	03/21/2000	EPA 6010	0.200	100.0
Cadmium	03/21/2000	EPA 6010	<0.025	1.0
Chromium	03/21/2000	EPA 6010	<0.025	5.0
Lead	03/21/2000	EPA 6010	<0.025	5.0
Mercury*	03/21/2000	EPA 7470	<0.0020	0.2
Selenium	03/21/2000	EPA 6010	<0.025	1.0
Silver	03/21/2000	EPA 6010	<0.100	5.0

*ELAP ID No.: 10958
ELAP ID No.: 10709

Comments:

Approved By: ______________________
Laboratory Director

File ID: 000532t6

PARADIGM
Environmental Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: LaBella

Client Job Site: Port of Rochester

Client Job No.: 99150 Phase 270

Field Location: HA 121 0'-2'
Field ID No.: N/A

Lab Project No.: 00-1265
Lab Sample No.: 4593

Sample Type: Soil

Date Sampled: 05/30/2000
Date Received: 06/16/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/kg)
Arsenic	06/20/2000	SW846 6010	5.76
Barium	06/20/2000	SW846 6010	42.8
Cadmium	06/20/2000	SW846 6010	<1.01
Chromium	06/20/2000	SW846 6010	12.5
Lead	06/20/2000	SW846 6010	15.6
Mercury	06/22/2000	SW846 7471	<0.098
Selenium	06/20/2000	SW846 6010	<0.522
Silver	06/20/2000	SW846 6010	1.25

ELAP ID No.:10958

Comments:

Approved By: ____________________
Laboratory Director

File ID: 001265p2

PARADIGM
Environmental
Services, Inc.
179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Laboratory Analysis For Polychlorinated Biphenyls in Water

Client:	LaBella Associates, P.C.	**Lab Project No:**	00-1301
		Lab Sample No:	4682
Client Job Site:	Port of Rochester	**Sample Type:**	Water
Client Job No.:	N/A	**Date Sampled:**	06/21/00
Field Location:	MW-3	**Date Received:**	06/21/00
Field ID No.:	N/A	**Date Analyzed:**	06/27/00

Polychlorinated Biphenyl	Result (ug/L)	Reporting Limit (ug/L)
PCB 1016	ND	1.00
PCB 1221	ND	1.00
PCB 1232	ND	1.00
PCB 1242	ND	1.00
PCB 1248	ND	1.00
PCB 1254	ND	1.00
PCB 1260	ND	1.00

Analytical Method: EPA 8082 ELAP ID: 10958

Comments: ND denotes Not Detected.

Approved By: ______________________
For: Laboratory Director

File ID: 001301P2.XLS

PARADIGM
Environmental Services, Inc. 179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716- 647-3311

Client: LaBella Associates

Client Job Site: Port of Rochester

Client Job No.: N/A

Field Location: MW-3
Field ID No.: N/A

Lab Project No.: 00-1301
Lab Sample No.: 4682

Sample Type: Water

Date Sampled: 06/21/2000
Date Received: 06/21/2000

Parameter	Date Analyzed	Analytical Method	Result (mg/L)
Arsenic	06/26/2000	EPA 7060	0.019
Barium	06/26/2000	EPA 6010	0.233
Cadmium	06/26/2000	EPA 6010	<0.005
Chromium	06/26/2000	EPA 6010	0.036
Lead	06/26/2000	EPA 6010	0.029
Mercury	06/28/2000	EPA 7470	<0.0002
Selenium	06/26/2000	EPA 7740	<0.005
Silver	06/26/2000	EPA 6010	<0.010

ELAP ID No.:10958

Comments:

Approved By: ______________________
For: Laboratory Director

File ID: 001301p3

PARADIGM
ENVIRONMENTAL
SERVICES, INC.
179 Lake Avenue, Rochester, New York 14608 (716) 647-2530 FAX (716) 647-3311

Semi-Volatile Analysis Report For Water (STARS List)

Client: LaBella Associates, P.C.

Client Job Site: Port of Rochester

Client Job No.: N/A

Field Location: MW-3

Field ID No.: N/A

Lab Project No.: 00-1301

Lab Sample No.: 4682

Sample Type: Water

Date Sampled: 06/21/00

Date Received: 06/21/00

Date Analyzed: 06/27/00

COMPOUND	RESULT (ug/L)
Naphthalene	ND< 10.0
Acenaphthene	ND< 10.0
Fluorene	ND< 10.0
Fluoranthene	ND< 10.0
Anthracene	ND< 10.0
Phenanthrene	ND< 10.0
Benzo (a) anthracene	ND< 10.0
Chrysene	ND< 10.0
Pyrene	ND< 10.0
Benzo (b) fluoranthene	ND< 10.0
Benzo (k) fluoranthene	ND< 10.0
Benzo (g,h,i) perylene	ND< 10.0
Benzo (a) pyrene	ND< 10.0
Dibenz (a,h) anthracene	ND< 10.0
Indeno (1,2,3-cd) pyrene	ND< 10.0

EPA Analytical Method: 8270 NYS ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By: ______________________
For: Laboratory Director

001301S3.XLS

PARADIGM
ENVIRONMENTAL
ERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Laboratory Analysis Report For Non-Potable Water

Client:	LaBella Associates, P.C.	**Lab Project No.:**	00-1301
Client Job Site:	Port of Rochester	**Lab Sample No.:**	4682
Client Job No.:	N/A	**Sample Type:**	Water
Field Location:	MW-3	**Date Sampled:**	06/21/00
		Date Received:	06/21/00
Field ID No.:	N/A	**Date Analyzed:**	06/24/00

VOLATILE HALOCARBONS	RESULTS (ug/L)	VOLATILE AROMATICS	RESULTS (ug/L)
Bromodichloromethane	ND< 2.00	Benzene	ND< 0.700
Bromomethane	ND< 2.00	Chlorobenzene	ND< 2.00
Bromoform	ND< 2.00	Ethylbenzene	ND< 2.00
Carbon tetrachloride	ND< 2.00	Toluene	ND< 2.00
Chloroethane	ND< 2.00	m,p - Xylene	ND< 2.00
Chloromethane	ND< 2.00	o - Xylene	ND< 2.00
2-Chloroethyl vinyl ether	ND< 2.00	Styrene	ND< 2.00
Chloroform	ND< 2.00		
Dibromochloromethane	ND< 2.00		
1,1-Dichloroethane	ND< 2.00		
1,2-Dichloroethane	ND< 2.00		
1,1-Dichloroethene	ND< 2.00		
trans-1,2-Dichloroethene	ND< 2.00		
1,2-Dichloropropane	ND< 2.00		
cis-1,3-Dichloropropene	ND< 2.00	**Ketones**	
trans-1,3-Dichloropropene	ND< 2.00	Acetone	ND< 10.0
Methylene chloride	ND< 5.00	Vinyl acetate	ND< 5.00
1,1,2,2-Tetrachloroethane	ND< 2.00	2-Butanone	ND< 5.00
Tetrachloroethene	ND< 2.00	4-Methyl-2-pentanone	ND< 5.00
1,1,1-Trichloroethane	ND< 2.00	2-Hexanone	ND< 5.00
1,1,2-Trichloroethane	ND< 2.00		
Trichloroethene	ND< 2.00	Carbon disulfide	ND< 2.00
Vinyl Chloride	ND< 2.00		

Analytical Method: EPA 8260 ELAP ID No.: 10958

Comments: ND denotes Not Detected

Approved By

For: Laboratory Director

PARADIGM
ENVIRONMENTAL
SERVICES, INC.

179 Lake Avenue Rochester, New York 14608 716-647-2530 FAX 716-647-3311

Volatile Aromatic Analysis Report For Non-Potable Water
(Additional EPA 8260 Compounds)

Client:	LaBella Associates, P.C.	**Lab Project No.:**	00-1301
		Lab Sample No.:	4682
Client Job Site:	Port of Rochester		
		Sample Type:	Water
Client Job No.:	N/A		
		Date Sampled:	06/21/00
Field Location:	MW-3	**Date Received:**	06/21/00
Field ID No.:	N/A	**Date Analyzed:**	06/24/00

VOLATILE AROMATICS	RESULTS (ug/L)
Methyl tert-Butyl Ether	ND< 2.00
Isopropylbenzene	ND< 2.00
n-Propylbenzene	ND< 2.00
1,3,5-Trimethylbenzene	ND< 2.00
tert-Butylbenzene	ND< 2.00
1,2,4-Trimethylbenzene	ND< 2.00
sec-Butylbenzene	ND< 2.00
p-Isopropyltoluene	ND< 2.00
n-Butylbenzene	ND< 2.00
Naphthalene	ND< 5.00

Analytical Method: EPA 8260

NYS ELAP ID No.: 10958

Comments: ND denotes not detected

Approved By:

For: Laboratory Director

001301V6.XLS

Appendix 6

Surfer® 8 Contours Used for Fill Material & Slag Volume Calculations

Grid Volume Computations
Slag Containing Regulated Solid Waste
A-1

Sun Jan 11 13:43:23 2009

Upper Surface (feet)

Grid File Name:	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\A-1SlagThNoWest.grd
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0
Z Maximum:	11.660322527057

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule:	111978.52563805
Simpson's Rule:	111954.63183051
Simpson's 3/8 Rule:	111961.09418603
Average:	111964.75055153

Cut & Fill Volumes

Positive Volume [Cut]:	111978.52563805
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	111978.52563805

Areas (square feet)

Planar Areas

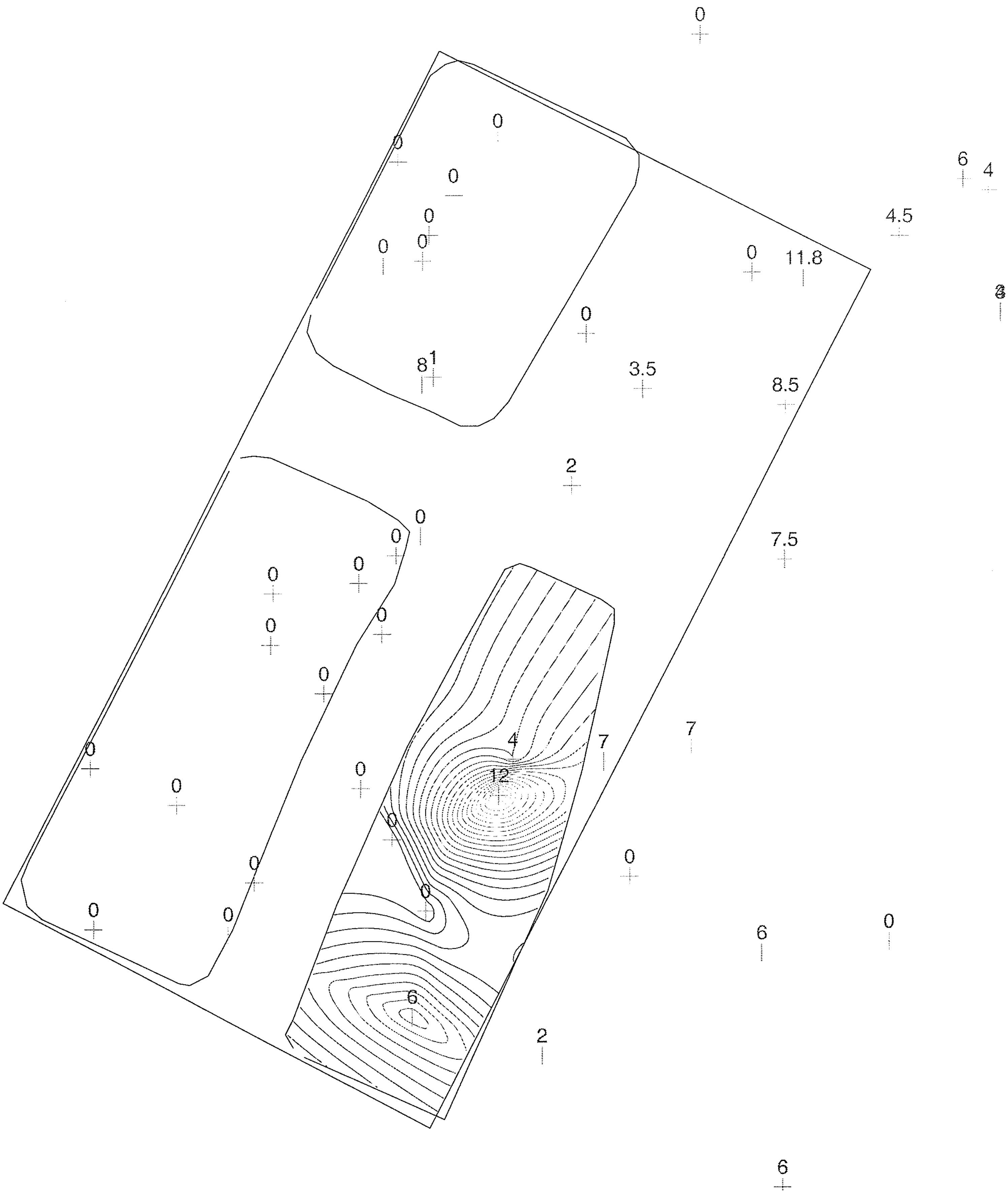
Positive Planar Area [Cut]:	31190.224427806
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1489694.3487139
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	31338.642109874
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeSlagA-1.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Slag Containing Regulated Solid Waste
A-2

Sun Jan 11 13:51:55 2009

Upper Surface (feet)

Grid File Name:	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\A-2SlagThNoWest.grd
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0
Z Maximum:	2.5489807409215

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor:	1

Total Volumes by:

Trapezoidal Rule:	4464.4123728147
Simpson's Rule:	4457.0936423374
Simpson's 3/8 Rule:	4464.0740376202
Average:	4461.86001759077

Cut & Fill Volumes

Positive Volume [Cut]:	4464.4123728147
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	4464.4123728147

Areas (square feet)

Planar Areas

Positive Planar Area [Cut]:	30652.725211191
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1490231.8479305
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	30660.140299888
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeSlagA-2.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS

S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Slag Containing Regulated Solid Waste
A-3

Sun Jan 11 13:57:19 2009

Upper Surface (feet)

Grid File Name:	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\A-3SlagThNoWest.grd
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0
Z Maximum:	7.9395567280995

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor:	1

Total Volumes by:

Trapezoidal Rule:	12541.648717604
Simpson's Rule:	12544.956400499
Simpson's 3/8 Rule:	12536.00489051
Average:	12540.870002871

Cut & Fill Volumes

Positive Volume [Cut]:	12541.648717604
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	12541.648717604

Areas (square feet)

Planar Areas

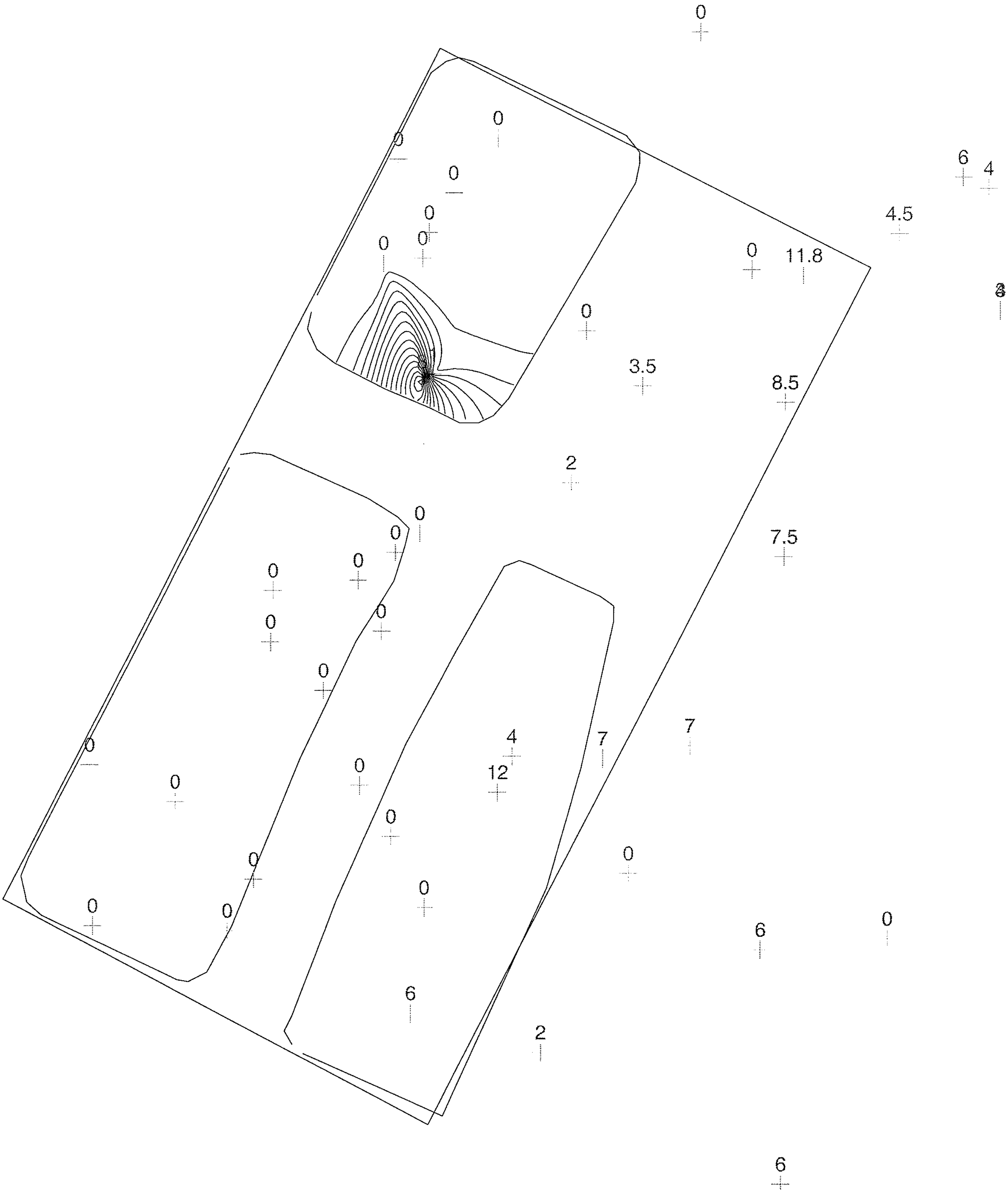
Positive Planar Area [Cut]:	23378.161949952
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1497506.4111918
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	23446.006521404
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeSlagA-3.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Non-Slag Containing Regulated Solid Waste
A-1

Sun Jan 11 13:31:30 2009

Upper Surface (feet)

Grid File Name:	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\A-1FilThNoWest.grd
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0.020718599432498
Z Maximum:	11.625933196666

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor: 1

Total Volumes by:

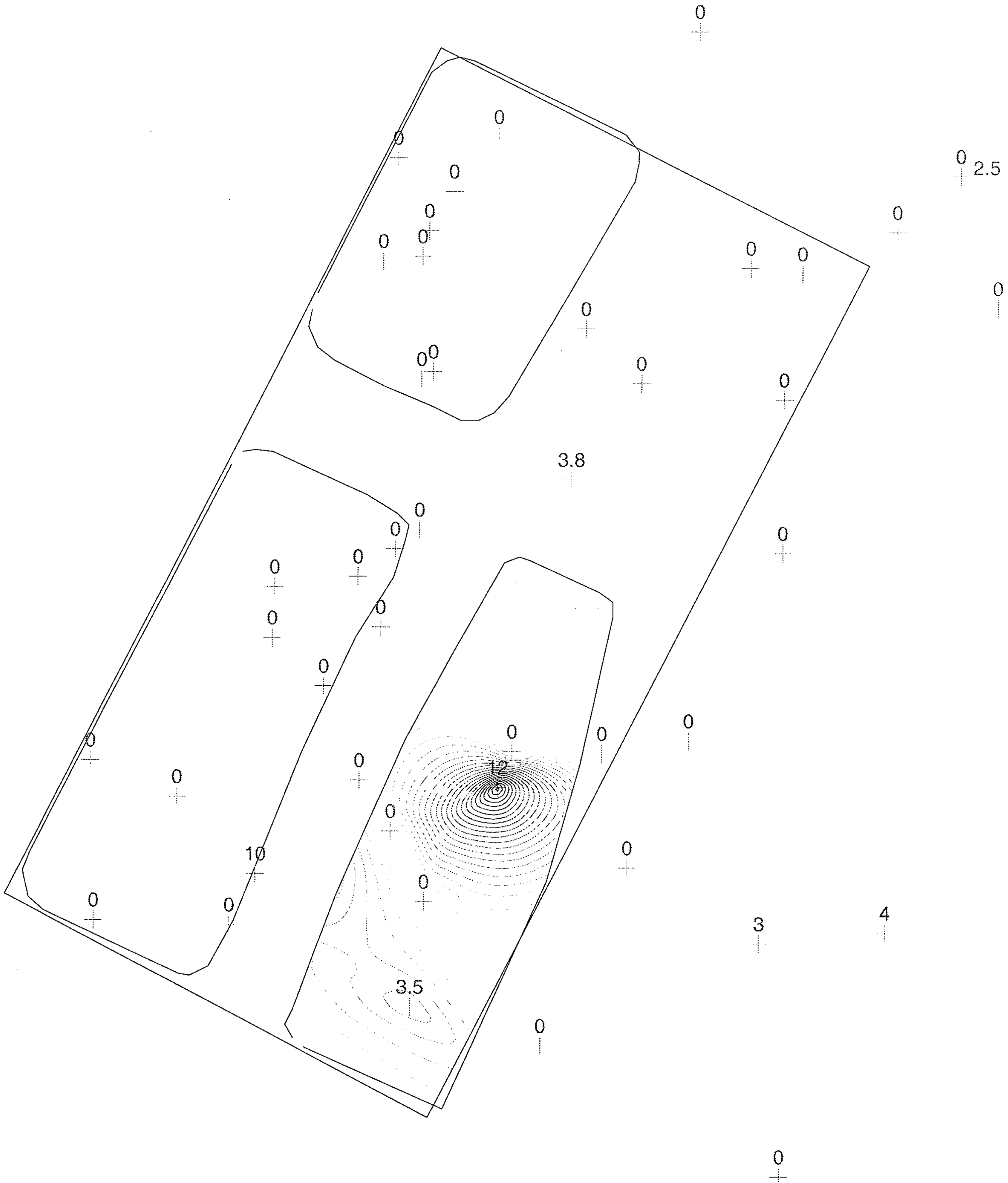
Trapezoidal Rule:	69062.595137951
Simpson's Rule:	69050.166104914
Simpson's 3/8 Rule:	69052.515261066
Average:	69055.09217

Cut & Fill Volumes

Positive Volume [Cut]:	69062.595137951
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	69062.595137951

Areas (square feet)

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Planar Areas

Positive Planar Area [Cut]:	31190.224427806
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1489694.3487139
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	31372.448056944
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeFillA-1.rtf

Grid Volume Computations
Non-Slag Containing Regulated Solid Waste
A-2

Sun Jan 11 13:36:32 2009

Upper Surface (feet)

Grid File Name: S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\A-2FilThNoWest.grd
Grid Size: 500 rows x 500 columns

X Minimum: 1407551.671
X Maximum: 1408784.757
X Spacing: 2.4711142284567

Y Minimum: 1187395.114
Y Maximum: 1188628.511
Y Spacing: 2.4717374749497

Z Minimum: 0
Z Maximum: 9.2791114635804

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule: 15400.43791856
Simpson's Rule: 15437.633641649
Simpson's 3/8 Rule: 15399.767656915

Average: 15412.61307

Cut & Fill Volumes

Positive Volume [Cut]: 15400.43791856
Negative Volume [Fill]: 0
Net Volume [Cut-Fill]: 15400.43791856

Areas (square feet)

Planar Areas

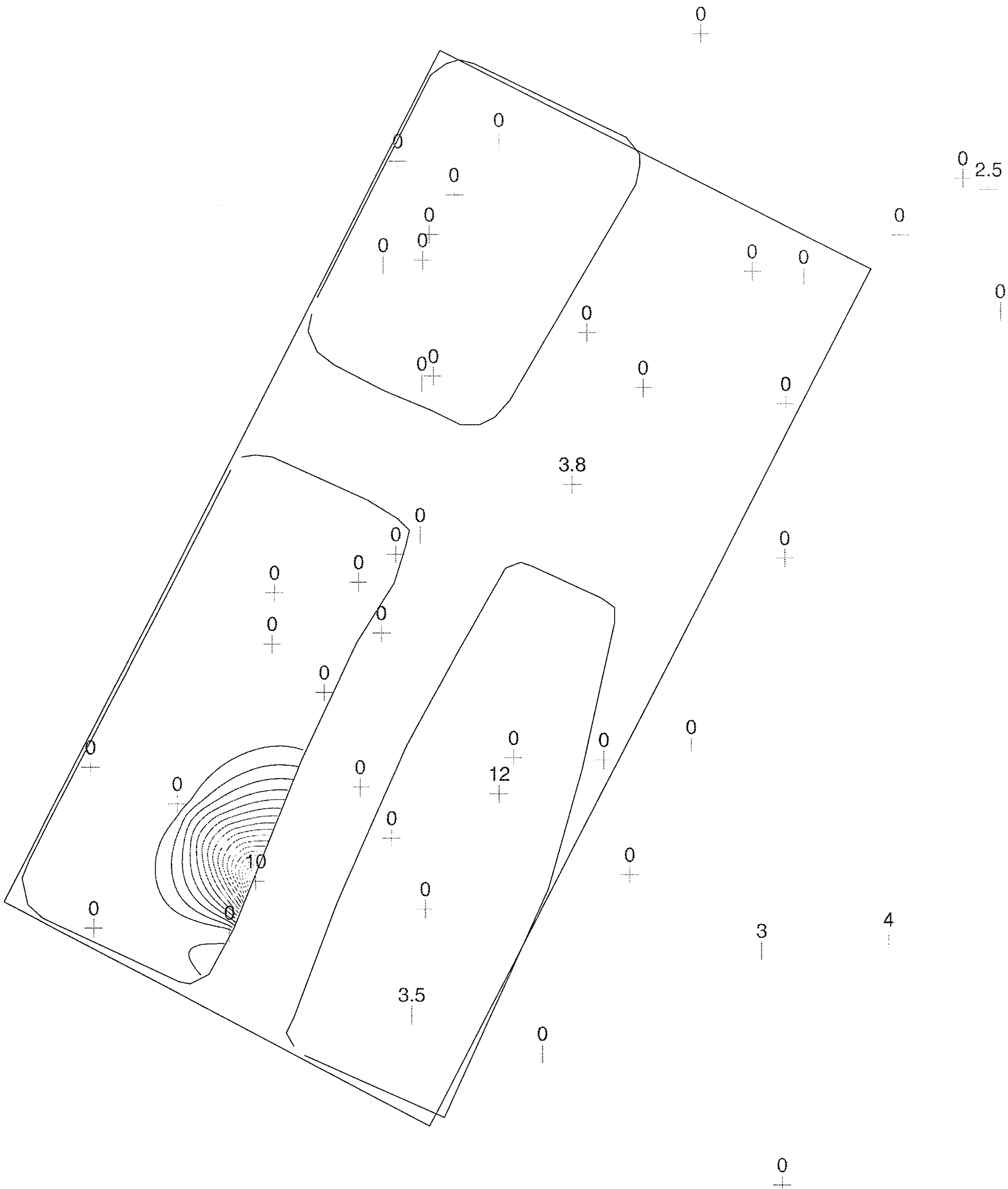
Positive Planar Area [Cut]:	30652.725211191
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1490231.8479305
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	30702.348262645
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeFillA-2.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Non-Slag Containing Regulated Solid Waste
A-3

Sun Jan 11 13:39:58 2009

Upper Surface (feet)

Grid File Name: S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\A-3FilThNoWest.grd
Grid Size: 500 rows x 500 columns

X Minimum: 1407551.671
X Maximum: 1408784.757
X Spacing: 2.4711142284567

Y Minimum: 1187395.114
Y Maximum: 1188628.511
Y Spacing: 2.4717374749497

Z Minimum: 0
Z Maximum: 1.1304307947155

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule: 1047.467310027
Simpson's Rule: 1049.7261253627
Simpson's 3/8 Rule: 1047.4942785179

Average: 1048.229238

Cut & Fill Volumes

Positive Volume [Cut]: 1047.467310027
Negative Volume [Fill]: 0
Net Volume [Cut-Fill]: 1047.467310027

Areas (square feet)

Planar Areas

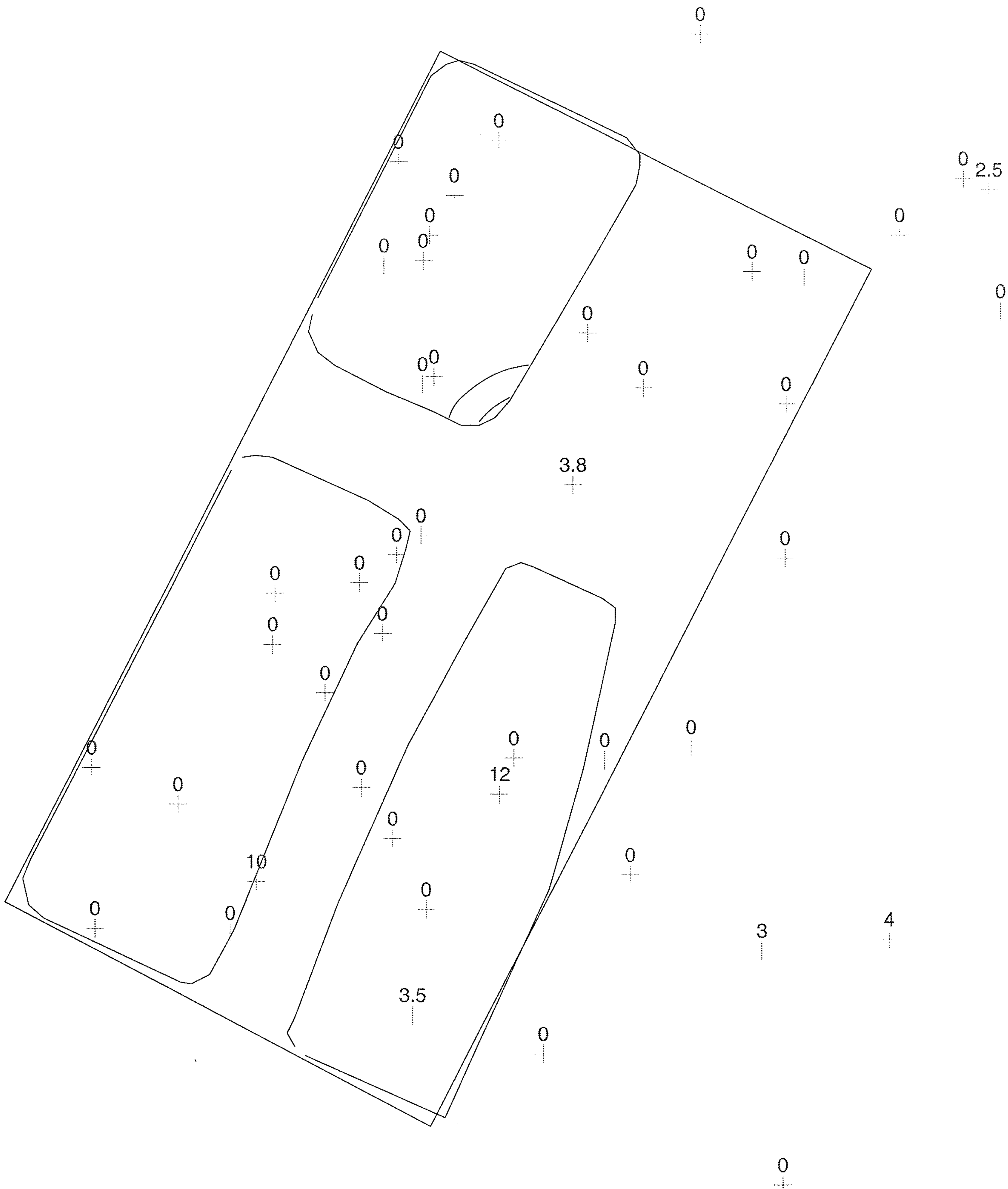
Positive Planar Area [Cut]:	23378.161949952
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1497506.4111918
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	23378.887269883
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeFillA-3.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Non-Slag Containing Regulated Solid Waste Site

Sun Jan 11 13:13:01 2009

Upper Surface (feet)

Grid File Name:	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment
\SITEFilThNoWest.grd	
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0
Z Maximum:	11.625933196666

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic Feet)

Z Scale Factor:	1

Total Volumes by:

Trapezoidal Rule:	149242.09606577
Simpson's Rule:	149257.55848815
Simpson's 3/8 Rule:	149244.61531456

Cut & Fill Volumes

Positive Volume [Cut]:	149242.09606577
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	149242.09606577

Areas (square feet)

Planar Areas

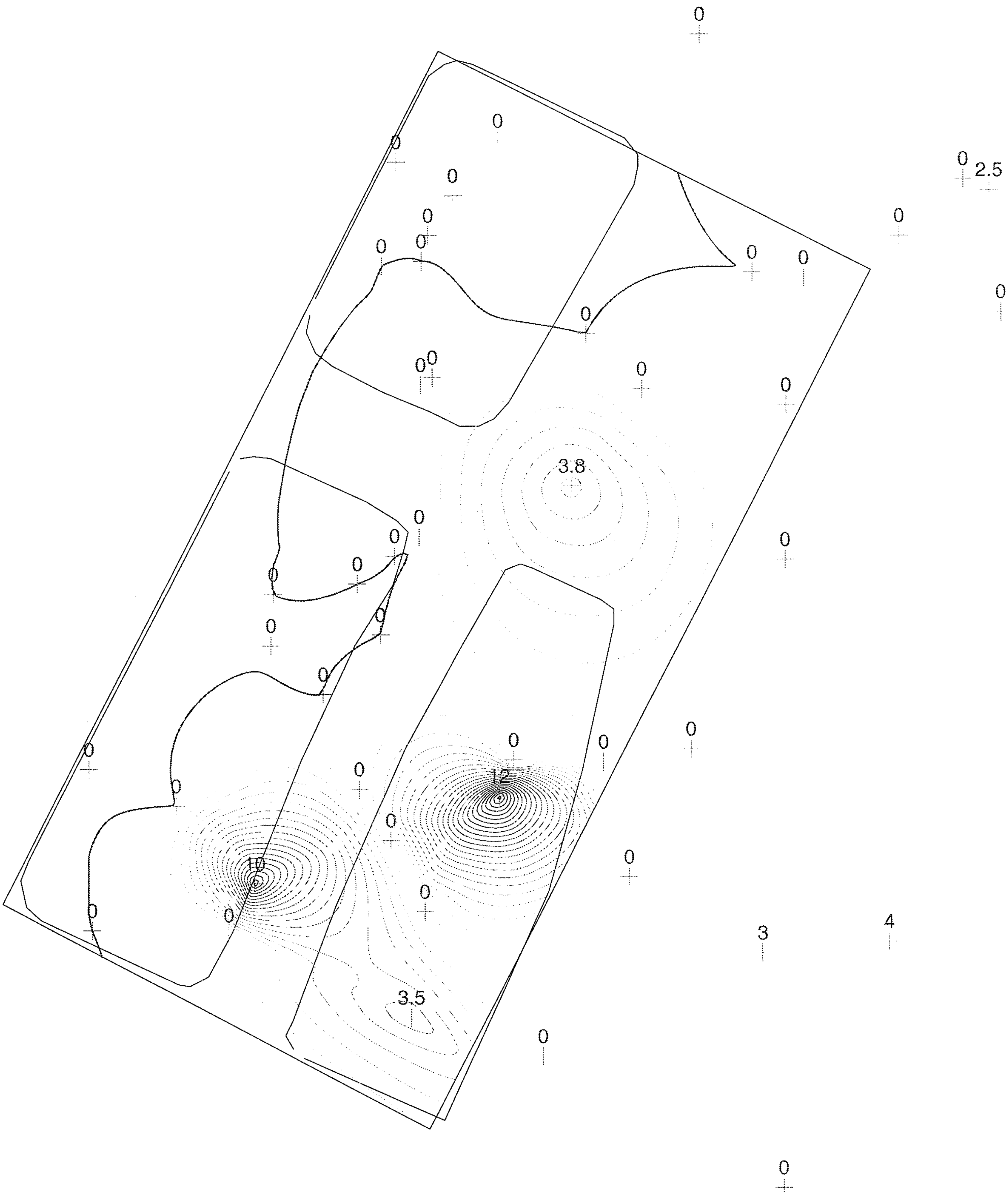
Positive Planar Area [Cut]:	154094.30666345
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1366790.2664783
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	154406.0626891
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeFillSite.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Slag Containing Regulated Solid Waste Site

Sun Jan 11 13:18:26 2009

Upper Surface (feet)

Grid File Name: \SITESlagThNoWest.grd	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0
Z Maximum:	11.66824786688

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule:	304342.13846352
Simpson's Rule:	304286.18038856
Simpson's 3/8 Rule:	304327.74451945

Cut & Fill Volumes

Positive Volume [Cut]:	304342.13846352
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	304342.13846352

Areas (square feet)

Planar Areas

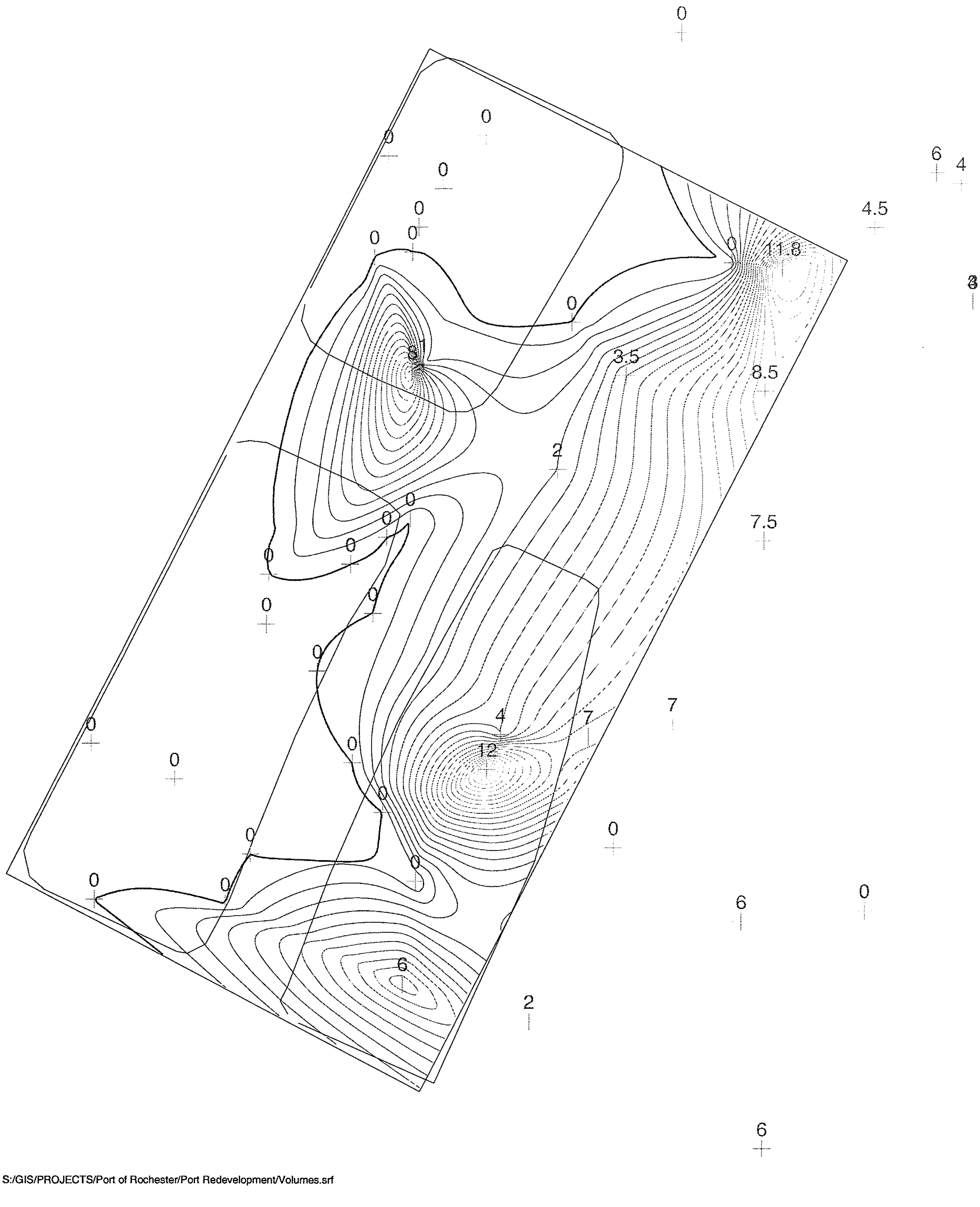
Positive Planar Area [Cut]:	154094.30666345
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1366790.2664783
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	154494.62466341
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeSlagSite.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Volume Computations
Non-Slag Containing and Slag Containing Regulated Solid Waste Site

Sun Jan 11 13:20:47 2009

Upper Surface (feet)

Grid File Name:	S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment \SITEFill&SlagThNoWest.grd
Grid Size:	500 rows x 500 columns
X Minimum:	1407551.671
X Maximum:	1408784.757
X Spacing:	2.4711142284567
Y Minimum:	1187395.114
Y Maximum:	1188628.511
Y Spacing:	2.4717374749497
Z Minimum:	0
Z Maximum:	23.286255723724

Lower Surface (feet)

Level Surface defined by Z = 0

Volumes (cubic feet)

Z Scale Factor:	1

Total Volumes by:

Trapezoidal Rule:	453584.23452929
Simpson's Rule:	453543.7388767
Simpson's 3/8 Rule:	453572.359834

Cut & Fill Volumes

Positive Volume [Cut]:	453584.23452929
Negative Volume [Fill]:	0
Net Volume [Cut-Fill]:	453584.23452929

Areas (square feet)

Planar Areas

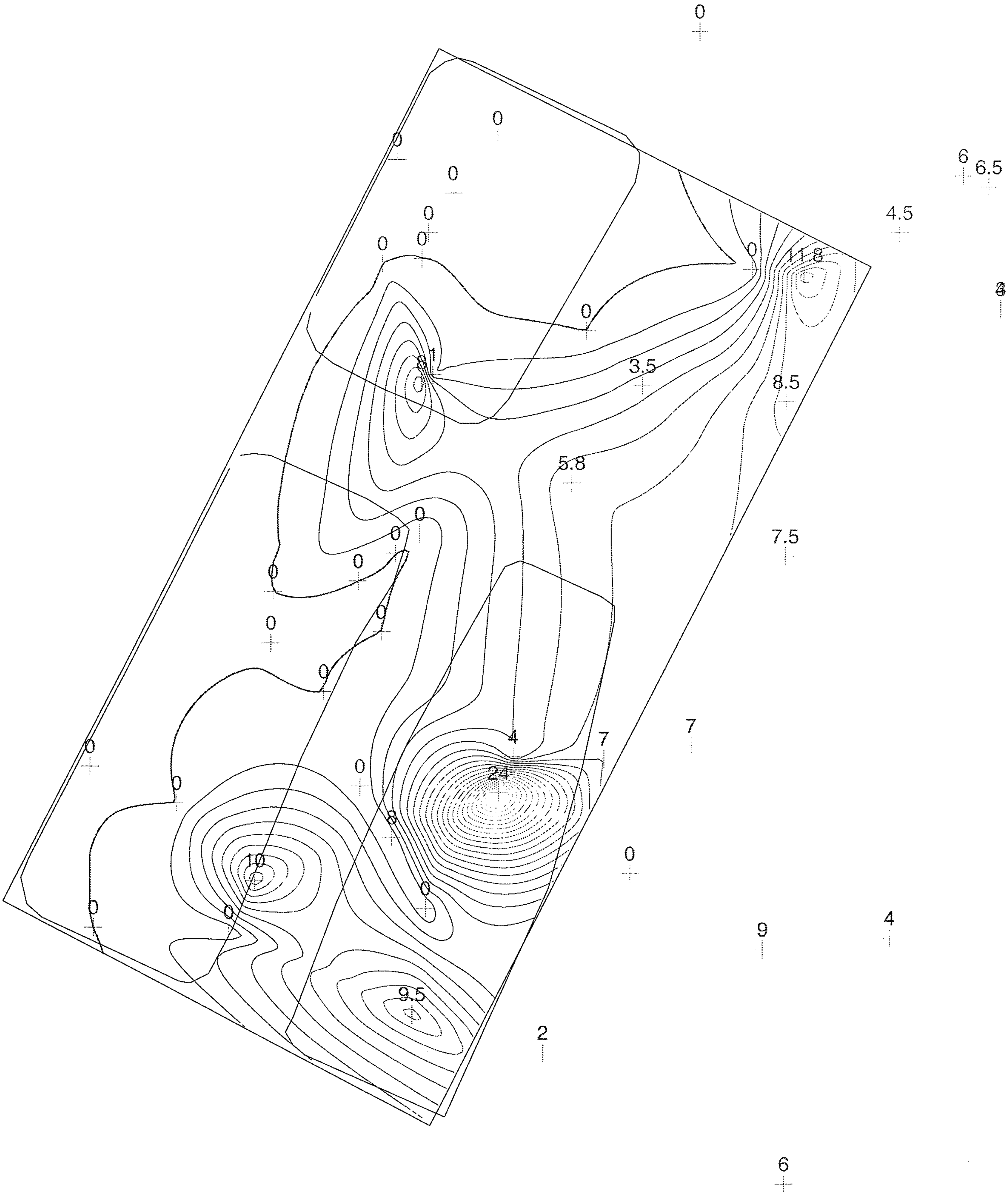
Positive Planar Area [Cut]:	154094.30666345
Negative Planar Area [Fill]:	0
Blanked Planar Area:	1366790.2664783
Total Planar Area:	1520884.5731417

Surface Areas

Positive Surface Area [Cut]:	155066.4806373
Negative Surface Area [Fill]:	0

S:\GIS\PROJECTS\Port of Rochester\Port Redevelopment\VolumeFill&SlagSite.rtf

CONTOURS USED FOR FILL VOLUME CALCULATIONS



S:/GIS/PROJECTS/Port of Rochester/Port Redevelopment/Volumes.srf

Grid Calculus References

Akai, Terrence J., (1994), *Applied Numerical Methods for Engineers*, John Wiley and Sons, Inc., New York, 410 pp.

Bras, R. L., and I. Rodriguez-Iturbe, (1985), *Random Functions and Hydrology*, Addison-Wesley, Reading, Massachusetts, 559 pp.

Mitasova, Helena and Jaroslav Hofierka, (1993), Interpolation by Regularized Spline with Tension: II. Application to Terrain Modeling and Surface Geometry Analysis, *Mathematical Geology*, v. 25, no. 6, p. 657-669.

Moore, I. D., R. B. Grayson, and A. R. Ladson, (1991), Digital Terrain Modeling: A Review of Hydrological, Geomorphological and Biological Applications, *Hydro. Proc.*, v. 5, no. 1, p. 3-30.

Moore, I. D., A. Lewis, and J. C. Gallant, (1993), Terrain Attributes: Estimation Methods and Scale Effects, Modeling *Change in Environmental Systems*, A.J. Jakeman et al. editors, John Wiley and Sons, New York.

Press, William H., Saul A. Teukolsky, William T. Vetterling, and Brian P. Flannery, (1992), *Numerical Recipes in C: The Art of Scientific Computing*, Second Edition, Cambridge University Press, New York, 994 pp.

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Schwartz, Abraham, (1974), *Calculus and Analytic Geometry*, 3rd edition, Holt, Rinehart, and Winston, New York, 1140 pp.

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Chapter 19

Volumes, Areas, Cross Sections, and Residuals

Introduction to Volumes, Areas, Cross Sections, and Residuals

The procedures described in this chapter are used to provide more information about the data contained in grid files. The topics discussed in this chapter include volumes, cross sections (slice), and residuals.

The **Grid | Volume** command calculates the volumes and areas for the surfaces defined by grid files or a grid file and a horizontal plane. The **Grid | Volume** computations contains the following information:

- Net volume between two grid files
- Net volume between a grid file and a horizontal plane
- Cut and fill volumes
- Surface area of a grid file above and below a specified level
- Planar area of a grid above and below a specified level

The **Grid | Slice** command outputs a data file that can be used to produce a cross section or profile line. The **Grid | Residuals** command calculates the difference between a grid and the original data. It is also used to calculate the Z value at a specified point.

Volumes and Areas

The **Grid | Volume** command is used to compute net volumes, cut and fill volumes, planar areas, and surface areas. The computation results are displayed in the grid volume report. The results can be saved as an ASCII text file, in Rich Text Format, or they can be copied to the clipboard.

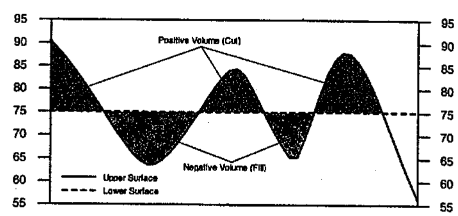
Volume calculations are performed on solids defined by an upper and lower surface. The upper and lower surfaces are defined by a grid file or a plane of constant Z. When two grid files are used, the grid files must have the same XY limits and the same number of rows and columns. The upper surface does not have to be above the lower surface at all points; the upper surface may be below the lower surfaces in some locations. Blanked regions on either the upper or the lower surface are excluded from consideration during the volume calculations.

Net Volume

The volume calculation determines the net volume between the upper and lower surface. The net volume is reported in the *Volumes* section of the grid volume report.

Cut and Fill Volumes

To visualize net volume, consider a construction site where the topography must be graded to a flat surface prior to the beginning of construction. The upper surface represents the current topography, and the lower surface represents the final graded site elevations. In some places, cut must be made into the current topography to remove earth to the level of the final site. In other areas, earth may be needed to fill in areas where the current topography is below the elevation of the final site. The net volume is the difference between all cuts and all fills. If the volume is positive, earth needs to be removed from the site to achieve the final level. If the volume is negative, earth needs to be hauled into the site to achieve the final planned grade for the site.



This is an example of a cross-section showing the relation between the upper and lower surfaces, and the cut and fill volumes. The lower surface is defined by Z = 75. The map is shown below.

Blanked regions on either the upper or lower surface are excluded from consideration during the cut and fill calculations.

Volume Calculations

Three methods are used to determine volumes: Trapezoidal Rule, Simpson's Rule, and Simpson's 3/8 Rule. The difference in the volume calculations by the three different methods measures the accuracy of the volume calculations. If the three volume calculations are reasonably close together, the true volume is close to these values. If the three values differ somewhat, a new denser grid file should be used before performing the volume calculations again. The net volume can be reported as the average of the three values.

Mathematically, the volume under a function $f(x, y)$ is defined by a double integral

$$\text{Volume} = \int_{x_{min}}^{x_{max}} \int_{y_{min}}^{y_{max}} f(x, y)\, dx\, dy$$

In Surfer, this is computed by first integrating over X (the columns) to get the areas under the individual rows, and then integrating over Y (the rows) to get the final volume. This approach is explained in detail in Press, et al., 1988, Section [4.6].

Surfer approximates the necessary one-dimensional integrals using three classical numerical integration algorithms: extended trapezoidal rule, extended Simpson's rule, and extended Simpson's 3/8 rule; see Press et al., 1988, Section [4.1]. In the following formula, Δx represents the grid column spacing, Δy represents the grid row spacing, and $G_{i,j}$ represents the grid node value in row *i* and column *j*.

Extended Trapezoidal Rule

The pattern of the coefficients is {1,2,2,2,...,2,2,1}:

$$A_i = \frac{\Delta x}{2}\left[G_{i,1} + 2G_{i,2} + 2G_{i,3} \cdots + 2G_{i,nCol-1} + G_{i,nCol}\right]$$

$$\text{Volume} \approx \frac{\Delta y}{2}\left[A_1 + 2A_2 + 2A_3 + \cdots + 2A_{nCol-1} + A_{nCol}\right]$$

Extended Simpson's Rule

The pattern of the coefficients is {1,4,2,4,2,4,2,...,4,2,1}:

$$A_i = \frac{\Delta x}{3}\left[G_{i,1} + 4G_{i,2} + 2G_{i,3} + 4G_{i,4} + \cdots + 2G_{i,nCol-1} + G_{i,nCol}\right]$$

$$\text{Volume} \approx \frac{\Delta y}{3}\left[A_1 + 4A_2 + 2A_3 + 4A_3 + \cdots + 2A_{nCol-1} + A_{nCol}\right]$$

Extended Simpson's 3/8 Rule

The pattern of the coefficients is {1,3,3,2,3,3,2,...,3,3,2,1}:

$$A_i = \frac{3\Delta x}{8}\left[G_{i,1} + 3G_{i,2} + 3G_{i,3} + 2G_{i,4} + \cdots + 2G_{i,nCol-1} + G_{i,nCol}\right]$$

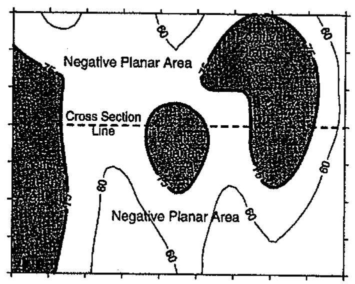
$$\text{Volume} \approx \frac{3\Delta y}{8}\left[A_1 + 3A_2 + 3A_3 + 2A_3 + \cdots + 2A_{nCol-1} + A_{nCol}\right]$$

Volume results are provided in cubic units based on the units of the input grid file. For a grid with XYZ units in feet, the units for the results are: Net Volume = (feet * feet * feet)

Blanked regions on either the upper or the lower surface are excluded from consideration during the volume calculations.

Planar Area Calculations

Planar area is computed by projecting the cut and fill portions of the surface onto a plane and calculating the area of the projection. *Positive Planar Area* represents the projection of the cut (map areas where the upper surface is above the lower surface) onto a horizontal plane. *Negative Planar Area* represents the projection of the fill (map areas where the upper surface is below the lower surface) onto a horizontal plane.



This is a contour map showing the relation between positive and negative planar area on a map. The lower surface is defined by a plane where Z = 75.

Surface Area Calculations

The surface area is the actual area of the surface. *Positive Surface Area* corresponds to the area of the surface where the upper surface is above the lower surface. *Negative Surface Area* corresponds to the area of the surface where the upper surface is below the lower surface.

As an example, consider a grid file representing the bottom of a pond, with the water level at a Z value of zero. If Z = 0 is defined as the upper surface and the grid representing the pond bottom is defined as the lower surface, you can determine the surface area of the bottom of the pond. Suppose you want to drain the pond and line it with plastic. You need to know the area of the plastic necessary to line the pond bottom. In this case, the negative surface area represents the surface of the pond bottom. This would tell us precisely the amount of plastic necessary to line the pond bottom.

Volume Reference

Press, W.H., Flannery, B.P., Teukolsky, S.A., and Vetterling, W.T. (1988), *Numerical Recipes in C*, Cambridge University Press.

Calculating Volumes and Areas

Use the **Grid | Volume** command to calculate net volumes, cut and fill volumes, planar areas, and surface areas.

1. Click the **Grid | Volume** command.
2. In the **Open Grid** dialog, select the grid file to use in the volume and area calculations, and then click the *Open* button. This can be the grid file for either the upper or the lower surface.
3. The **Grid Volume** dialog is displayed with the specified grid file shown for both the upper and lower surface.
4. Specify the *Upper Surface* and *Lower Surface* parameters.

- The button displays information about the grid or DEM file used in the volume calculations. The information includes the grid size, the minimum and maximum XYZ values contained in the grid file, and statistics. If the grid file is large, click OK in the message box that appears to create a detailed grid report or click *Cancel* to create a shorter, less detailed grid report.
- The *Grid File* option is used to specify a grid to use as the upper or lower surface. To use the grid file for the surface, click the *Grid File* option. To change the grid file for either the upper or lower surface, click the *Grid File* option and then click the button to select another grid file.

Calculating the Volume of a Lake

To illustrate the capability of using the **Grid | Volume** command, consider the application of calculating the volume of water within a lake. This application requires that a grid file be created which defines the lake bottom. The other surface is defined as a horizontal planar surface that defines the water surface of the lake.

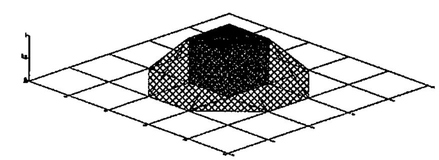
To calculate the volume of a lake:

1. Create the grid file for the lake. If the lake bottom is defined as the depth of the water, use negative Z values so that the lake appears as a basin rather than a hill. It is also recommended that data points be added beyond the limits of the lakeshore so that the surface is above the level of the lake in those areas.
2. Select **Grid | Volume**.
3. Select the grid file for the lake in the **Open Grid** dialog and then click the *Open* button.
4. In the **Grid Volume** dialog, click the *Grid File* option in the *Lower Surface* group.
5. In the *Upper Surface* group, click the *Constant* option. Enter the value for the lake surface into the Z = box. For example, if you are using depth in your grid file as a negative value, the Z = value for your horizontal (lake) surface should be zero.
6. Click OK in the **Grid Volume** dialog and the volume and area calculations are reported. The volume of the lake is reported as the *Positive Volume.*
7. To save the information, use the **File | Save As** command in the grid volume report window and specify a name and file extension.

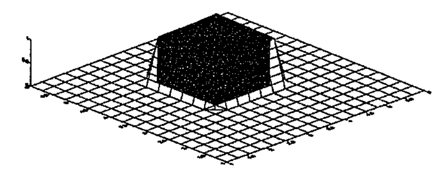
Volume of a Blanked Grid

Surfer can be used to calculate the volume between two grid surfaces or between a grid surface and a horizontal plane. The accuracy of the volume calculation increases as the number of grid lines in the grid file increases.

Consider the way **Surfer** calculates the volume of a cube that is 1 foot x 1 foot x 1 foot. **Surfer** cannot generate a surface that is a perfect cube since each XY coordinate can only have a single z value. A diagonal line is drawn from the top surface to the lower with a width of one grid unit. Using a grid with one-foot grid line spacing, the resulting surface looks like a pyramid with the top chopped off.



Volume error is increased in a cube with a course grid.



Volume error is reduced in a cube with a finer grid.

Appendix 7

Foundation Design, P.C.
Pre-Development Assessment

Foundation Design, P.C.

SOIL • BEDROCK • GROUNDWATER

1978 - 2008 30 YEARS OF EXCELLENCE Foundation Design, P.C.

PORT OF ROCHESTER DEVELOPMENT AREA 1
1000 NORTH RIVER STREET
CHARLOTTE, NEW YORK

PRE-DEVELOPMENT ASSESSMENT

Prepared for

LaBella Associates, P.C.

By: ______________________

Jeffrey D. Netzband, P.E.
Vice President

March 2009
3284.0

335 Colfax Street, Rochester, NY 14606 • Tel: 585 458-0824 • Fax: 585 458-3323 • foundationdesignpc.com

EXECUTIVE SUMMARY

The Port of Rochester Development Area 1 consists of parcel A-1, A-2, A-3, and A-4 that are bounded by Portside Drive to the south, Lake Avenue to the west, Corrigan Street to the north, and North River Street to the east. The purpose of this study is to assist in evaluating the site for future re-development. Proposed structures considered by this study include wood or steel-framed residential housing buildings or steel-framed office/commercial buildings, including a potential Hotel. We have assumed that the new structures would be less than 40 feet in height.

We offer the following major items for consideration during conceptual design:

- The site previously contained an old steel mill. Remnants of the old plant, including debris-laden fills, old foundations, floors slabs, and waste slag by-products lie on the parcel.
- The underlying native soils consist of a thin layer of glacial lake deposits, compact to very dense glacial till, then bedrock.
- An old marsh extends into the east side of the parcel. Deeper slag fills on Lots A-1 and A-4 were placed over the peaty marsh deposits.
- Due to the fill and organic soil conditions, we suspect that a deep foundation system and structural floor slab will be required on Lots A-1 and A-4.
- It is our opinion that building on Lots A-2 and A-3 can be supported using a spread footing foundation system. We suggest designing new structures with at-grade entrances off both North River Street and Lake Avenue; much of the unsuitable material would be removed as part of the lower level excavation work.
- Lots A-1, A-2, and A-4 contain debris laden fills and/or slag fills. This material is not suitable to support floors or foundations. Assess whether sorting, crushing, and reuse of the concrete, brick, and slag generated during the site grading and excavation work would be less expensive than off-site disposal.
- We identify this parcel as having a seismic site classification of D.

Foundation Design, P.C.
SOIL • BEDROCK • GROUNDWATER

Table of Contents

PORT OF ROCHESTER DEVELOPMENT AREA 1
1000 NORTH RIVER STREET
CHARLOTTE, NEW YORK

PRE-DEVELOPMENT ASSESSMENT

1.0 INTRODUCTION

This report outlines our Pre-Development Assessment for the Port of Rochester Development Area 1 at 1000 North River Street in Charlotte, New York. We base this evaluation on our review of historic U.S.G.S. topographic mapping; EDR/Sanborn Fire Insurance mapping; site photographs; old soil data made available from prior work on the parcel; new geophysical, test boring, and test pit exploration; laboratory test results; and consultation with the design team. We intend this report for use exclusively in assessing geotechnical cost impacts on developing the parcel and for the conceptual layout of new building(s) on the parcel. A more detailed Geotechnical Evaluation is required for specific building layouts, designs, and loadings. This study is limited to the geotechnical aspects of the site development; the geo-environmental aspects are being addressed by others.

LaBella Associates, P.C. retained Foundation Design, P.C. as part of their contract with the City of Rochester to provide the services outlined in our August 6, 2008 *Geotechnical Services Proposal, 3284.0.* Our services included reviewing the existing information; observing the test boring and test pit exploration; evaluating the results; and developing a list of geotechnical impacts that could be considered premium costs associated with developing this parcel as compared to a 'green' site. We agreed to submit this report outlining our findings, conclusions, and recommendations.

For this assessment, we discuss the subsurface conditions relative to the four designated development areas (A-1, A-2, A-3, and A-4. See Figure 2 for a plan detailing these areas). We considered the following types of construction. It has been assumed that the proposed new buildings will be less than 40 feet high.

Wood or Steel-framed Residential Housing
Steel-framed, Office/Commercial (including a potential Hotel)

Attached to the end of this text is an ASFE paper entitled *Important Information about Your Geotechnical Engineering Report* that you should read. It describes how we intend this report to be used and discusses risks and risk allocation. We will continue to work cooperatively with you and other interested parties to achieve win/win solutions.

2.0 SITE CONDITIONS/HISTORY

The Port of Rochester Development Area 1 lies at 1000 North River Street in Charlotte, New York. The parcel is roughly delineated by Portside Drive to the south, Lake Avenue to the west, and Corrigan Street to the north. (See the *Site Location Map – Figure No. 1.*) The three-acre parcel has been disturbed by various developments. *Figure No. 5 – Former Shoreline and Marsh Areas – Early 1800's* shows the approximate location of the shoreline and the extent that marsh land covered the parcel.

Attached in Appendix 1 are maps showing building footprints taken from 1892 and 1924 EDR/Sanborn Fire Insurance mapping. Following this page are historical photographs adapted from the Monroe County Public Library web page of some of the old structures shown on the plans. In the mid to late 1800's, a steel mill (Charlotte Iron Works) was constructed on Lots A-1 and A-2. Waste products (foundry sand and slag) generated from a blast furnace were used to expand the shoreline eastward. By 1924, the steel mill had been expanded into Lot A-3 and was under the operation of the Corrigan-McKinney Steel Company. Several rail spurs had been extended into Lots A-1 and A-2. The steel mill operations were terminated in the mid 1920's, and the buildings subsequently demolished. The 1950's and 1960's EDR/Sanborn Fire Insurance mapping lead us to believe that the parcel has been undeveloped ever since.

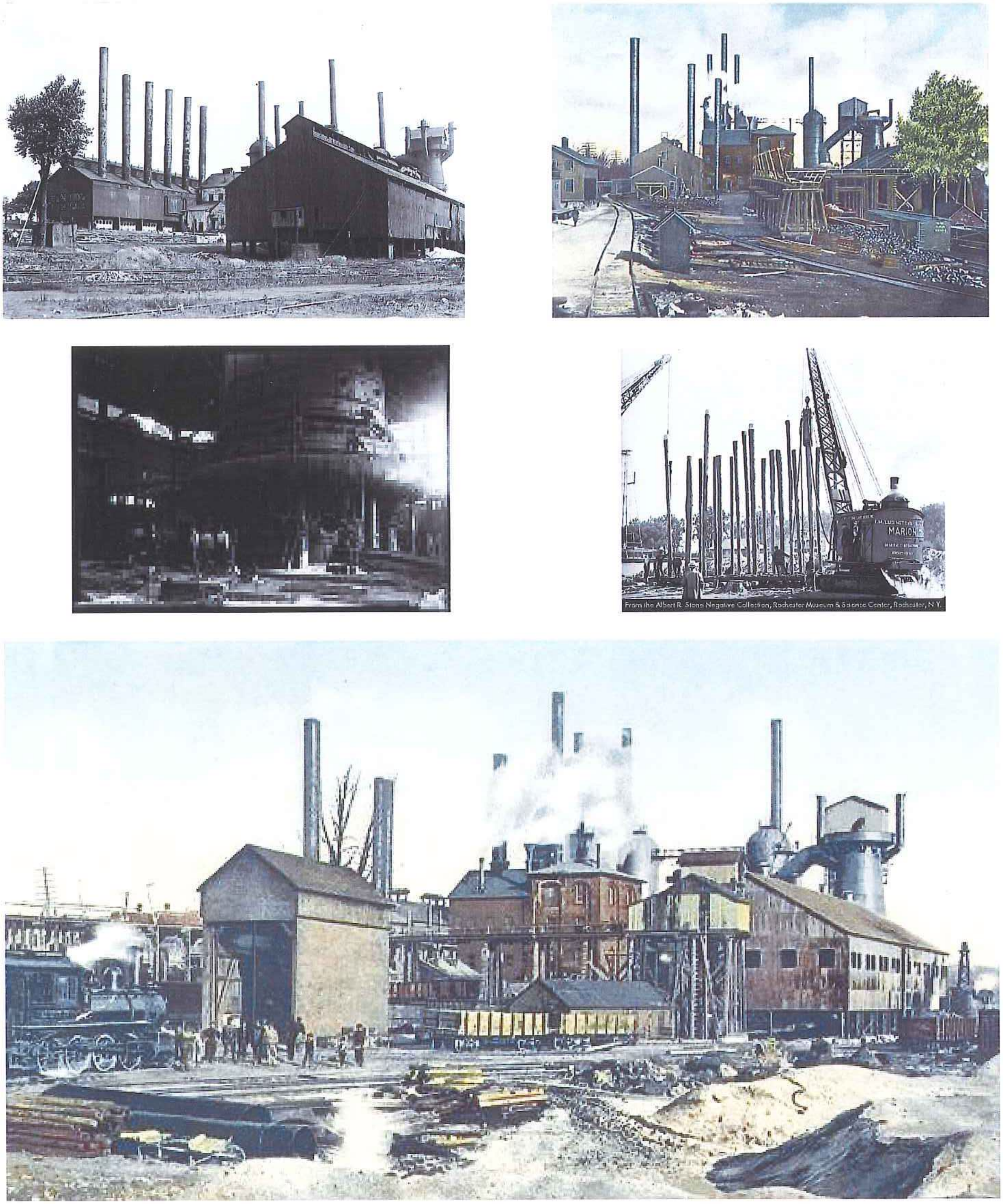


Figure No. 1 – Historical photos of the old steel mill obtained from the Monroe County Public Library Web Page.

3.0 EXPLORATION AND TESTING

For this site evaluation, LaBella Associates, P.C. retained Geomatrix to perform a geophysical survey of the parcel in advance of any new subsurface exploration. Geomatrix performed an electromagnetic survey using a Geonics EM61 high sensitivity, high resolution time domain detector. A copy of the Geomatrix report is in Appendix 3.

Based on the geophysical test results, we requested and observed an additional four test borings and fifteen test pits. Target Drilling performed test borings B08-1 through B08-8 (B08-5 through B08-8 were performed as part of the environmental assessment) between October 23 and October 27, 2008 under contract to LaBella Associates, P.C. They provided a CME-75 truck mounted drill rig for the test boring work. They advanced the borings using hollow stem auger casings. They recovered split spoon soil samples using the Standard Penetration Test (SPT) method continuously through the fill into the native soils. The boring depths ranged from 5.5 to 40.5 feet below existing grade.

We observed test pits TP-1 through TP-15 performed on September 9 and October 13, 2008. The initial test pits were excavated using a Bobcat mounted excavator. Due to obstructions in the fill, additional test pits were excavated using a John Deere 690 size track-mounted excavator. The test pit depths range from 4.0 to 14.5 feet deep. The test boring and test pit locations are depicted on the LaBella Associates, P.C. *Site Survey – Figure 4*. The logs are enclosed in Appendix 4.

We selected five representative soil samples for laboratory analyses. CME Associates, Inc. performed one liquid and plastic limits test, two organic content determinations, and two DIPRA test. The test results are discussed below. The 2008 CME laboratory report follows the text of this report.

As part of this study, we reviewed the subsurface data provided by the City of Rochester and old soils data from our previous work in the area. Outlined below are the test holes we reviewed. Their locations are plotted on the LaBella Associates, P.C. *Site Survey – Figure 4*.

- 2007 Stantec Consulting Services, Inc. geothermal test well GT-1 and thermal conductivity testing (Appendix 2).
- 2005 Target Drilling test borings B05-1 and B05-7 (Appendix 4).
- 2000 LaBella Associates, P.C. test pits TP-9 through TP-13, TP-16, TP-17, TP-18, TP-20, and TP-22. (Appendix 4).
- 2000 H&A of New York, Inc. test borings HA-113, HA-114/MW-3, HA-117/MW-2, and HA-121 (Appendix 4).
- 1980 Rochester Drilling Company, Inc. test borings B-7 and B-11 (Appendix 4).

4.0 SOIL, BEDROCK, AND GROUNDWATER CONDITIONS

The following interpretations of the soil, bedrock, and groundwater conditions are based on widely spaced test borings and test pit data, our site observations, and prior work in the area. Variations from the inferred subsurface profile are possible, especially on this filled and previously disturbed site. See the boring and test pit logs in the Appendices for soil descriptions at the test locations. LaBella Associates, P.C. interpretative cross sections are shown on Figures 7 through 10. Call us immediately if such variations are found so we may evaluate the impact on our conceptual findings.

A typical soil profile encountered across the parcel consists of fill material over lake deposits, glacial till, then bedrock. This area contained the old steel foundry complex. The complex was terraced into the hillside (see photos following Page 2). Some large foundations were left in-place and backfilled with the earth fill and/or demolition debris. In reviewing the historical photos, many of the old structures were light, wood-framed construction; some heavier portions (blast furnace, smoke stacks, etc.) may have been supported on timber piles. Unformed concrete footings exposed in the southwest quadrant may have been circular, unformed, trench-poured concrete footings or grade beams cast over timber piles. The more significant brick engine room likely had a more significant foundation, possibly similar to the cut stone foundation wall exposed in the southwest quadrant. Suspected old trestle foundation remnants, consisting of steel I-beams setting on 3 to 4 foot diameter caissons, were encountered in the northwest quadrant (see 2008 LaBella test pits TP-3, TP-4, TP-12, and TP-15).

The fill consists of three materials: earth fill from re-grading for the old steel mill, construction debris from the plant demolition, and waste by-products from the mill operations. Earth fills, consisting of reworked silty sand and sandy/clayey silt, were encountered in isolated areas between the old structures. The earth fills are generally two to four feet deep; deeper earth fills were noted in suspected coal/iron ore storage bins notched into the hillside. A thin layer of buried topsoil underlies the fill at a couple locations (see Rochester Drilling boring B-11; Haley-Aldrich boring HA-121; and 2008 LaBella test pits TP-3, TP-4, TP-8, TP-12, and TP-15).

Old debris-laden fill was primarily brick and concrete rubble, likely the remnants of the old engine room and smoke stacks. The debris-laden fills were roughly five to eight feet deep. These fills tend to be concentrated in the southwest quadrant (see 2008 test borings B08-1, B08-5, B08-6, B08-7; 2005 boring B05-7; 2008 LaBella test pits TP-2, TP-3, TP-4, TP-5, TP-10, TP-14; and 2000 LaBella test pits TP-11, TP-13, and TP-20).

The waste material varies from foundry sand (fine to medium sand) to slag (gravel to sand size particles with pieces six to eight inches in diameter). Some of the slag has calcified or fused together, making excavating through the material challenging. Deep fills (up to 18 feet deep) may be present. We believe that the slag fill is confined to the eastern portion of the site (see the *Site Survey – Figure 4* for the suspected slag fill limits). (See 2008 borings B08-2, B08-3, B08-4, B08-5, B08-6, B08-7; 2005 borings B05-1; 1980 boring B-7; Haley-Aldrich borings HA-113 and HA-114; 2008 LaBella test pits TP-1, TP-7, TP-13; and 2000 LaBella test pits TP-9, TP-10, TP-12, TP-16, TP-18, TP-20, TP-22.)

We suspect that the slag fill was placed in an old marsh environment along the edge of the river (see Figure 5). The suspected fill limits likely correspond to the old shoreline. East of the old shoreline, a two to four foot thick layer of peaty topsoil was noted at borings B08-2 and B08-3 under the slag fill. The upper underlying native soil was organic silt, transitioning to glacial lake-laid clayey silt at depth. West of the old shoreline, the upper native soil profile consist of firm or medium-stiff glacial lake deposits consisting of silty sand (SM), sandy and/or clayey silt (ML) or silty clay (CL). The lake deposits range from 10 to 40 feet thick, becoming thicker toward the south and west. The firm to very dense glacial till deposit underlies the lake deposits. Test borings B08-1 through B08-4 and HA-121 penetrated into the glacial till formation.

We also performed a 10-point Ductile Iron Pipe Research Association (DIPRA) test on a slag fill and native soil sample. Negligible amounts of sulfides were noted in the native soil. The testing resulted in a resistivity level at 660 ohm-cm, Redox Potential of 134 mv, pH of 7.1, and poor drainage characteristics for the native soil. The test results of 12 points indicate that the soil should be considered corrosive to ductile iron pipe.

Sulfides were noted in the slag samples. The testing resulted in a resistivity level at 770 ohm-cm, Redox Potential of 79 mv, pH of 7.9, and fair drainage characteristics for the slag fill. The test results of 18 points indicate that the slag fill should be considered corrosive to ductile iron pipe.

Test borings HA-121 and GT-1 encountered the bedrock surface 55 to 60 feet below the surface. Bedrock is known to drop sharply towards the river and is over 150 feet deep at the old Ferry terminal. Stantec identified the bedrock as the Queenston Formation. This formation consists of horizontally bedded shales, siltstones and sandstones that extend to a depth of 400 feet below the surface.

The groundwater table was monitored by LaBella Associates, P.C. as part of their 2000 and 2008 environmental site characterization study. They monitored the groundwater levels at the observation wells installed in test borings B08-2/MW-1, HA-114/MW-3, and HA-117/MW-2. They recorded the water elevation as tabulated below.

Table No. 1 – Groundwater Levels

Boring/Well Number	Date	Surface Elevation	Water Elevation
HA-114/MW-3	June 2000	261.92	251.28
HA-117/MW-2	June 2000	253.70	248.66
B08-2/MW-1	November 5, 2008	256.4±	244.8±

5.0 LOT SPECIFIC CONCLUSIONS

Based on these findings, we draw the following conclusions for the varying development lots:

5.1 Lots A-1 and A-4

These two lots will be more challenging to develop. Within 100 feet of the existing North River Street, the fills tend to be deeper, contain more slag, and extend below the groundwater table. The upper native soil contains moderate to high amounts of organic matter to depths of up to 20 feet below grade.

These conditions make developing Lot A-1 and A-4 more costly than other portions of the site. Due to the depth of fill present (along with the high groundwater table), removal of the in-place fill and backfilling with new structural fill is not likely cost effective. Construction on these lots will likely require a deep foundation system and structural floor slab solution. The following is a discussion of foundation approaches and potential design/construction issues:

Caissons

Buildings could be supported on drilled piers/caissons. Caissons would extend roughly 30 to 35 feet below the existing surface and bear on the compact to very dense glacial till deposit. Dependent on actual design loads and settlement constraints, allowable bearing pressures in the 5 to 10 tons per square foot range may be achievable.

We foresee three main issues with caisson installations. Testing indicates a corrosive environment exists both in the fill and native soil; corrosion protection measures may be required. Obstructions should be expected during the caisson installations. Obstructions could include, rails/ties associated with old railroad alignments, large pieces of demolition debris, abandoned underground utility piping, old foundations, old floor slabs, and/or large pieces/fused of slag. Plan to utilize temporary steel casings and hoe-ramming to remove obstructions and control groundwater flow. Heavy water flow may occur below the groundwater table; large sumps/pumps may be required to control groundwater in the caissons during the obstruction removal operations.

Steel H-Piles

Buildings could be supported on steel H-piles. H-Piles would extend roughly 45 to 50 feet below the existing surface and bear within the compact to very dense glacial till deposit. Dependent on actual design loads and settlement constraints, allowable pile capacities within the till zone are likely to be in the 45 to 75 tons range, higher capacity piles could be achieved by driving the pile deeper and/or having the pile bear to bedrock.

We foresee the same issues with H-pile installations. Testing indicates a corrosive environment exists; corrosion protection measures may be required. Obstructions should be expected during the H-pile installations. We suggest pre-auguring the H-pile locations to limit pile damage when driving through the slag. Pre-augering would also define areas where obstruction removal is required; excavating equipment and hoe-ramming may be required to remove obstructions. Heavy water flow may occur below the groundwater table; well points may be required to control groundwater during the unconfined obstruction removal operations.

Geo-piers/Vibro-Compacted Concrete Columns

Buildings could be supported on compacted stone or concrete columns extending through the fill/organic soil to the native soil. Stone/Concrete would extend roughly 30 to 35 feet below the existing surface and bear on the compact to very dense glacial till deposit. Dependent on actual design loads and settlement constraints, allowable bearing capacities at 'normal' spread footing foundation depths may be improved to the 3,000 to 8,000 psf range by using the piers/columns. We foresee the same obstruction and groundwater issues with column installations.

It is feasible that a significant volume of concrete foundations, floor slabs, old rail lines, pipes, and brick-lined furnace debris and slag may be excavated to establish a level building pad on Lots A-1 and A-4. We understand that some fused slag and old building debris encountered during the existing utility installations required hoe-ramming to remove. Similar difficulty may be incurred during subsurface excavations to establish a building pad/mass grading, foundations, and underground utilities.

One possible approach to 'dispose' of this material would be to designate an area to stockpile the concrete, brick, cobbles, boulders, slag, and other hard particles as it is encountered. If enough material is generated during the development to make it economically feasible, consider crushing this material for reuse as structural fill, parking lot/floor base material, and/or wall backfill. We suggest estimating a quantity of material that might be generated to see if a crushing operation would be cost effective.

Fill removal work would extend below the water table (if attempted). Deep excavations, below the water table to remove obstructions, have the potential to encounter heavy water flow from the porous slag, foundry sand fill and the old shoreline sand and gravel deposits. Installation of deep wells or well points may be required to dewater excavations that extend below the water table and maintain an undisturbed subgrade. Caissons that are used in these areas may require use of drilling slurry to control water/soil migration.

Care should be taken in setting basement floor grades on these sites. The groundwater table has been measured around elevations 245 to 248 on these parcels. The water table will fluctuate with the Genesee River and Lake Ontario. For conceptual planning, we suggest keeping basement floor grades above elevation 252.

The following is a list of potential premium cost items for redevelopment of Development Lots A-1 and A-4 as compared to construction on a 'green' site. As you develop your cost estimates, allot money to address the appropriate geotechnical aspects of the project.

Structural/Design Costs
Deep foundation (caissons, micro-piles, piles) through the fill
Structural floor slab(s)
Hoe ramming of old concrete foundations and/or fused slag fill
Dewatering required for obstruction removal/utility installations
Sorting/Crushing operations to limit off-site disposal
Importing new structural fill to develop building pad(s)
Off-site disposal of excavated materials/caisson spoils (foundations/utility trenches)
Import of soil for foundation/utility trench backfill
Crawl space to hang sub-floor utility lines
Crawl space/sub-floor ventilation system
Corrosion protection/wrapping of underground piping
Corrosion protection of structural steel/concrete
Large diameter pipes/steeper slopes for underground utilities
Extra stone base under utility lines
Thicker sidewalk sections including geogrid
Thicker pavement sections including geogrid

Construction Oversight Costs
Full-time site presence during the mass earthwork by the geotechnical engineer's representative to aid in sorting suitable material for reuse/crushing
Full time presence of testing agency during the structural fill placement
Full-time site presence by the geotechnical engineer during deep foundation installations
Periodic site visits by the geotechnical engineer during the pavement/sidewalk subgrade preparation work

5.2 Lot A-2

Although conditions along Lake Avenue are better, Lot A-2 still presents challenges for developing the parcel. For conceptual planning, we suggest notching new buildings into the site, with at-grade entrances both off Lake Avenue and from the lower parking lots/boardwalk. Excavation for the lower level would remove most of the in-place fill and in-place foundations from under the proposed new construction areas. Lower level floor slabs would then sit on native soil or new structural fill (placed where small amounts of removal and replacement are required). Site grading may allow for at-grade entrances of Lake Avenue, North River Street, and a below-grade level of parking. It is our opinion that lightly-loaded (wood or steel-framed residential, commercial, and office structures) can likely be supported on a spread footing foundation system at low to moderate bearing pressures (say 1,500 to 4,000 psf).

If buildings are situated with slabs-on-grade at Lake Avenue elevation, extensive site preparation work would be required. This would include removal of in-place foundations, floor slabs, construction debris-laden fill, and other non-structural earth fills. Excavation depths of roughly 10 feet may be required in limited areas to complete the site preparation work. A cost comparison of the site preparation work required (removal and replacement operations), versus using a deep foundation system and structural floor slab should be undertaken, even for lightly loaded, wood framed structures. We believe that Vibro-compacted Concrete Columns (VCC) or caissons bearing on the glacial till 25 to 35 feet below the surface could be utilized to support the structure(s). Plan to remove obstruction(s) where old foundations/floor slabs are encountered that cannot be easily removed with an earth auger.

It is feasible that a large volume of concrete foundations, floor slabs, old rail lines, pipes, and brick-lined furnace debris remain on Lot A-2. As with Lot A-1 and A-4, it may prove economical to stockpile, crush, and re-use debris, concrete, and slag as structural fill in lieu of off-site disposal. We suggest estimating a quantity of material that might be generated by a crushing and sorting operation (similar to Lots A-1 and A-4) would be cost effective.

The following is a list of potential premium cost items for redevelopment of this parcel as compared to construction on a 'green' site. As you develop your cost estimates, allot money to address the appropriate geotechnical aspects of the project.

Structural/Design Costs
Removal of fill required for slab-on-grade/spread footing construction
Hoe ramming of old concrete foundations
Crushing concrete, brick, cobbles, boulders for structural fill
Importing new structural fill to develop building pad(s)
Off-site disposal of excavated materials (foundations/utility trenches)
Import of soil for foundation/utility trench backfill
Deep foundation (or caissons, micro-piles, piles) through the fill
Structural floor slab(s)
Crawl space to hang sub-floor utility lines
Crawl space/sub-floor ventilation system
Corrosion protection/wrapping of underground piping
Corrosion protection of structural steel/concrete

Large diameter pipes/steeper slopes for underground utilities
Extra stone base under utility lines
Thicker sidewalk sections including geogrid
Thicker pavement sections including geogrid

Construction Oversight Costs
Full-time site presence during the mass earthwork by the geotechnical engineer's representative to aid in sorting suitable material for reuse/crushing
Full time presence of testing agency during the structural fill placement
Full-time site presence by the geotechnical engineer during deep foundation installations
Periodic site visits by the geotechnical engineer during the pavement/sidewalk subgrade preparation work

5.3 Lot A-3

It is our opinion that Lot A-3 will prove the "easiest" of the Lots to re-develop. While less construction debris is expected, we believe some deep fill exists within the old depressed storage bins. Where encountered, these areas were filled primarily with 'clean' earth. If buildings are situated with slabs-on-grade at Lake Avenue elevation, extensive site preparation work would be required. This would include removal of in-place foundations, floor slabs, and other non-structural earth fills. Excavation depths of roughly 15 feet may be required in limited areas to complete the site preparation work.

For conceptual planning, we suggest notching new buildings into the site (similar to Development Lot A-2), with at-grade entrances both off Lake Avenue and from North River Street. With removal and replacement, it is our opinion that lightly-loaded (wood or steel-framed residential, commercial, and office structures) can likely be supported on a spread footing foundation system at low to moderate bearing pressures (say 1,500 to 4,000 psf).

We believe that the 'clean' earth fill and the native soil, free of organic, frozen material, and debris, will be suitable for reuse as structural fill during limited times of the year. The native soil is sandy silt to clayey silt. This material will be moisture sensitive and frost susceptible; it will be difficult to compact/stabilize unless the proper moisture content is maintained. Planned use of this material should be limited to the drier summer months, say May through October. Using the on-site soil outside these limits will be more weather dependent.

The following is a list of potential premium cost items for redevelopment of this parcel as compared to construction on a 'green' site. As you develop your cost estimates, allot money to address the appropriate geotechnical aspects of the project.

Structural/Design Costs
Removal of fill required for slab-on-grade/spread footing construction
Hoe ramming of old concrete foundations
Corrosion protection/wrapping of underground piping
Corrosion protection of structural steel/concrete

Construction Oversight Costs
Full-time site presence during the mass earthwork by the geotechnical engineer's representative to aid in sorting suitable material for reuse/crushing
Full time presence of testing agency during the structural fill placement
Periodic site visits by the geotechnical engineer during the pavement/sidewalk subgrade preparation work

6.0 GENERAL RE-DEVELOPMENT CONSIDERATIONS

The following discussions outline items that pertain to all four proposed re-development lots.

6.1 Seismic Considerations

New York State Building Code contains provisions for seismic design. The 2007 Code identifies the Charlotte area as having a short period spectral acceleration (S_S) of 0.20g and 1-second period spectral response acceleration (S_1) of 0.06g. We identify the site as having a seismic site classification of D (stiff soil profile).

One seismic consideration that we reviewed in developing the site classifications was the presence of highly organic soils and/or peat. NAVFAC Document 7.1 defines highly organic soils as those containing more than 30 percent organic matter and peat as soils containing over 75 percent organic matter. While the samples tested contain moderate amounts of organic matter, they do not classify as peat or highly organic soils nor are the deposits encountered over 10 feet thick.

It is our opinion that the site has factor of safety higher than the 1.3 required by California Geological Survey Special Bulletin 117 entitled *Guidelines for Evaluating and Mitigating Seismic Hazards in California* to pose a potential for liquefaction to occur. The largest earthquakes documented that have been felt in western New York since 1873 when the reservoir was constructed were a 5.2 earthquake in 1884 located in New York City; a 1925 6.2 quake in Charlevoix, Quebec; a 1929 5.2 quake in Attica; a 1940 quake centered in Ossipee, New Hampshire; a 1944 quake in Massena; a 1983 5.1 earthquake centered in Goodnow; and a 2002 quake 5.2 centered in AuSable Forks.

We are not aware of any active faults running directly under the parcel site. The nearest documented fault is the Clarendon-Linden Fault, roughly 25 miles west of the site. This fault is believed to be capable of generating a magnitude 7.0 earthquake, with one magnitude 5.0 earthquake believed to occur every 100 years. The earthquake intensity at our site during such an event will be somewhat less, as the seismic energy dissipates as it is dampened traveling through the soil and rock. Studies of loose soil deposits around Attica, New York (that would be subject to liquefaction in a magnitude 6.0 or larger event) have found no evidence that liquefaction has occurred in the last 12,000 years.

6.2 Underground Utilities

New underground utilities will lie in both native soil and in debris-laden fill. Testing indicates both materials may be corrosive; corrosion protection may be required. Where fills are shallow, undercutting to remove the fill from under the pipe and placing extra subbase/stone may prove viable to provide adequate pipe support. Where deeper fills are in-place, settlement of the pipe and manhole/catch basin structure is possible. Steeper slopes should be used where the existing fill is left in-place under the pipes to aid in maintaining flow out of bellies that form.

6.3 Pavement/Sidewalk Measures

It is our opinion that pavements and sidewalks can be constructed over the in-place fill, with some risk of a shorter than 'normal' pavement life. Having said this, the pavement and sidewalk performance is expected to be similar to the existing paved parking areas that lie over the in-place fills. For your preliminary estimating, we suggest budgeting for a slightly thicker than 'normal' pavement, say 1.5 inches of asphalt top, 2.5 inches of asphalt binder, and 15 inches of crusher-run stone subbase. Budget to install a geogrid similar to Mirafi BXG-12 under the pavement and sidewalks subbase layer where they extend over remaining fill material. Some undercutting and/or reworking of unsuitable fill will be required to remove the large debris from within the top 12 inches of the pavement subgrade; plan to backfill areas undercut with suitable on-site soil.

Plan for pavement slopes of at least 2.0 percent. Install weeps at low points in the pavement to facilitate drainage out of the granular subbase and into the stormwater system. Plan for higher maintenance costs associated with these pavements and utility alignments.

6.4 Bedrock/Groundwater Considerations

It is our opinion that bedrock should not be encountered at 'normal' construction depths in this area. Based on the available data, we suspect that the groundwater table is around elevation 245 and will fluctuate with levels of Lake Ontario. With most of the proposed construction to be at-grade above elevation 250, the groundwater table should have little impact on the structure(s) performance. Groundwater may be encountered during installation of deep foundations and/or utilities.

6.5 Geo-thermal Test Well

A geo-thermal test well was installed in the southwest corner of the site (GT-1). The Stantec, Inc. test report for this well lies in Appendix 2. In summary, they concluded that the geologic conditions on this parcel are favorable for geothermal development. The geothermal conductivity for GT-1 was 0.95 Btu/hr-ft-°F for the upper soil profile (below average for alluvium) and 1.63 Btu/hr-ft-°F (above average for shale bedrock).

7.0 CLOSURE

This concludes our Pre-Development Assessment. The conclusions outlined in this Pre-Development Assessment are provided with our limited information on the final uses of this parcel. We point out that additional geotechnical exploration, testing, and/or engineering analysis will be required after the building locations, sizes, design loads, and site grading have been established. Call if you have questions regarding our interpretations of the soil, bedrock, and groundwater conditions as you develop concepts to develop this parcel. We look forward to hearing from you again as potential developers assess options for development of this parcel.

Important Information about Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

ASFE
THE BEST PEOPLE ON EARTH

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@asfe.org www.asfe.org

CME Associates, Inc.

385 Sherman Street
Rochester, New York 14606
(585) 254-8740
(585) 254-1351 (Fax)

www.cmeassociates.com

November 4, 2008

Foundation Design, P.C.
335 Colfax Street
Rochester, New York 14606

Attn: Jeff Netzband

Re: Development Area 1 / 4700 Lake Avenue
Foundation Design No.: 3284.0
CME Report No.: 36292S-127-1008

Dear Mr. Netzband:

Enclosed please find laboratory test results for samples delivered by a representative of Foundation Design on October 28, 2008.

The samples were tested for 10-point DIPRA test, Organic Content, and Atterberg Limits as requested.

Please feel free to contact our office should you have any questions.

Respectfully submitted:

CME Associates, Inc.

William D. Knowles
Senior Laboratory Technician

Attachments: Laboratory Test Report (3 pages)

/smg

CME Associates, Inc.

Laboratory Test Report

Foundation Design, P.C.
Project: Development Area 1 / 4700 Lake Avenue
(F.D. Job #3284.0)
CME Report No.: 36292S-127-1008

1) Soil Characterization Test Results (ASTM D-2974, D-4318):

Boring No.	Sample No.	Depth (ft)	Atterberg Limits (LL/PL/PI)	Moisture (%)	Ash (%)	Organic Matter (%)
B08-2	S-6	13'-6" to 15'	-	87.8	79.3	20.7
B08-3	S-7 (Top)	18'-6" to 20'	-	36.1	93.9	6.1
-3	S-7	18'-6" to 20'	27 / 18 / 9	18.8	-	-

CME Associates, Inc.

As requested, CME performed soil testing following the 10 Point System of evaluating soils for corrosion potential established by the Ductile Iron Pipe Research Association (DIPRA). Please refer to Table I below for results. The samples were collected by your representatives for the above referenced project and were delivered to CME Associates, Inc. for analysis. The samples were composited, as requested, in equal amounts by weight at "as received moisture content".

The following sample locations and elevations were provided by the Client:

Sample No.	Sample Location	Visual Material Description
1	Composited samples (TP08-3, S-1), (TP08-13, S-1), (B08-2, S-3), (B08-2, S-4), (B08-2, S-5)	Reddish-Brown cmf SAND and cmf GRAVEL
2	Composited samples (TP08-4, S-1) (TP08-11, S-1)	Greenish-Brown SILT/CLAY

TABLE 1- DIPRA TEST RESULTS

Sample No.	Resistivity ohm-cm.	Redox Potential (mv)	pH	Sulfides	Moisture	DIPRA Points
1	770	79	7.9	Positive	Fair	18
2	660	134	7.1	Negative	Poor	12

Based on the results of the DIPRA testing performed on the samples delivered, the soil is considered corrosive to ductile iron piping and thus polyethylene encasement is warranted.

Thank you for allowing CME Associates, Inc. the opportunity to provide you with our services. Please contact us if you have any questions.

Respectfully submitted,
CME Associates, Inc.

William D. Knowles
Senior Laboratory Technician

Attachment: Soil Test Evaluation for Ductile Iron Pipe; 10-Point System (1 Page)

CME Associates, Inc.

Soil Test Evaluation for Ductile Iron Pipe

(10-Point System)*

Soil Characteristics	*Points*
Resistivity (ohm-cm)**	
<1,500	**10**
≥1,500-1,800	**8**
>1,800-2,100	**5**
>2,100-2,500	**2**
>2,500-3,000	**1**
>3,000	**0**
pH	
0-2	**5**
2-4	**3**
4-6.5	**0**
6.5-7.5	**0*****
7.5-8.5	**0**
>8.5	**3**
Redox potential	
>+100mv	**0**
+50 to +100mv	**3.5**
0 to +50mv	**4**
Negative	**5**
Sulfides	
Positive	**3.5**
Trace	**2**
Negative	**0**
Moisture	
Poor drainage, continuously wet	**2**
Fair drainage, generally moist	**1**
Good drainage, generally dry	**0**

*Ten points-corrosive to Ductile Iron Pipe. Protection is indicated.

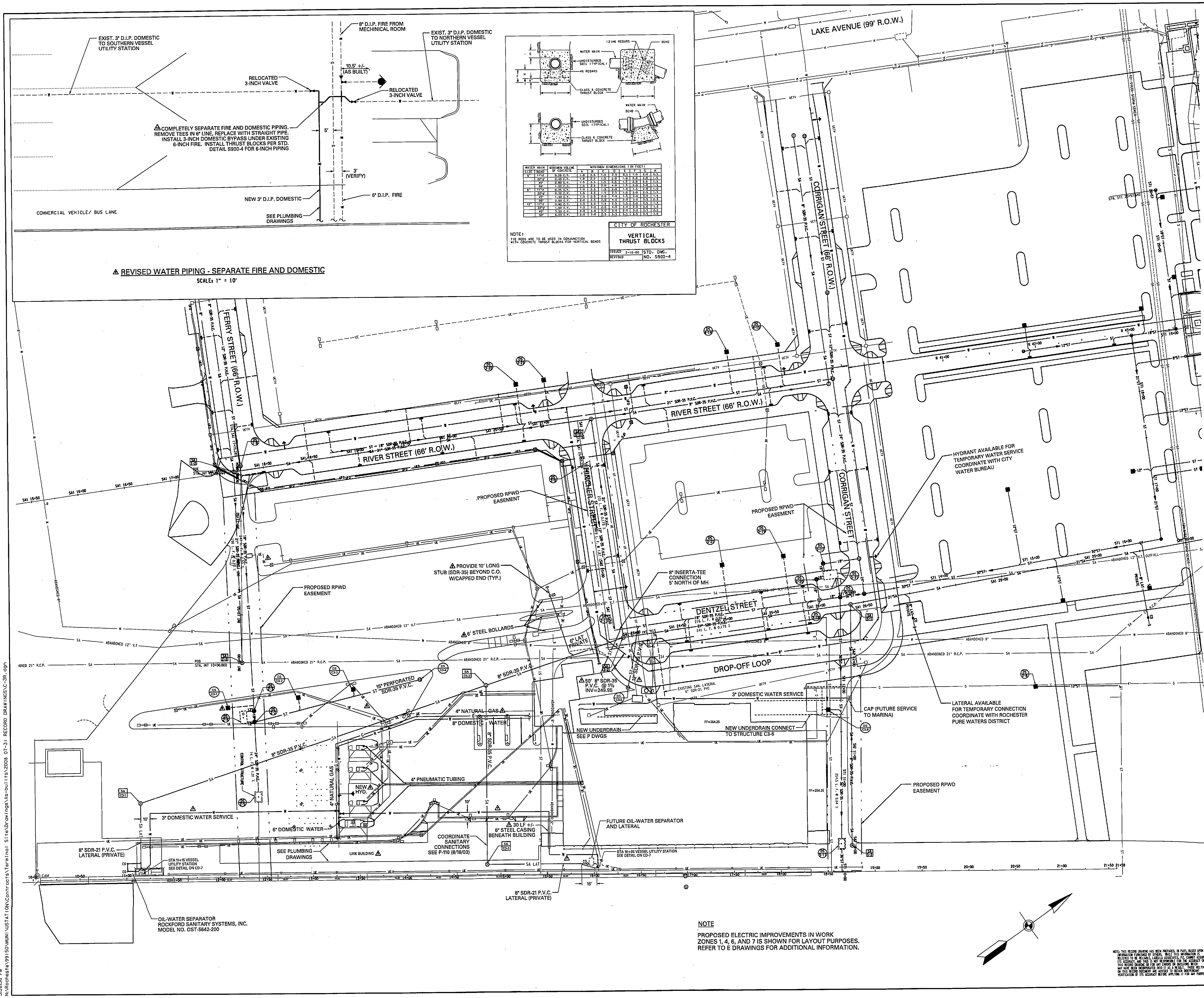
**Based on water-saturated soil box. This method is designed to obtain the lowest- and most accurate-resistivity reading.

***If sulfides are present; and low (<100mv) or negative redox-potential results are obtained, 3 points should be given for this range.

Note: DIPRA recommends that the soils sample used in the 10-point evaluation to be taken at pipe depth rather than at the surface. Soil corrosivity readings can vary substantially from the surface to pipe depth.

Appendix 8

Site As-Built Drawings



NOTE

PROPOSED ELECTRIC IMPROVEMENTS IN WORK ZONES 1, 4, 6, AND 7 IS SHOWN FOR LAYOUT PURPOSES. REFER TO E DRAWINGS FOR ADDITIONAL INFORMATION.

PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 1461
TELEPHONE (716) 454-6110
FACSIMILE (716) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
TROWBRIDGE & WOLF
1345 MECKLENBURG ROAD
ITHACA, NY 14850
TELEPHONE (607) 277-1400
FACSIMILE (607) 277-6092

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTRE DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (716) 359-9000
FACSIMILE (716) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (716) 218-0730
FACSIMILE (716) 218-0737

PROJECT NAME:

PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS

CLIENT:

CITY OF ROCHESTER

BY:

DATE: 03/09/04 LIC. NO: 001064-1

DATE	REVISION	BY
5/08/03	RPWD-ADD EXISTING SEWER INFORMATION	SPM
6/05/03	ADD NEW INFORMATION	SPM
6/30/03	ADD LINK BUILDING	SPM
8/12/03	DRAINAGE MODS.	SPM
8/12/03	DOMESTIC WATER MODS.	SPM
9/05/03	MOVE CATCH BASIN	SPM
9/16/03	DOMESTIC WATER AND DRAINAGE MODS.	SPM
10/10/03	REVISED LOCATIONS	SPM
3/08/04	REVISED WATER PIPING	SPM
3/15/04	REVISED WATER PIPING	SPM

DRAWING TITLE:

UTILITY PLAN

DESIGNED BY: SPM	
DRAWN BY: ECH/GKK/KAH	
CHECKED BY: SPM	
APPROVED BY: SE	
PROJECT NO: 99150	
CONTRACT NO:	
SCALE: 1"-30'	DWG. NO: C-3R
DATE: MAR. 2004	SHEET 4 OF 116

PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 1461
TELEPHONE (716) 454-6110
FACSIMILE (716) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
TROWBRIDGE & WOLF
1345 MECKLENBURG ROAD
ITHACA, NY 14850
TELEPHONE (607) 277-1400
FACSIMILE (607) 277-6092

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTRE DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (716) 359-9000
FACSIMILE (716) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (716) 218-0730
FACSIMILE (716) 218-0737

PROJECT NAME:
PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS

CLIENT:
CITY OF ROCHESTER

BY: ____
DATE: ____ LIC. NO: ____

DATE	REVISION	BY

DRAWING TITLE:
GRADING WEST PARKING LOT

DESIGNED BY: SPM
DRAWN BY: ECH/GKK/KAH
CHECKED BY: SPM
APPROVED BY: SE
PROJECT NO: 99150
CONTRACT NO:
SCALE: 1"=30'
DATE: MAY 2003
DWG. NO: C-
SHEET OF

DRAINAGE TABLE

STRUCTURE NO.	STRUCTURE	STATION	OFFSET (FT)	SIDE	AS-BUILT INVERTS				TOP OF COVER	DESCRIPTION OF WORK
					NORTH	SOUTH	EAST	WEST		
DS 1-1	ST MH	F 11+15.0	1.8	LT			267.90		275.09	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 1-8 WITH 247' OF 12" SDR-35 PVC, ITEM C604.044801, C604.044803, C603.990812
DS 1-2	CB	F 11+20.0	20.0	RT					274.32	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-3	CB	F 12+00.0	20.0	LT					269.30	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 19.75 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-4	CB	F 12+25.0	20.0	RT					267.72	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 21.75 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-5	CB	F 13+04.9	20.0	RT					263.24	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-6	CB	F 13+24.0	20.0	LT					262.59	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 18.5 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-7	CB	F 13+45.0	20.0	RT					262.24	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 21.5 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-8	ST MH	F 13+65.6	1.3	LT		NONE	253.61	253.64	262.23	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 2-3 WITH 259'+/- OF 18" SDR-35 PVC AND INSTALL 18" SDR-35 PVC STUB TO SOUTH, ITEM C604.044801, C604.044803, C603.990818
DS 1-9	ST MH	R 34+37.0	2.2	RT	255.18	255.28			261.17	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 3-4 WITH 271' OF 18" SDR-35 PVC, ITEM C 604.044801, C604.044803, C603.990818
DS 1-10	CB	R 34+40.0	20.0	LT					260.76	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-11	CB	R 33+65.0	12.0	RT					261.76	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 1-12	CB	F 11+31.3	22.5	RT					-	ADJUST FRAME AND GRATE, ITEM R604.17
DS 2-1	CB	EXISTING ACCESS ROAD							-	NO WORK
DS 2-2	ST MH	A 2+45.7	5.6	RT	NONE	245.50	245.50	245.80	251.93	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO 24" ø PVC STUB AT DS 2-5 WITH 74' OF 24" PVC, ITEM C604.046001, C604.046003, C603.990824, C603.076524, AND INSTALL 18" SDR-35 STUB TO NORTH, C603.990818.
DS 2-3	ST MH	A 2+57.6	5.2	RT		246.46	246.53	246.50	251.94	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO DS 2-2 WITH 5.25' OF 18" SDR-35 PVC AND INSTALL WEIR WALL, ITEM C604.046001, C604.046003, C603.990818, S604.8001.
DS 2-4	STRUCTURE	A 2+56.5	5.0	LT					252.00	INSTALL NEW PRECAST VORTECH STRUCTURE, CONNECT DS 2-3 WITH 5'+/- OF 12" SDR-35 PVC, CONNECT TO DS 2-2 WITH 5' +/- OF 12" SDR-35 PVC, ITEM C603.990812, S604.9001
DS 2-5	CONTROL STRUCTURE	A 1+64.7	5.8	RT				242.09		NO WORK
DS 3-1	CB	R 34+68.0	20.0	RT					260.45	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 19 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-2	CB	R 36+40.9	20.0	LT					258.52	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 21 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-3	CB	R 36+45.0	20.0	RT					258.47	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 19 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-4	ST MH	R 37+12.1	2.2	RT	252.07	252.23			258.12	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 4-9 WITH 265' OF 21" PVC, ITEM C604.044801, C604.044803, C603.990821
DS 3-5	CB	R 37+79.6	20.0	LT					256.76	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 21" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-6	CB	R 35+57.0	20.0	RT					259.45	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 19.5 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-7	CB	R 35+40.0	20.0	LT					259.64	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 21 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-8	CB	HS 14+19.0	17.0	RT					256.77	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 16 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-9	ST MH	HS 14+15.0	2.1	LT			250.90	250.94	257.16	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 3-17 WITH 179' OF 12" PVC, ITEM C604.044801, C604.044803, C603.990812
DS 3-10	CB	HS 14+21.0	17.0	LT					256.73	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/9.75 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-11	CB	HS 15+20.0	17.0	LT					254.90	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/20 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-12	CB	HS 15+31.0	17.0	RT					254.70	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 20 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-14	CB	L 10+29.5	123.2	RT					249.53	NO WORK
DS 3-15	ST MH	L 10+31.7	106.7	RT					250.18	NO WORK
DS 3-16	CB	L 10+34.5	88.6	RT					247.64	NO WORK
DS 3-17	ST MH	HS 15+97.7	2.1	LT	248.00 BURIED	BY	LECHASE	248.50	253.78	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 5-18 WITH 217.5 LF +/- OF 18" PVC, ITEM C604.044801, C604.044803, C603.990818
DS 3-18	CB	L 11+11.5	20.0	LT					252.36	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 32 LF +/- OF 8" SDR-21 PVC PIPE, ITEM R601.0208, S604.12, C604.076108, R601.0508.
DS 3-19	CB	D 10+75.0	20.0	LT					252.75	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 18 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12

NOTES:

1. GRATE OFFSETS AND ELEVATIONS ARE MEASURED TO CENTER OF GRATE.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PAVEMENT DRAINAGE TO THE SURFACE INLETS.
3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE ELEVATIONS AND SIZES OF ALL EXISTING PIPE TO WHICH CONNECTIONS ARE TO BE MADE.
4. FITTINGS FOR LATERAL CONNECTIONS TO NEW SEWERS ARE TO BE INSTALLED AS THE MAIN IS INSTALLED. CORED CONNECTIONS OR ROLLED IN WYES WILL NOT BE ALLOWED ON NEW SEWER.

NOTE: THIS RECORD DRAWING HAS BEEN PREPARED, IN PART, BASED UPON INFORMATION FURNISHED BY OTHERS. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, LABELLA ASSOCIATES, P.C. CANNOT ASSURE ITS ACCURACY, AND THUS IS NOT RESPONSIBLE FOR THE ACCURACY OF THIS RECORD DRAWING OR FOR ANY ERRORS OR OMISSIONS WHICH MAY HAVE BEEN INCORPORATED INTO IT AS A RESULT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE APPLYING IT FOR ANY PURPOSE.

PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
TELEPHONE (585) 454-6110
FACSIMILE (585) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
DUFRESNE-HENRY
151 SAINT PAUL STREET
5th FLOOR
ROCHESTER, NY 14604
TELEPHONE (585) 454-2080
FACSIMILE (585) 454-2147

ENVIRONMENTAL CONSULTANT
ERDMAN ANTHONY & ASSOC., INC.
2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
TELEPHONE (585) 427-8888
FACSIMILE (585) 427-8914

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (585) 218-0730
FACSIMILE (585) 218-0737

PROJECT NAME:

PORT OF ROCHESTER ACCESS ROADS AND INFRASTRUCTURE IMPROVEMENTS

PROJECT I.D. #21005
P.I.N. 4753.51

CLIENT:

CITY OF ROCHESTER AND MONROE COUNTY

BY:
DATE: LIC. NO.:

DATE	REVISION	BY
9/03	AS-BUILT	AB

DRAWING TITLE:

CONSTRUCTION TABLES

DESIGNED BY: CAE JM
DRAWN BY: EAB
CHECKED BY: CAE
APPROVED BY: SE
PROJECT NO.: 99150
CONTRACT NO.:
SCALE: NONE
DATE: MAY 2002
DWG. NO.: CT-01R
SHEET 12R OF 62R

FILE = ...\ACCESS ROADS\V2_CT01R.dgn
DATE = 11/20/2008
TIME = 9:39:03 AM

DRAINAGE TABLE CONTINUED

STRUCTURE NO.	STRUCTURE	STATION	OFFSET (FT)	SIDE	AS-BUILT INVERTS NORTH	SOUTH	EAST	WEST	TOP OF COVER	DESCRIPTION OF WORK
DS 3-20	CB	D 10+77.0	20.0	RT					252.74	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 24 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 3-21	CB	D 11+26.0	55.0	LT					253.00	INSTALL NEW TYPE C CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 52 LF +/- OF 12" SDR-35 PVC PIPE AND 12" X 18" WYE BRANCH, ITEM C603.990812, C604.076112, S604.13
DS 3-22	CB	R 36+45.0	40.0	LT					259.00	INSTALL NEW TYPE C CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 40 LF +/- OF 12" SDR-35 PVC PIPE AND 12" X 18" WYE BRANCH, ITEM C603.990812, C604.076112, S604.13
DS 3-23	CB	R 36+75.0	40.0	LT					259.00	INSTALL NEW TYPE C CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 39 LF +/- OF 12" SDR-35 PVC PIPE AND 12" X 18" WYE BRANCH, ITEM C603.990812, C604.076112, S604.13
DS 4-1	ST MH	C 11+06.0	5.1	LT			260.76		266.27	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 4-6 WITH 167 LF +/- OF 12" PVC, ITEM C604.044801, C604.044803, C603.990812
DS 4-2	CB	C 11+15.0	20.0	RT					265.61	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 25 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-3	CB	C 11+10.0	20.0	LT					265.82	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 16 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-4	CB	C 12+13.0	20.0	RT					260.34	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-5	CB	C 12+10.0	20.0	LT					260.51	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 12 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-6	ST MH	C 12+74.8	5.1	LT			251.94	251.98	257.62	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 4-9 WITH 87' OF 12" PVC, ITEM C604.044801, C604.044803, C603.990812
DS 4-7	CB	C 13+10.0	20.0	LT					255.87	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 17 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-8	CB	C 13+13.0	20.0	RT					255.77	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 22 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 12" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-9	ST MH	C 13+65.9	2.3	RT		248.19	247.57	248.21	254.98	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO DS 5-12 WITH 189' OF 24" PVC, ITEM C604.046001, C604.0460803, C603.990824
DS 4-10	CB	R 39+09.9	20.0	LT					254.93	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 23 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 21" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-11	CB	R 39+12.0	20.0	RT					254.90	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 18.5 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 21" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-12	CB	C 14+02.0	12.0	RT					254.17	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 15 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X24" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-13	CB	C 14+04.0	12.0	LT					254.16	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 11 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X24" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 4-14	CB	R 38+73.0	40.0	LT					255.40	INSTALL NEW TYPE C CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 40 LF +/- OF 12" SDR-35 PVC PIPE AND 12" X 21" WYE BRANCH, ITEM C603.990812, C604.076112, S604.13
DS 4-15	CB	R 39+27.6	40.0	LT					255.40	INSTALL NEW TYPE C CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 42 LF +/- OF 12" SDR-35 PVC PIPE AND 12" X 21" WYE BRANCH, ITEM C603.990812, C604.076112, S604.13
DS 5-1	CB	C 14+63.0	20.0	RT					253.69	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 9 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X24" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-2	CB	C 15+40.7	20.0	RT					253.30	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/ 19 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X24" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-3	ST MH	C 15+97.8	2.4	RT	242.20	242.03		243.85	253.15	ADJUST EXISTING MANHOLE FRAME AND COVER, ITEM R604.21
DS 5-4	CB	D 12+07.8	20.0	LT					252.45	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/16 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-5	CB	D 11+63.0	20.0	LT					252.33	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/16 LF+/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-6	CB	D 11+65.0	20.0	RT					252.33	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/24 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-7	CB	L 11+92.5	20.0	LT					252.14	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/32 LF +/- OF 8" SDR-21 PVC PIPE, ITEM R601.0208, S604.12,C604.076108, R601.0508
DS 5-8	CB	D 12+09.8	20.0	RT					252.46	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/23 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 18" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-9	CB	L 12+36.5	20.0	LT					252.25	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN W/32.5 LF +/- OF 8" SDR-21 PVC PIPE, ITEM R601.0208, S604.12,C604.076108, R601.0508
DS 5-10	CB	L 12+47.3	62.8	RT			246.99		249.44	NO WORK
DS 5-11	CONTROL STRUCTURE	L 12+41.8	206.8	RT						NO WORK
DS 5-12	ST MH	C 15+60.0	2.3	RT		246.07	246.18	245.83	253.48	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO EXIST. STUB AT DS 5-3 W/ 33 LF OF 24" SDR-35 PVC, CONNECT TO DS5-17 W/34 LF OF 18" SDR-35 PVC, INSTALL WEIR WALL, C604.046001, C604.046003, C603.990824, C604.076524, C603.990818, S604.8001
DS 5-14	CB	C 15+42.7	20.0	LT					253.29	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 24 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 24" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-15	CB	C 14+65.0	20.0	LT					253.68	INSTALL NEW TYPE B CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 24 LF +/- OF 8" SDR-21 PVC PIPE AND 8" X 24" WYE BRANCH, ITEM R601.0208, R601.0508, C604.076108, S604.12
DS 5-16	ST MH	D 12+45.8	2.8	LT	241.38	243.63	241.20	243.77	252.87	ADJUST EXISTING MANHOLE FRAME AND COVER, ITEM R604.21
DS 5-17	ST MH	D 12+32.8	40.5	LT	246.00		246.02		253.73	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 5-21 WITH 6.58 LF+/- OF 18" SDR-35 PVC PIPE , ITEM C604.044801, C604.044803, C603.990818.
DS 5-18	ST MH	D 12+23.4	3.0	LT	246.01	245.92		245.80	252.94	INSTALL NEW MANHOLE, 5' D PRECAST, CONNECT TO EXIST. STUB AT DS 5-16 W/15 LF+/- OF 18" SDR-35 PVC, CONNECT TO DS5-20 W/17.5 LF+/- OF 18" SDR-35 PVC, INSTALL WEIR WALL. C604.076518, C603.990818, S604.8001, C604.046001, C604.046003
DS 5-19	CB	D 11+92.0	55.0	LT					253.00	INSTALL NEW TYPE C CATCH BASIN, CONNECT TO NEW STORM MAIN WITH 52 LF +/- OF 12" SDR-35 PVC PIPE AND 12" X 18" WYE BRANCH, ITEM C603.990812, C604.076112, S604.13
DS 5-20	ST MH	D 12+23.4	24.9	LT	246.00		246.04		253.27	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO DS 5-21 WITH 6 LF+/- OF 18" SDR-35 PVC PIPE , ITEM C604.044801, C604.044803, C603.990818.
DS 5-21	STRUCTURE	D 12+35+/-	28.0	LT		246.08	246.08	246.08	253.50	INSTALL VORTECH STRUCTURE, CONNECT TO DS5-16 AT EXISTING STUB W/19 LF+/- OF 18" SDR-35 PVC ITEM S604.9004, C603.990818, C604.076518.

STORM LAT. FOR TERMINAL BLDG. D 10+20+/- PROPOSED INVERT 249.07 12" SDR-35 PVC LATERAL TO TERMINAL BUILDING OFF NEW 18" SDR-35 PVC MAIN

NOTES:

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2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PAVEMENT DRAINAGE TO THE SURFACE INLETS.
3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE ELEVATIONS AND SIZES OF ALL EXISTING PIPE TO WHICH CONNECTIONS ARE TO BE MADE.

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PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
TELEPHONE (585) 454-6110
FACSIMILE (585) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
DUFRESNE-HENRY
151 SAINT PAUL STREET
5th FLOOR
ROCHESTER, NY 14604
TELEPHONE (585) 454-2080
FACSIMILE (585) 454-2147

ENVIRONMENTAL CONSULTANT
ERDMAN ANTHONY & ASSOC., INC.
2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
TELEPHONE (585) 427-8888
FACSIMILE (585) 427-8914

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (585) 218-0730
FACSIMILE (585) 218-0737

PROJECT NAME:
PORT OF ROCHESTER ACCESS ROADS AND INFRASTRUCTURE IMPROVEMENTS

PROJECT I.D. #21005
P.I.N. 4753.51

CLIENT:
CITY OF ROCHESTER AND MONROE COUNTY

BY:
DATE: LIC. NO.:

It is a violation of New York Education Law Article 145 Sec. 7209, for any person, unless he is acting under the direction of a licensed professional engineer or land surveyor, to alter an item in any way. If an item bearing the seal of an engineer or land surveyor is altered, the altering engineer or land surveyor shall affix to the item his seal and notation "altered by" followed by his signature and the date of such alteration, and a specific description of the alteration.

DATE	REVISION	BY
9/03	AS-BUILT	AB

DRAWING TITLE:
CONSTRUCTION TABLES

DESIGNED BY: CAE/JM
DRAWN BY: EAB
CHECKED BY: CAE
APPROVED BY: SE
PROJECT NO.: 99150
CONTRACT NO.:
SCALE: NONE
DATE: MAY 2002
DWG. NO.: CT-02R
SHEET 13R OF 62R

FILE = ...\ACCESS ROADS\13_CT02R.dgn
DATE = 11/20/2008
TIME = 9:43:02 AM

EXISTING DRAINAGE STRUCTURE TABLE										
							EXISTING INVERTS			
DWG	STRUCTURE NO.	STRUCTURE	STATION	OFFSET (FT)	SIDE	EX. TOP OF GRATE/COVER	NORTH	SOUTH	EAST	WEST
PL-01	DS 1-12	CB	F 11+31.3	20.5	RT					
PL-02	DS 2-1	CB	EXISTING ACCESS ROAD			251.36				
PL-02	DS 2-5	CONTROL STRUCTURE	A 1+64.7	5.8	RT					242.09
PL-03	DS 3-14	CB	L 10+29.5	123.2	RT	249.53				
PL-03	DS 3-15	ST MH	L 10+31.7	106.7	RT	250.18				
PL-03	DS 3-16	CB	L 10+34.5	88.6	RT	247.64		249.87		
PL-05	DS 5-3	ST MH	C 15+97.7	2.4	RT	250.40	242.72	242.32		246.00
PL-05	DS 5-16	ST MH	D 12+45.8	2.8	LT	253.12	242.14	246.00	241.94	

DRIVEWAY						
DWG.	ADDRESS	STATION	SIDE	WIDTH (FT.) A	WIDTH (FT.) B	APRON MATERIAL
PLT-01	4650 LAKE AVENUE	F 11+47.0	RT	22	28	ASPHALT
PLT-01	4630 LAKE AVENUE	F 12+82.5	RT	24	30	ASPHALT
PLT-01	FERRY ST. PARKING EXIT	F 12+22.69	LT	16	20	CONCRETE
PLT-01	BOAT LAUNCH ENTRANCE	- RIVER/FERRY INTERSECTION	-	36	36	ASPHALT
PLT-04	CORRIGAN ST. PARKING	C 12+43.76	LT	30	36	CONCRETE
PLT-04	CORRIGAN ST. PARKING	C 12+46.7	RT	24	30	CONCRETE
PLT-05	CORRIGAN ST. PARKING	C 14+85.2	RT	24	30	CONCRETE
PLT-05	EAST BEACH PARKING	L 13+39.8	RT	24	30	CONCRETE

SANITARY MANHOLE TABLE													
				EXISTING INVERTS				AS-BUILT INVERTS					
STRUCTURE NO.	STATION	OFFSET (FT)	EXISTING RIM ELEV.	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST	WEST	RIM ELEV.	DESCRIPTION OF WORK
SA 1-1	F 11+02.1	6.4 RT								266.40		275.72	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO SA 1-2 WITH 265 LF OF 8" SDR-35 PVC AND OUTSIDE DROP CONNECTION, ITEM C604.044801, C604.044803, C603.990808, C604.076808
SA 1-2	R 33+33.6	7.1 RT						243.67	NONE	243.64	251.69 244.75	262.03	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO SA 2-2 WITH 206 LF OF 21" SDR-35 PVC AND PROVIDE 21" SDR-35 PVC STUB TO SOUTH, ITEM C604.046001, C604.046003, C603.990821
SA 2-1	N: 1187595.834 E: 1408020.148		251.83	244.04	244.19	245.85							ABANDON MANHOLE AND SEWER TO SA 2-2, ITEM C206.0602
SA 2-2	A 3+09.0	11.8 RT						ABANDON	243.63		243.56	254.16	INSTALL NEW DOGHOUSE MANHOLE, 5'D PRECAST, CONNECT TO EXISTING 21" RCP MAIN, ITEM C604.046001, C604.046003, C604.076621
SA 3-1	R 37+19.5	7.0 RT						245.21	244.42	244.39		257.90	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO SA 1-2 WITH 381 LF OF 21" SDR-35 PVC, ITEM C604.046001, C604.046003, C603.990821
SA 3-2	D 10+09.9	6.2 RT						244.75	BY LECHASE		244.61	BY LECHASE 253.56	INSTALL NEW MANHOLE, 5'D PRECAST, CONNECT TO SA 3-1 WITH 232 LF OF 21" SDR-35 PVC, ITEM C604.046001, C604.046003, C603.990821
SA 3-3	L 11+31.5	11.6 LT	251.90	244.70	244.60								ABANDON MANHOLE AND SEWER TO SA 2-1, ITEM C206.0602
SA 4-1	C 11+03.9	6.8 RT								257.74		266.24	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO SA 4-2 WITH 263' OF 8" SDR-35 PVC, ITEM C604.044801, C604.044803, C603.990808
SA 4-2	R 39+76.1	7.1 RT							256.75		246.87	254.83	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO SA 3-1 WITH 252' OF 8" SDR-35 PVC, ITEM C604.044801, C604.044803, C603.990808
SA 5-1	D 12+55.5	6.3 RT			245.74	246.64		245.53	245.50			252.92	CONNECT EXISTING MANHOLE FROM 21" STUB TO SA 3-2 WITH 240 LF OF 21" SDR-35 PVC, ITEM C603.990821, C604.076521
SA 5-2	N: 1187916.297 E: 1408485.903										247.63	253.20	INSTALL NEW MANHOLE, 4'D PRECAST, CONNECT TO SA 5-1 AT EXISTING STUB WITH 255 LF OF 8" SDR-35 PVC, ITEM C604.044801, C604.044803, C603.990808, C604.076508
SA 5-3	N: 1188247.139 E: 1408467.824		251.18	245.35	245.45								ABANDON MANHOLE AND SEWER TO SA 3-3, ITEM C206.0602
SA 5-4	N: 1188447.039 E: 1408453.114		251.31	246.63	S: 246.49 SE: 246.49		246.53						MODIFY BENCH, REMOVE BULKHEAD, ABANDON EXISTING SEWER TO SA 5-3, ITEM C206.0602

CURB RAMP TABLE			
LOCATION	QUADRANT	TYPE	QUANTITY
C 15+71 LT	N	B	1
C 15+71 RT	S	D	1
D 10+37 LT	W	D	1
D 10+37 RT	E	B	1
D 12+40 RT	E	B	1
D 12+40 LT	W	D	1
L 10+69 LT	W	B	1
L 10+69 RT	E	B	1
L 12+72 LT	W	B	1
L 12+76 RT	E	B	1
RIVER STREET & FERRY STREET	NW	D	1
RIVER STREET & FERRY STREET	E	B	1
RIVER STREET & CORRIGAN STREET	NW	D	2
RIVER STREET & CORRIGAN STREET	NE	D	2
RIVER STREET & CORRIGAN STREET	SW	D	2
RIVER STREET & CORRIGAN STREET	SE	D	2
RIVER STREET & HINCHER STREET	NW	D	2
RIVER STREET & HINCHER STREET	NE	D	2
RIVER STREET & HINCHER STREET	SW	D	2
RIVER STREET & HINCHER STREET	SE	D	2

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PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT

LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
TELEPHONE (585) 454-6110
FACSIMILE (585) 454-3066

IN ASSOCIATION WITH:

ARCHITECT

BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT

BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT

DUFRESNE-HENRY
151 SAINT PAUL STREET
5th FLOOR
ROCHESTER, NY 14604
TELEPHONE (585) 454-2080
FACSIMILE (585) 454-2147

ENVIRONMENTAL CONSULTANT

ERDMAN ANTHONY & ASSOC., INC.
2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
TELEPHONE (585) 427-8888
FACSIMILE (585) 427-8914

GEOTECHNICAL CONSULTANT

HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT

PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (585) 218-0730
FACSIMILE (585) 218-0737

PROJECT NAME:

PORT OF ROCHESTER ACCESS ROADS AND INFRASTRUCTURE IMPROVEMENTS

PROJECT I.D. #21005
P.I.N. 4753.51

CLIENT:

CITY OF ROCHESTER AND MONROE COUNTY

BY:
DATE: *LIC. NO.:*

It is a violation of New York Education Law Article 145 Sec. 7209, for any person, unless he is acting under the direction of a licensed professional engineer or land surveyor, to alter an item in any way. If an item bearing the seal of an engineer or land surveyor is altered, the altering engineer or land surveyor shall affix to the item his seal and notation "altered by" followed by his signature and the date of such alteration, and a specific description of the alteration.

DATE	REVISION	BY
9/03	AS-BUILT	AB

DRAWING TITLE:

CONSTRUCTION TABLES

DESIGNED BY: CAE JM
DRAWN BY: EAB
CHECKED BY: CAE
APPROVED BY: SE
PROJECT NO.: 99150
CONTRACT NO.:
SCALE: NONE
DATE: MAY 2002
DWG. NO.: CT-03R
SHEET 14R *OF* 62

FILE = ...\ACCESS ROADS\4_CT03R.dgn
DATE = 8/20/2008
TIME = 9:43:39 AM

SIGN POST/SLEEVE TABLE

DWG.	STATION	OFFSET (FT.)	TYPE	
~~SS-01~~	~~F 10+53.9~~	~~22.1 LT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	ON POLE
SS-01	F 10+89	23.5 RT	INSTALL 12' SIGN POST, ITEM S686.04	
SS-01	F 11+15.0	23.5 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-01	F 13+20	23.5 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-01	F 13+53.5	16.7 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-01	R 34+00.0	20.5 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-01	R 34+00.0	20.5 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	D 10+46.5	16.3 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	D 10+61.9	23.5 LT	INSTALL 12' SIGN POST, ITEM S686.04	
SS-03	HS 15+25	21.3 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	HS 14+21.5	20.5 LT	INSTALL 10' SIGN POST, ITEM S686.03	
~~SS-03~~	~~HS 15+88.0~~	~~19.0 RT~~	~~INSTALL 10' SIGN POST, ITEM S686.03~~	N.I.C.
~~SS-03~~	~~L 10+22.6~~	~~15.5 LT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	N.I.C.
~~SS-03~~	~~L 10+62.9~~	~~16.6 RT~~	~~INSTALL 12' SIGN POST, ITEM S686.04~~	N.I.C.
SS-03	R 33+55.0	17.0 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	R 36+01.0	24.5 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	R 36+51.0	21.0 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	R 35+54.0	24.4 RT	INSTALL 10' SIGN POST, ITEM S686.03	
~~SS-03~~	~~R 36+97.8~~	~~36.4 LT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	N.I.C.
SS-03	R 37+59.7	15.9 LT	INSTALL 10' SIGN POST, ITEM S686.06 AND SLEEVE	
SS-03	R 37+73.0	23.0 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-03	R 37+73.0	23.0 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-04	R 36+32.0	23.0 LT	INSTALL 12' SIGN POST, ITEM S686.04	
SS-04	C 10+87.8	23.3 RT	INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06	
SS-04	C 11+32.0	24.0 LT	INSTALL 12' SIGN POST, ITEM S686.04	
SS-04	C 13+08.0	23.5 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-04	C 13+07.0	25.0 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-04	C 14+02.0	17.0 LT	INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06	
SS-04	C 14+18.0	23.3 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-04	C 14+18.0	23.5 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-04	R 39+19.7	22.4 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-04	R 39+19.9	22.2 LT	INSTALL 10' SIGN POST, ITEM S686.03	
~~SS-04~~	~~R 39+36.0~~	~~16.2 RT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	ON POLE
SS-04	R 40+33.2	16.5 LT	INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06	
SS-05	C 15+49.0	23.1 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-05	C 15+50.1	23.5 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-05	C 15+59.8	16.3 RT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-05	C 15+86.6	35.3 LT	INSTALL 10' SIGN POST, ITEM S686.03	
SS-05	D 12+17.7	23.3 LT	INSTALL 12' SIGN POST, ITEM S686.04	
SS-05	D 12+37.3	16.1 RT	INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06	
~~SS-05~~	~~D 12+60.7~~	~~16.5 RT~~	~~INSTALL 12' SIGN POST AND SLEEVE, ITEM S686.07~~	N.I.C.
~~SS-05~~	~~L 12+59.8~~	~~15.9 LT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	N.I.C.
~~SS-05~~	~~L 12+60.3~~	~~15.2 RT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	N.I.C.
~~SS-05~~	~~L 12+94.1~~	~~15.2 LT~~	~~INSTALL 10' SIGN POST AND SLEEVE, ITEM S686.06~~	N.I.C.
~~SS-05~~	~~L 13+27.7~~	~~15.7 RT~~	~~INSTALL 12' SIGN POST AND SLEEVE, ITEM S686.07~~	N.I.C.

MISCELLANEOUS TABLE

STATION	OFFSET	SIDE	DISPOSITION
F 10+49 TO A 3+50	30.0' 40'	LT RT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88
L 10+20 TO L 12+00	00.0' 23.0'	LT LT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88
L 12+00 TO L 12+95	00.0' 25'	RT RT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88
L 11+72 TO L 12+40	22' 34.0'	RT RT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88
R 33+70 TO R 38+30	90.0' 85.0'	LT LT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88
A 4+30 TO A 3+10	06.0' 25.0'	LT RT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88
A 4+30 TO A 3+45	06.0' 75.0'	LT LT	REMOVE AND DISPOSE WOODEN GUIDE RAIL, ITEM S606.88

MONUMENT TABLE

STATION	OFFSET (FT.)	TYPE OF MONUMENT	DISPOSITION	ITEM NUMBER
F 13+34.6	29 LT	RCS	NEW	S626.02
C 13+34.5	28 RT	RCS	NEW	S626.02
C 09+54.5	20 LT	RCS	NO WORK	-

ITEM S626.02 - HORIZONTAL CONTROL SURVEY MONUMENT, EA.

TREE REMOVAL TABLE

STATION	OFFSET	SIZE
F 12+59.0	30.0 RT	4"
F 13+00.0	37.8 RT	8" LOC.
F 13+23.8	21.0 RT	8" LOC.
F 13+33.1	20.2 RT	8" SPR.
F 14+24.8	56.0 RT	12" SPR.

REMOVAL OF TREES AND SHRUBS LESS THAN 6" DBH WILL BE PAID FOR UNDER OTHER ITEMS OF WORK.

HYDRANT TABLE

DWG.	STATION	OFFSET (FT.)	DISPOSITION
PLT-01	F 10+78.6	23.0 RT	INSTALL NEW HYDRANT ON NEW MAIN WITH 6" RESILIENT SEAT GATE VALVE, AND 6" DIP ANCHOR PIPE, ITEMS S901.0506, S903.0106, S917.01 AND S917.06
PLT-01	R 33+91.0	15.5 LT	INSTALL NEW HYDRANT ON NEW MAIN WITH 6" RESILIENT SEAT GATE VALVE, AND 6" DIP ANCHOR PIPE, ITEMS S901.0506, S903.0106, S917.01 AND S917.06
PLT-03	HS 15+54.0	20.5 LT	INSTALL NEW HYDRANT ON NEW MAIN WITH 6" RESILIENT SEAT GATE VALVE, AND 6" DIP ANCHOR PIPE, ITEMS S901.0506, S903.0106, S917.01 AND S917.06
PLT-03	HS 15+92.4	63.8 RT	REMOVE HYDRANT AND VALVE BOX, ITEM S917.05
PLT-03	R 36+60.0	15.5 LT	INSTALL NEW HYDRANT ON NEW MAIN WITH 6" RESILIENT SEAT GATE VALVE, AND 6" DIP ANCHOR PIPE, ITEMS S901.0506, S903.0106, S917.01 AND S917.06
PLT-03	L 10+47.6	185.6 RT	REMOVE HYDRANT AND VALVE BOX, ITEM S917.05
PLT-04	C 10+90.4	23.6 LT	NO WORK
PLT-04	R 39+30.7	15.5 LT	INSTALL NEW HYDRANT ON NEW MAIN WITH 6" RESILIENT SEAT GATE VALVE, AND 6" DIP ANCHOR PIPE, ITEMS S901.0506, S903.0106, S917.01 AND S917.06
PLT-05	C 15+60.1	15.5 LT	NO WORK
PLT-05	L 12+46.8	21.7 LT	REMOVE HYDRANT AND VALVE BOX, ITEM S917.05

SANITARY LATERAL LOCATION TABLE

STATION	CLEANOUT OFFSET	LATERAL DIA.
F 11+32	34.8 LT	6"
F 12+73	34.8 LT	6"
R 34+15	34.3 LT	6"
R 34+18	34.4 RT	6"
R 35+92	34.3 RT	6"
R 35+25	34.8 LT	6"
R 36+25	34.8 LT	6"
R 37+65	34.8 LT	6"
R 38+00	34.3 RT	6"
R 39+00	34.6 LT	6"
C 11+68	34.4 LT	6"
C 11+64	34.7 RT	6"
D 10+45	75.0 RT	6"

NOTE:
FITTINGS FOR SANITARY LATERALS SHALL BE INSTALLED AS THE NEW SEWER MAIN IS INSTALLED.

FIBER OPTIC PULLBOXES

DWG. NO.	STATION	OFFSET (FT)	SIZE
PL-01	F 12+36.0	25.5 RT	30"
PL-01	F 13+60.3	25.7 RT	30"
PL-01	R 33+60.0	30.5 RT	30"
PL-03	HS 14+10.0	28.0 LT	30"
PL-03	HS 14+10.2	26.6 RT	30"
PL-03	HS 15+20.0	26.4 RT	30"
PL-03	L 10+35.5	41.9 RT	30"
PL-03	R 35+50.0	30.4 RT	30"
PL-03	R 36+55.0	30.5 RT	30"
PL-03	R 37+61.0	21.3 LT	30"
PL-03	R 37+61.0	16.9 RT	30"

ITEM S686.994402 - CONCRETE PULLBOX - 30"

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DATE = 11/20/2008
TIME = 9:44:16 AM

PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
TELEPHONE (585) 454-6110
FACSIMILE (585) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
DUFRESNE-HENRY
151 SAINT PAUL STREET
5th FLOOR
ROCHESTER, NY 14604
TELEPHONE (585) 454-2080
FACSIMILE (585) 454-2147

ENVIRONMENTAL CONSULTANT
ERDMAN ANTHONY & ASSOC., INC.
2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
TELEPHONE (585) 427-8888
FACSIMILE (585) 427-8914

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (585) 218-0730
FACSIMILE (585) 218-0737

PROJECT NAME:

PORT OF ROCHESTER ACCESS ROADS AND INFRASTRUCTURE IMPROVEMENTS

PROJECT I.D. #21005
P.I.N. 4753.51

CLIENT:

CITY OF ROCHESTER AND MONROE COUNTY

BY:
DATE: *LIC. NO.:*

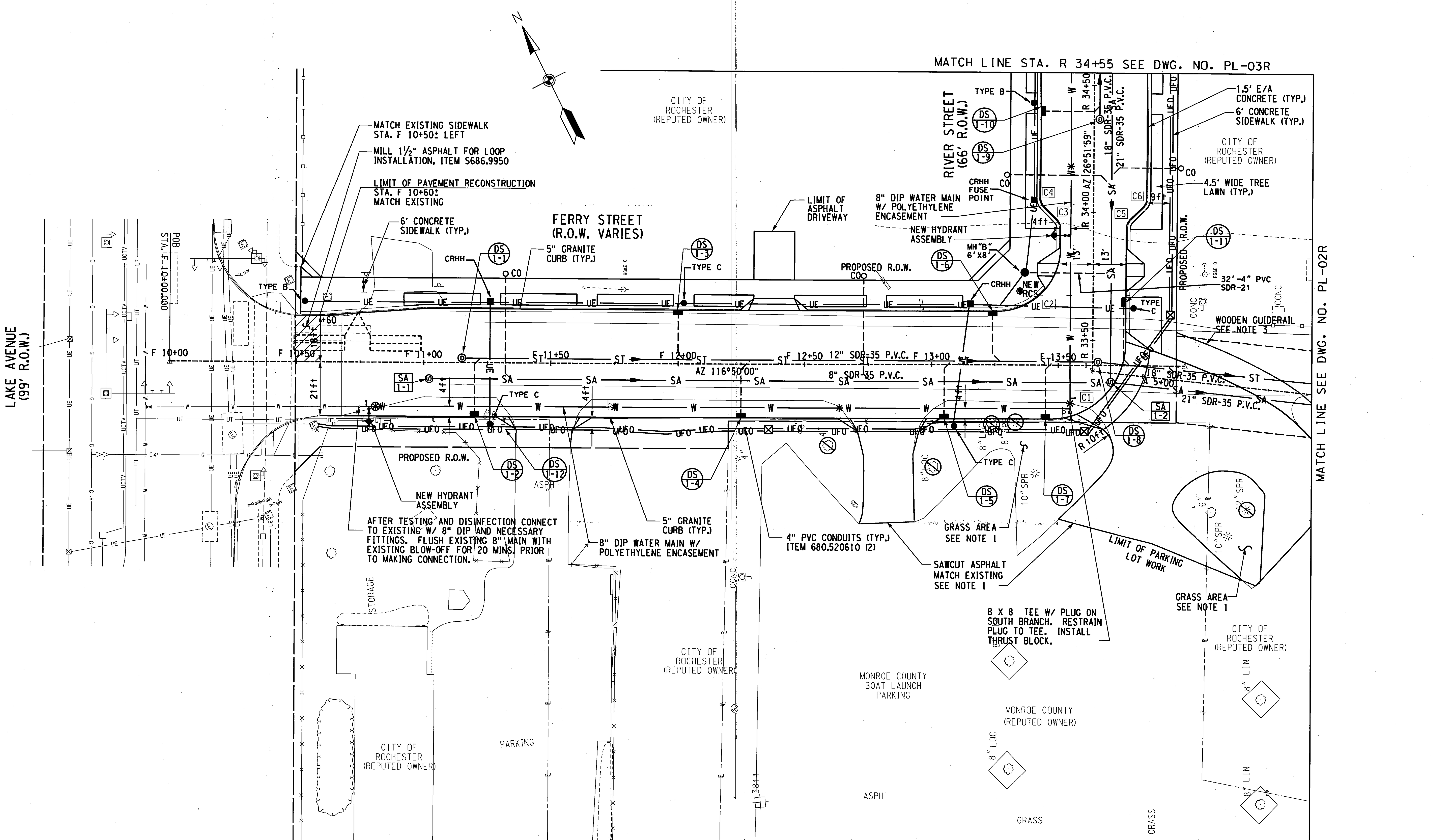
DATE	REVISION	BY
9/03	AS-BUILT	AB

DRAWING TITLE:

CONSTRUCTION TABLES

DESIGNED BY: CAE
DRAWN BY: EAB
CHECKED BY: CAE
APPROVED BY: SE
PROJECT NO.: 99150
CONTRACT NO.:

SCALE: NONE
DATE: MAY 2002
DWG. NO.: CT-04R
SHEET 15R *OF* 62R



CURVE DATA							
CURVE NO.	Δ	R	L	T	PC STA. & OFFSET	PT STA. & OFFSET	BOTTOM OF CURB EL. PC AND/OR PT
C1	90°04' LT	30'	47.2'	30.0'	F 13+46.6 21.0' R	R 33+49.1 13.0' R	262.20 / 261.93
C2	90°03' LT	25'	39.4'	25.1'	F 13+25.6 21.0' L	R 33+86.1 13.0' L	262.51 / 261.53
C3	44°51' LT	5'	3.9'	2.1'	R 33+93.6 13.0' L	R 33+97.1 14.5' L	PC 261.39
C4	45°01' RT	5'	3.9'	2.1'	R 34+02.2 19.5' L	R 34+05.7 21.0' L	PT 261.12
C5	44°57' RT	5'	3.9'	2.1'	R 33+93.9 13.0' R	R 33+97.4 14.5' R	PC 261.42
C6	44°56' LT	5'	3.9'	2.1'	R 34+02.5 19.5' R	R 34+06.0 21.0' R	PT 261.12

SIGNAL NOTES:

1. SIGNAL INDUCTANCE LOOPS SHALL BE INSTALLED IN BINDER COURSE.
2. PROPOSED SIGNAL LOOPS SHALL BE 6' X 20' QUAD 2-4-2 TURNS, PLACEMENT AS SHOWN.
3. INDUCTANCE LOOP WIRES SHALL BE CONNECTED TO EXISTING LEAD-IN CABLES.
4. THE CONTRACTOR SHALL COORDINATE THE SIGNAL LOOP INSTALLATION WITH MONROE COUNTY DEPT. OF TRANSPORTATION. CONTACT AL JENSEN (274-7932) AT LEAST TWO WEEKS BEFORE INSTALLING LOOPS.

LEGEND:

- ⊛ ITEM S966.02 - 48 POUND GALVANIC ANODE
- ✳ ITEM S966.01 - 9 POUND GALVANIC ANODE

NOTES:

1. WORK ON MONROE COUNTY BOAT LAUNCH PROPERTY:
   A. CONTRACTOR SHALL REMOVE EXISTING PAVEMENT, ITEM 203.02 AND INSTALL EMBANKMENT TO GRADE USING ITEM 203.03 - EMBANKMENT IN PLACE. (REFER TO CONTOUR PLAN LS-01) RESTORE PAVEMENT USING ITEM S608.16 - ASPHALT DRIVEWAY MEDIUM DUTY.
   B. IN GRASS AREAS, CONTRACTOR SHALL RAISE THE ELEVATION TO MATCH DRIVEWAY USING ITEM S613.02 - TOPSOIL. AFTER FINAL GRADING, AREA SHALL BE SEEDED USING ITEM S610.0501 - HYDROSEEDING.
2. REMOVAL OF EXISTING WOOD GUIDERAIL, ITEM S606.88.
3. REPLACE GUIDE RAIL AFTER RESTORATION OF PARKING LOT, ITEM S597.10.

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DATE = 11/20/2008
TIME = 9:36:34 AM

PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
TELEPHONE (585) 454-6110
FACSIMILE (585) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
DUFRESNE-HENRY
151 SAINT PAUL STREET
5th FLOOR
ROCHESTER, NY 14604
TELEPHONE (585) 454-2080
FACSIMILE (585) 454-2147

ENVIRONMENTAL CONSULTANT
ERDMAN ANTHONY & ASSOC., INC.
2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
TELEPHONE (585) 427-8888
FACSIMILE (585) 427-8914

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (585) 218-0730
FACSIMILE (585) 218-0737

PROJECT NAME:
PORT OF ROCHESTER ACCESS ROADS AND INFRASTRUCTURE IMPROVEMENTS

PROJECT I.D. #21005
P.I.N. 4753.51

CLIENT:
CITY OF ROCHESTER AND MONROE COUNTY

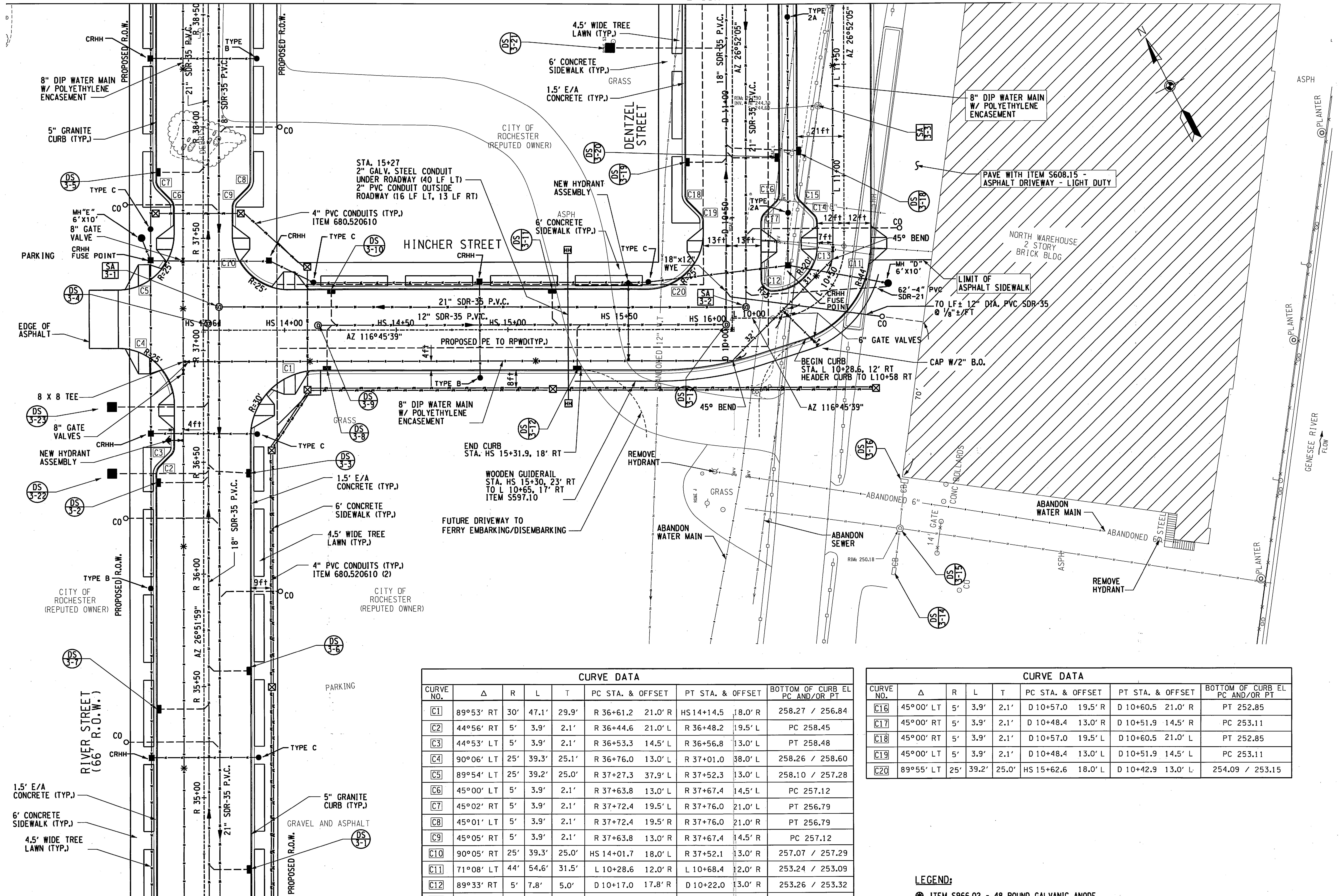
BY:
DATE: LIC. NO.:

DATE	REVISION	BY
9-03	AS-BUILT	AB

DRAWING TITLE:
HIGHWAY PLANS
R 33+38 TO R 34+55
F 10+00 TO F 13+64

DESIGNED BY: CAE
DRAWN BY: EAB
CHECKED BY: RTV
APPROVED BY: SE
PROJECT NO.: 99150
CONTRACT NO.:
SCALE: 1" = 20'
DATE: MAY 2002
DWG. NO.: PL-01R
SHEET 32R OF 62R

MATCH LINE STA. R 38+55, D 11+46 & L 11+77 SEE DWG. NO. PL-04R & PL-05R



CURVE DATA										
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C1	89°53' RT	30'	47.1'	29.9'	R 36+61.2	21.0' R	HS 14+14.5	18.0' R	258.27 / 256.84
C2	44°56' RT	5'	3.9'	2.1'	R 36+44.6	21.0' L	R 36+48.2	19.5' L	PC 258.45
C3	44°53' LT	5'	3.9'	2.1'	R 36+53.3	14.5' L	R 36+56.8	13.0' L	PT 258.48
C4	90°06' LT	25'	39.3'	25.1'	R 36+76.0	13.0' L	R 37+01.0	38.0' L	258.26 / 258.60
C5	89°54' LT	25'	39.2'	25.0'	R 37+27.3	37.9' L	R 37+52.3	13.0' L	258.10 / 257.28
C6	45°00' LT	5'	3.9'	2.1'	R 37+63.8	13.0' L	R 37+67.4	14.5' L	PC 257.12
C7	45°02' RT	5'	3.9'	2.1'	R 37+72.4	19.5' L	R 37+76.0	21.0' L	PT 256.79
C8	45°01' LT	5'	3.9'	2.1'	R 37+72.4	19.5' R	R 37+76.0	21.0' R	PT 256.79
C9	45°05' RT	5'	3.9'	2.1'	R 37+63.8	13.0' R	R 37+67.4	14.5' R	PC 257.12
C10	90°05' RT	25'	39.3'	25.0'	HS 14+01.7	18.0' L	R 37+52.1	13.0' R	257.07 / 257.29
C11	71°08' LT	44'	54.6'	31.5'	L 10+28.6	12.0' R	L 10+68.4	12.0' R	253.24 / 253.09
C12	89°33' RT	5'	7.8'	5.0'	D 10+17.0	17.8' R	D 10+22.0	13.0' R	253.26 / 253.32
C13	90°27' LT	20'	31.6'	20.2'	L 10+18.0	12.0' L	L 10+68.4	12.0' L	253.26 / 252.83
C14	45°00' LT	5'	3.9'	2.1'	L 10+79.1	12.0' L	L 10+82.6	13.5' L	PC 252.74
C15	45°00' RT	5'	3.9'	2.1'	L 10+88.7	19.5' L	L 10+92.2	21.0' L	PT 252.46

CURVE DATA									
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C17	45°00' RT	5'	3.9'	2.1'	D 10+48.4	13.0' R	D 10+51.9	14.5' R	PC 253.11
C18	45°00' RT	5'	3.9'	2.1'	D 10+57.0	19.5' L	D 10+60.5	21.0' L	PT 252.85
C19	45°00' LT	5'	3.9'	2.1'	D 10+48.4	13.0' L	D 10+51.9	14.5' L	PC 253.11
C20	89°55' LT	25'	39.2'	25.0'	HS 15+62.6	18.0' L	D 10+42.9	13.0' L	254.09 / 253.15

LEGEND:

- ⊛ ITEM S966.02 - 48 POUND GALVANIC ANODE
- ✳ ITEM S966.01 - 9 POUND GALVANIC ANODE

MATCH LINE STA. R 34+55 SEE DWG. NO. PL-01R

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PORT OF ROCHESTER HARBOR AND FERRY TERMINAL IMPROVEMENTS PROJECT TEAM:

ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
TELEPHONE (585) 454-6110
FACSIMILE (585) 454-3066

IN ASSOCIATION WITH:

ARCHITECT
BTA ARCHITECTS, INC.
ONE STORY STREET
CAMBRIDGE, MA 02138
TELEPHONE (617) 876-4300
FACSIMILE (617) 661-9213

MARINE CONSULTANT
BOURNE CONSULTING ENGINEERING
184 WEST CENTRAL STREET
FRANKLIN, MA 02038
TELEPHONE (508) 528-8133
FACSIMILE (508) 520-6671

LANDSCAPE ARCHITECT
DUFRESNE-HENRY
151 SAINT PAUL STREET
5th FLOOR
ROCHESTER, NY 14604
TELEPHONE (585) 454-2080
FACSIMILE (585) 454-2147

ENVIRONMENTAL CONSULTANT
ERDMAN ANTHONY & ASSOC., INC.
2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
TELEPHONE (585) 427-8888
FACSIMILE (585) 427-8914

GEOTECHNICAL CONSULTANT
HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
SUITE 306
ROCHESTER, NY 14618-4611
TELEPHONE (585) 218-0730
FACSIMILE (585) 218-0737

PROJECT NAME:

PORT OF ROCHESTER ACCESS ROADS AND INFRASTRUCTURE IMPROVEMENTS

PROJECT I.D. #21005
P.I.N. 4753.51

CLIENT:

CITY OF ROCHESTER AND MONROE COUNTY

BY:
DATE: *LIC. NO.:*

DATE	REVISION	BY
9/03	AS-BUILT	AB

DRAWING TITLE:

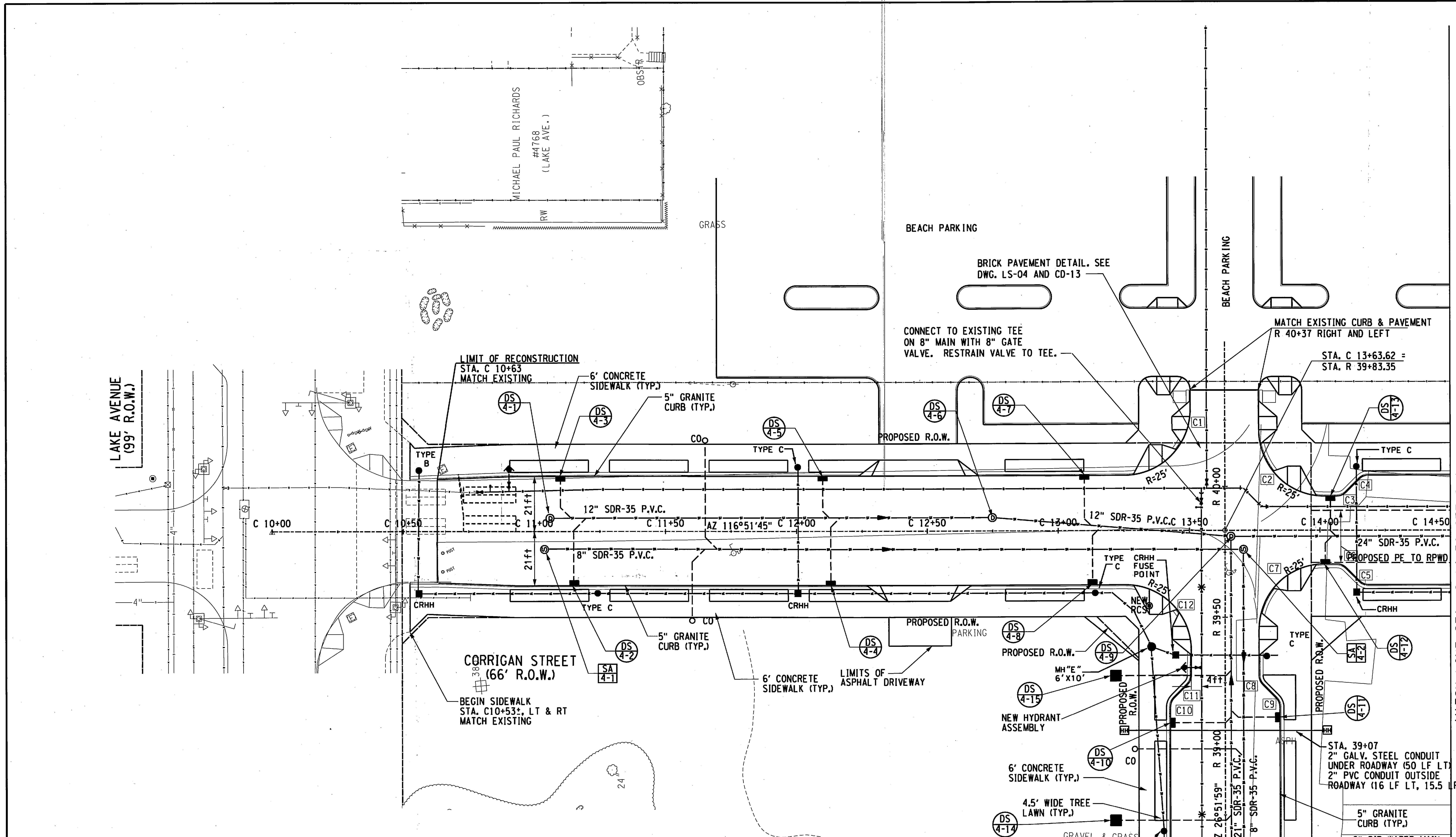
HIGHWAY PLANS R 34+55 TO R 38+55 HS 13+64 TO HS 16+01 D 10+00 TO D 11+46 L 10+00 TO L 11+77

DESIGNED BY: CAE
DRAWN BY: EAB
CHECKED BY: RTV
APPROVED BY: SE
PROJECT NO.: 99150
CONTRACT NO.:

SCALE: 1" = 20'
DATE: MAY 2002

DWG. NO.: PL-03R

SHEET 34R *OF* 62R



CURVE DATA							
CURVE NO.	Δ	R	L	T	PC STA. & OFFSET	PT STA. & OFFSET	BOTTOM OF CURB EL. PC AND/OR PT
C1	90°00' LT	25'	39.3'	25.0'	C 13+25.6 21.0 L	R 40+29.3 13.0' L	255.37/255.10
C2	90°00' RT	25'	39.3'	25.0'	C 14+01.6 13.0' L	R 40+21.4 13.0' R	254.16/254.75
C3	44°57' LT	5'	3.9'	2.1'	C 14+06.5 13.0' L	C 14+10.0 14.5' L	PC 254.12
C4	44°57' RT	5'	3.9'	2.1'	C 14+15.1 19.5' L	C 14+18.6 21.0' L	PT 253.90
C5	45°01' LT	5'	3.9'	2.1'	C 14+15.1 19.5' R	C 14+18.6 21.0' R	PT 253.90
C6	45°00' RT	5'	3.9'	2.1'	C 14+06.5 13.0' R	C 14+10.0 14.5' R	PC 254.12
C7	90°00' RT	25'	39.3'	25.0'	R 39+45.4 13.0' R	C 14+01.6 13.0 R	254.57/254.16
C8	45°01' RT	5'	3.9'	2.1'	R 39+24.3 14.5' R	R 39+27.8 13.0' R	PT 254.82
C9	45°00' LT	5'	3.9'	2.1'	R 39+15.7 21.0' R	R 39+19.2 19.5' R	PC 254.83
C10	44°59' RT	5'	3.9'	2.1'	R 39+15.7 21.0' L	R 39+19.2 19.5' L	PC 254.83
C11	44°59' LT	5'	3.9'	2.1'	R 39+24.3 14.5' L	R 39+27.8 13.0' L	PT 254.82
C12	90°00' RT	25'	39.3'	25.0'	C 13+25.6 21.0' R	R 39+37.4 13.0' L	255.37/254.99

LEGEND:

⊛ ITEM S966.02 - 48 POUND GALVANIC ANODE

* ITEM S966.01 - 9 POUND GALVANIC ANODE

SIGNAL NOTES:

1. SIGNAL INDUCTANCE LOOPS SHALL BE INSTALLED IN BINDER COURSE.
2. PROPOSED SIGNAL LOOPS SHALL BE 6' X 20' QUAD 2-4-2 TURNS, PLACEMENT AS SHOWN.
3. INDUCTANCE LOOP WIRES SHALL BE CONNECTED TO EXISTING LEAD-IN CABLES.
4. THE CONTRACTOR SHALL COORDINATE THE SIGNAL LOOP INSTALLATION WITH MONROE COUNTY DEPT. OF TRANSPORTATION. CONTACT AL JENSEN (274-7932) AT LEAST TWO WEEKS BEFORE INSTALLING LOOPS.

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ENGINEER - ARCHITECT
LABELLA ASSOCIATES, P.C.
300 STATE STREET
ROCHESTER, NY 14614
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184 WEST CENTRAL STREET
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LANDSCAPE ARCHITECT
DUFRESNE-HENRY
151 SAINT PAUL STREET
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2165 BRIGHTON- HENRIETTA T.L. RD.
ROCHESTER, NY 14623-2755
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HALEY & ALDRICH
200 TOWN CENTER DRIVE, SUITE 2
ROCHESTER, NY 14623-4264
TELEPHONE (585) 359-9000
FACSIMILE (585) 359-4650

ELECTRICAL CONSULTANT
PATHFINDER ENGINEERS, LLP
3300 MONROE AVENUE
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ROCHESTER, NY 14618-4611
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P.I.N. 4753.51

CLIENT:

CITY OF ROCHESTER AND MONROE COUNTY

BY: ______
DATE: ______ LIC. NO.: ______

DATE	REVISION	BY
9/03	AS-BUILT	AB

DRAWING TITLE:

HIGHWAY PLANS
R 38+55 TO R 41+75
C 10+00 TO R 14+50

DESIGNED BY: CAE
DRAWN BY: EAB
CHECKED BY: RTV
APPROVED BY: SE
PROJECT NO: 99150
CONTRACT NO:

SCALE: 1" = 20'
DWG. NO: PL-04R

DATE: MAY 2002
SHEET 35R OF 62

Appendix 9

City of Rochester Developer's Guide

City of Rochester New York Developers Guide

INTRODUCTION: The Development Process

Clean air, pure water, unpolluted land, accessible streets, and safe, sound and attractive buildings are among the expectations of the people of Rochester. Residents recognize that development and rehabilitation projects are both necessary and desirable. To meet these goals, the City encourages and assists prospective developers and enforces environmental, zoning and construction standards. This document describes permits required and review processes most frequently involved with major construction and rehabilitation projects in the City of Rochester. The document is organized by department and agency, with the permits and reviews each administers, listed and explained. The City has simplified its development review and approval process by creating a Centralized Permit Office located in Room 121B of City Hall. In this one location, a developer may apply for a variety of permits, thus reducing the number of offices to be visited.

Included in this document is a flowchart which graphically represents the overall review process from beginning to end. To expedite this process, all steps on the same horizontal level should be completed simultaneously. Referring to the chart, all areas (except STATE & COUNTY ENVIRONMENTAL REVIEWS) make use of the Central Permit Office and applications for each step of the process may be obtained there. A department directory appears at the end of this document. You can use either the chart or the table of contents below to follow the development process with the City of Rochester.

For information on development possibilities, contact the Department of Economic Development (industrial) at (585) 428-6965 or the Bureau of Buildings and Zoning at (585) 428-6526.

DEVELOPMENT PROCESS IN THE CITY OF ROCHESTER, NEW YORK

<table>
<tr><td colspan="3">OPTIONAL DEVELOPMENT CONFERENCE WITH BUREAU AND AGENCY REPRESENTATIVES</td></tr>
<tr><td colspan="3">APPLICATION FOR CERTIFICATE OF ZONING COMPLIANCE</td></tr>
<tr><td colspan="2">STATE & COUNTY
ENVIRONMENTAL REVIEW
Monroe County Pure Waters
Monroe County Department of Health
NYS Department of Environmental Conservation</td><td>CITY ZONING AND
ENVIRONMENTAL REVIEWS
Division of Zoning</td></tr>
<tr><td colspan="3">ISSUANCE OF CERTIFICATE OF ZONING COMPLIANCE</td></tr>
<tr><td colspan="3">BUILDING AND CONSTRUCTION REVIEWS</td></tr>
<tr><td>DEPARTMENT OF
COMMUNITY
DEVELOPMENT
Building Code Review
Plumbing Code Review
Electrical Permits
Elevator Permits</td><td>DEPARTMENT OF
ENVIRONMENTAL
SERVICES
Engineering Services Permits</td><td>FIRE DEPARTMENT
Fire Safety Division</td></tr>
<tr><td colspan="3">ISSUANCE OF BUILDING PERMIT</td></tr>
<tr><td colspan="3">INSPECTION OF CONSTRUCTION & ISSUANCE OF CERTIFICATE OFOCCUPANCY
BY THE BUILDING INSPECTION DIVISION</td></tr>
</table>

DEVELOPER'S GUIDE TABLE OF CONTENTS

ZONING AND ENVIRONMENTAL REVIEWS

Department of Community Development Bureau of Buildings and Zoning/Division of Zoning Room 125B, City Hall (585) 428-7043

Certificate of Zoning Compliance (Zoning Code: Section 120-189)

Prior to applying for building permits, the developer submits plans and completes an application for a Certificate of Zoning Compliance (CZC). If the project complies with all zoning standards, the application is approved and the developer may then proceed with application for building and construction permits. If the application is denied, the developer may choose to revise the plans or pursue one or more of the following special processes: site plan review, variance, special permit, certificate of appropriateness, etc. Most of these processes would require the filing of an Environmental Assessment Form (EAF).

Site Plan Review (Zoning Code: Section 120-191D)

Site Plan Review is the examination of the design elements of development proposals to ensure that a project does not adversely affect the site or adjacent properties. It is also a vehicle to assist applicants by alerting them to any deficiencies which should be corrected prior to development. Most major projects are subject to this review. Typically, the process requires submission of detailed site plans, landscape plans, building elevations, an Environmental Assessment Form and possible other information about the project, as required by the Director of Zoning.

If a proposal requires site plan review as well as another zoning special process such as a variance, special permit or Certificate of Appropriateness, the site plan review process precedes the public process. The Director of Zoning must issue Preliminary Site Plan Findings and Notice of Environmental Determination prior to the application for the special process.
The preliminary findings identify zoning requirements, project deficiencies and recommended modifications. These findings will accompany the required special process application for the Boards/Commission's review. The Final Site Plan Decision will incorporate any Board/Commission conditions.

Zoning Variance (Zoning Code, Section 120-195B)

A variance is a procedure by which waivers of certain requirements of the Zoning Code are considered by the Zoning Board of Appeals. There are two types of variances: use variance and area variance.
The application should include floor plans, site plan, elevations and a copy of the preliminary site plan findings as issued by the Director of Zoning when site plan review is required. After plans and applications are submitted, the Zoning Board conducts a public hearing at which the applicant's attendance is required. The Board then votes to grant or deny the variance. A decision letter will be issued within ten (10) days of the Board's determination. Due to public notification requirements, the applicant should allow 6 - 8 weeks from the date the application is filed for the Board's decision. If the project requires site plan review, the applicant must wait for the Final Site Plan Approval letter issued by the Director of Zoning. The applicant must post a sign provided by the City, at least twenty (20) days prior to the meeting date.

Rezoning (Zoning Map Amendment) (Zoning Code: Section 120-190C)

This process involves a revision of an area's zoning classification and requires City Council approval.
After the application is submitted, the City Planning Commission holds a public informational meeting, at which the applicant's presence is required. The Commission then makes a recommendation to City Council. City Council conducts a public hearing and votes on the proposal to amend the Zoning Map. The applicant should allow 10-12 weeks for the entire process. The applicant must post a sign provided by the City, at least twenty (20) days prior to the meeting date.

Special Permits (Zoning Code: Section 120-192B)

For certain permissible uses which may have a special impact, the developer must obtain a special permit. A site plan review is required for every special permit application. The application typically includes site plans, floor plans, landscape plans, building elevations, an Environmental Assessment Form and a copy of the Preliminary Site Plan Findings issued by the Director of Zoning. After the plans and a completed application are submitted, the City Planning Commission conducts a public hearing which the applicant or designated representative must attend. Subsequent to the public hearing the Planning Commission makes a decision. A decision letter will be issued within one (1) week of the Planning Commission's determination. Due to the public notification requirements, the applicant should allow 6 - 8 weeks for the entire process. If the project requires site plan review, the applicant must wait for the Final Site Plan Approval letter issued by the Director of Zoning. The applicant must post a sign provided by the City, at least twenty (20) days prior to the meeting date.

Certificate of Appropriateness (Zoning Code: Section 120-194A)

If the project will involve exterior work on a Landmark or on property within a Preservation District, a Certificate of Appropriateness must be approved by the Rochester Preservation Board.

A typical application includes site plans, floor plans, landscape plans, building elevations, material samples, color charts, photographs and possibly a completed Environment Assessment Form. After submission of the plans and application, the Board holds a public hearing which the applicant or designated representative must attend. The Board usually makes its decisions within 4 - 5 weeks of the date the application is submitted unless the Board requests additional information pertaining to the application. If the project requires site plan review, the applicant must wait for the Final Site Plan Approval letter issued by the Director of Zoning. The applicant must post a sign provided by the City, at least twenty (20) days prior to the meeting date.

Subdivisions (Land Subdivision Regulations - Chapter 128 of the Municipal Code)

Some projects which involve the conveyance of land or the use of more than one (1) lot, must be reviewed as a subdivision or resubdivision and be approved by either the City Planning Commission or the Director of Zoning. Site plan review is required for every subdivision application.

There are three types of subdivisions: exempt subdivision, subdivision and resubdivision.

Exempt Subdivision - A subdivision of fewer than five (5) lots with the Director of Zoning having approval authority. Lots must have street frontage and access to qualify.

Resubdivision - Revision of an existing filed plat (map) including subdivisions and minor transfer of land. A minor transfer of land is the procedure by which two (2) or more lots are combined or lot lines are altered such that it does not result in an increase in the number of lots.

Subdivision - Procedure by which one (1) or more lots is divided, thereby increasing the total number of lots. The City Planning Commission has approval authority of subdivisions of five (5) or more lots and other non-exempt subdivisions.

If the project creates one (1) or more new tax accounts or lots, the applicant must submit a subdivision or re-subdivision map (scaled to not less than two (2) inches equaling one (1) mile) prepared by a licensed surveyor. If five (5) or more lots are created, an Environmental Assessment Form must be submitted.

Certification of approval by the Monroe County Department of Health must also be submitted in the case of realty subdivisions created as defined pursuant to Article III of the Monroe County Sanitary Code. In order to receive approval by Monroe County Department of Health, an applicant must show methods of obtaining and furnishing adequate and satisfactory water supply and sewage facilities to the subdivision. The applicant must also supply information regarding the nature and condition of the soil to absorb sewage, the depth to ground water and bedrock, the topography of the land, and the arrangements for proper drainage and disposal of surface water. Applicants should contact the Monroe County Department of Health directly for a complete set of requirements for approval. Prepaid tax certificates from the County and City are required as part of the submission.

The applicant should allow 6 - 8 weeks following submittal of a complete subdivision application for the processing of a case requiring a hearing. If no hearing is necessary, a decision should be available in 1 - 3 weeks.

Official Map Amendment (Zoning Code: Section 115-37)

The Official Map is a subsidiary part of the Comprehensive Plan and indicates the location and width of >streets and the location of parks as laid out and adopted. An amendment to the Official Map may be initiated by filing a completed application with the Division of Zoning, which coordinates a review process involving several agencies, and schedules a City Planning Commission informational meeting. Typical examples of Official Map Amendments include street dedications and abandonments, right-of-way changes, street naming and dedication of city parks.

Amendments to the Official Map can be made only by City Council by the adoption of an ordinance after a Public Hearing. The City Planning Commission makes a recommendation to the City Council on all Official Map Amendment applications. The applicant should allow 10 -12 weeks for the entire process.

Environmental Assessment (New York State Environmental Quality Review (SEQR) Act and Chapter 48 of the Municipal Code)

The decision making body (i.e. Director of Zoning, Zoning Board, Planning Commission, Preservation Board, etc.) has the responsibility for making determinations and administering the local environmental Code as well as SEQR Act of New York. Most projects require Environmental Review.

The first step is completion of an Environmental Assessment Form (EAF) by the applicant. On the basis of the EAF, an environmental assessment is prepared: this is reviewed by the decision making body. If the decision making body determines that the project will not have a significant environmental impact, a Determination of Environmental non-significance is issued and the remaining project reviews continue (i.e. variance, special permit, Certificate of Appropriateness, etc.)

If the decision making body determines that the project may significantly and adversely affect the environment, an Environmental Impact Statement (EIS) is required. The developer prepares and submits a "Draft EIS" following a Public Hearing, the "Final EIS" is prepared. This is used by the decision making body in making is final decision. The EIS process, if applicable, takes a minimum of 12 - 16 weeks.

Monroe County Pure Waters
350 E. Henrietta Road (585) 274-7838

Rochester Pure Waters District Permit

If the proposed project will result in additional storm or sanitary discharge, new connections to sewers and all sanitary combination storm sewer extensions must be approved and a permit obtained from Pure Waters. Initially, one set of complete plans and forms are required, and shall include:

A site plan showing existing and proposed utilities and street sewers (minimum plan size 17" x 22");

Interior plumbing plans, including sizes of pipes for industrial and commercial projects;

Other drawings as required to describe the project.

All required forms as per requirement and any special pre-treatment (if applicable) for all privately constructed sewer in the Rochester Pure Waters District.

The applicant should allow 15 days for initial review of plans. Prior to final approval, four additional sets of plans shall be submitted. These will be stamped and two (2) sets will be returned to the applicant for distribution as the project is reviewed by the Bureau of Buildings and Zoning. The other two (2) sets will remain in Pure Waters files. (Rochester Pure Waters District will administer the sewer construction of the proposed extension.)

Permits will be issued to licensed plumbers when the following conditions have been met:

Applications for new connections have been approved by the Rochester Pure Waters District and a stamped copy of the drawing has been submitted to the Permit Office.

Submission of an acceptable certificate of insurance meeting the District's requirements.

Submittal of an acceptable $5,000.00 plumbers permit bond meeting the District's requirements.

Payment of all applicable permit fees.

Permits shall be signed by the licensed plumber or his/her authorized designee. Sewer connection permits shall be in effect for a one year period commencing on the date of issuance.

Monroe County Department of Health
111 Westfall Road (585) 274-6811

Health Department Permits

If the proposed project will include:

Food service establishments;
Temporary residences (children's camps and mass gatherings);
Sanitary or combined sewer extensions;
Water main extensions;
Realty subdivision;
On-site sewage disposal;
Public swimming pools;
Water supply-cross-connection protection;
Development on a former waste/fill site,

Tthe developer should contact the Division of Environmental Health of the Monroe County Department of Health. The Health Department reviews construction plans to ensure that minimum health standards are met.

In the case of subdivisions, water main extensions and sewer extensions, the Department acts on behalf of the State Departments of Health and Environmental Conservation as required by Part 5 of the State Sanitary Code and Health and Environmental Conservation Laws.

New York State Departments of Environmental Conservation (NYSDEC) and Health (NYSDOH)

The Bureau of Planning can usually inform the developer of NYSDEC or NYSDOH permits which may apply to the project. It is the developer's responsibility, however, to contact those agencies and apply for and receive the necessary permits. Application forms are available from any NYSDEC or NYSDOH office.

NYSDEC Permits6274 East Avon-Lima Road (585) 226-2466

Permits are required if the proposed project includes:

Sources of air contamination within the City boundary;
Disposal, storage and treatment of solid and hazardous waste;
Any work in a protected freshwater wetland;
Dredging and filling in protected rivers, creeks and lakes;
Transport of hazardous and non-hazardous wastes;
Pesticide application.

New York State Department of Health Permits (NYSDOH)
42 S. Washington Street (585) 423-8070

Permits are required if the project includes:

Laboratory facilities;
Health or medical facilities

As noted under the Monroe County Department of Health "Health Department Permits" section, certain NYSDEC permits and NYSDOH permits -- Realty Subdivision Approval, Water Supply Approval -- are obtained through the Monroe County Department of Health, which has been delegated authority to issue these permits by these agencies.

BUILDING AND CONSTRUCTION

Department of Environmental Services (DES)Permits OfficeRoom 121B, City Hall(585) 428-6848

New subdivision and re-subdivision applications require the review and approval of the City Engineer prior to any permits being issued.

New Streets - Any new subdivisions, including the construction of a new street, will require the following:

Submission of three (3) sets of professional licensed engineer stamped plans;
New street permit;
Certificate of Liability and Worker's Compensation Insurance;
Letter of Credit (amount to be determined by the City Engineer).

Upon final acceptance by the City Engineer, the applicant must submit a separate two (2) year Guarantee Bond or Letter of Credit in the amount of twenty-five (25) percent of the estimated cost of the public work; as determined by the City Engineer.

Street Opening Permit - If the project involves a sanitary/combination sewer, sewer or water service connection, an approved contractor must obtain all necessary street opening permits in conjunction with the utility service connection permits.

Connection permits may be obtained from:

Monroe County Pure Waters - Sewers - 274-8100
City of Rochester Water Bureau - Water Dispatch - 428-7500
D.E.S. Permit Office - Excavations - 428-6848

Stake Outs - New York State Industrial Code Rule 53 The DES Permit Office maintains the Central Registry for the City of Rochester. The Central Registry is a master list of all operators or owners of underground facilities within the City. The City maintains this list in accordance with New York State Industrial Code Rule 53. All excavators are responsible for notifying all utility operators with facilities n the area to be excavated at least two (2) full working days before digging.

The Central Registry can be inspected at the DES Permit Office or a copy may be obtained for a nominal charge. The DES Permit Office is located at:

Department of Environmental Services Permit Office, Room 121B
City Hall 30 Church Street Rochester, New York 14614

All operators of underground facilities in the area should be notified to request stake outs. Contractors should refer to the Central Registry listing. Their names and the areas where their facilities are located are listed in the Central Registry. Contractors can telephone UFPO at 1-800-962- 7962 to request a stake out from these major agencies:

City of Rochester Water Bureau
City of Rochester Street Lighting System
Rochester Gas and Electric Corporation
Rochester Telephone Corporation
Greater Rochester Cablevision
Monroe County Water Authority
Rochester District Heating
Monroe County Department of Transportation - Signal Division
Eastman Kodak Company
The University of Rochester

Excavation Permits The DES Permit Office will issue separate excavation permits in conjunction with Monroe County Pure Waters for any work within the City of Rochester right-of-way. The following conditions must be met to obtain a permit:

Submission of three (3) sets of stamped plans;

A minimum security deposit of $1,000 in the form of a letter of credit, certified check or cash. The security deposit requirement may increase when determined to be appropriate by the City Engineer.

Certificate of Liability Insurance, Worker's Compensation and Disability Coverage naming the City of Rochester as additional insured.

The excavation permit fee.

Other Permits Permit applicants are responsible for obtaining all other required permits such as Monroe County Pure Waters, NYSDOT, U.S. Army Corps of Engineers, Railroads.

The Rochester Water Bureau requires Hydrant Use Permits be obtained by the permit holder prior to using any hydrant as a source of water supply. The permit requires the use of a water meter and backflow preventer. The Water Bureau will supply a hydrant wrench, water meter, meter setting and backflow preventer. These permits are available at the City of Rochester Water Bureau, Customer Service Office, 10 Felix Street, Rochester, New York. The telephone number is (585) 428-7506

Department of Community Development
Bureau of Buildings and Zoning
Plan Review and Inspection Division
125B, City Hall (585) 428-6526

Building Permits A building permit must be obtained before any plans to construct, reconstruct, add to, alter, remodel, demolish or change use of a structure may be carried out.

Prior to applying for a building permit, the developer shall have all necessary approvals from the Division of Zoning as well as Monroe County Department of Health, the New York State Department of Environmental Conservation and Rochester Pure Waters District. In addition, the permit will not be issued until required permits and approvals have been obtained from the City Plumbing Division, Department of Environmental Services and Fire Safety Division of the Fire Department.

The building permit application must be accompanied by:

Three sets of detailed construction plans if project cost is $100,000 or more, (two (2) sets if under $100,000), certified by a licensed engineer, architect or owner-designed;

One copy of a site plan approved by the Division of Zoning;

A current certificate of insurance detailing worker's compensation and disability coverage (naming the City as Certificate Holder).

Processing of completed applications usually occurs within fifteen (15) working days, but may be longer for major projects.

If the building permit application is denied, the developer may choose to revise the plans or pursue the process of appeal by submitting a petition to the New York State Board of Review. The applicant should allow a minimum of 12 weeks for a Board of Review Decision.

Plumbing Permits After obtaining all approvals from the Water Bureau, Engineering Bureau, and Pure Waters, a licensed plumber must obtain a permit from the City of Rochester Permit Office in order to perform interior and exterior plumbing work or site work. If the interior structure will be affected by the new plumbing the applicant shall submit one set of mechanical plumbing plans with the application. Connection permits must also be obtained from the Rochester Pure Waters District, City of Rochester Water Bureau and the City's Department of Environmental Services Engineering Permit Office prior to making any connections. Work performed will be inspected and approved by a City of Rochester Plumbing Inspector.

Electrical Permits If electrical work is required for the project, the developer must hire an electrician licensed by the City of Rochester.

Prior to the commencement of work, the licensed electrician is required to apply for an electrical permit from the City. Upon completion of the job and all necessary inspections from the City of Rochester Electrical Inspector, the electrician obtains a certificate of compliance. Work performed will be inspected and approved by a City of Rochester Electrical Inspector.

Fire Safety Permits The Fire Safety Division of the Fire Department reviews plans for construction of all new commercial and multiple dwelling structures, installation of fire alarm systems and fire suppression systems.
To expedite the review process, joint plan reviews are conducted by the Fire Safety Division and the Division of Buildings. Where potentially harmful conditions exist, the Fire Safety Division also reviews permits to maintain, change use of, or remodel a structure.

Elevator Permits Prior to the installation or modification of any conveyance, an elevator permit must be obtained from the City. Applications must be applied for by a licensed installer or maintenance company. Inspections are performed by a licensed inspection agency. Plans and specifications must accompany the application.

Demolition Permits Prior to the razing, disassembly or removal of any structure, essential element of any structure or the removal of any debris, a permit shall be obtained from the Permit Office.

The permit application must be accompanied by:

Site plan or tape location map.
Building material disposal plan.
Photographs of all exterior elevations.
Environmental Assessment Form.
Certificate of Worker's Compensation specifically stating that demolition work is covered
Certificate of rodent control.
Performance Guarantee.
Proposal for site development.
Approved safe school route and pedestrian access plan.
Construction photos of any pre-existing damage to the public right-of-way.
Maintenance and Protection of Traffic plan when work will obstruct the right-of-way.

Certificate of Occupancy (Zoning Code: Section 120 and Building Code: Chapter 39, Section 214-219) Once construction has been completed, the developer must obtain a Certificate of Occupancy. This procedure involves:
A written application, filed at the time of permit application;
An inspection of the property by the Building Construction Inspector;
Final electrical, plumbing and/or elevator inspection approvals;
Fire safety approval.

Following the inspection, the applicant should allow 10 days to receive the Certificate

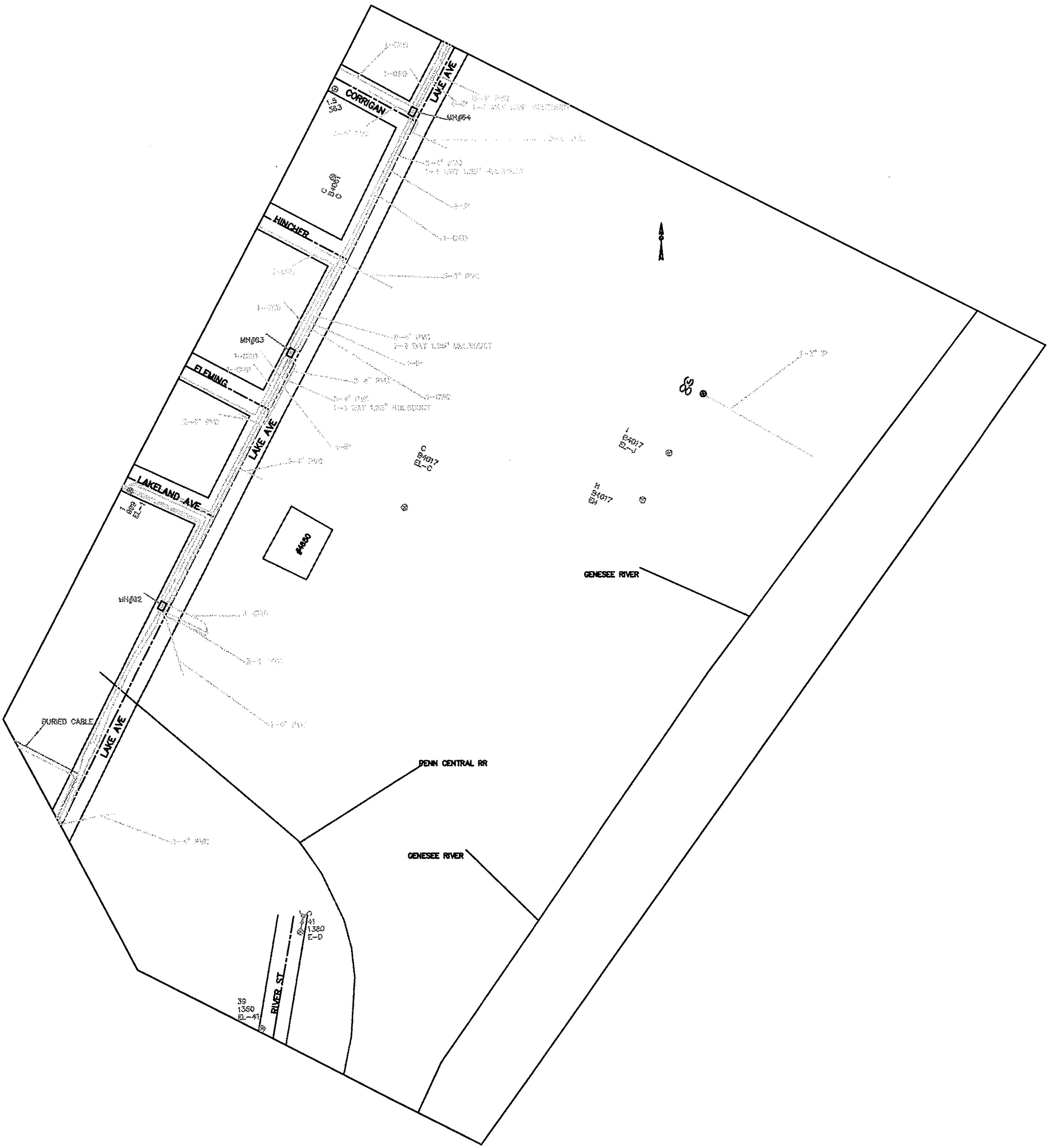
DIRECTORY

- City Hall 30 Church Street Rochester, New York 14614
- Bureau of Buildings and Zoning Permit Office, Department of Community Development Room 121-B, City Hall (585) 428-6526
- Bureau of Buildings and Zoning Division of Zoning, Department of Community Development Room 125-B, City Hall (585) 428-7043
- Bureau of Buildings and Zoning Plan Review and Inspection Division, Department of Community Development Room 125-B, City Hall (585) 428-6561
- Bureau of City Planning Department of Community Development Room 010-A, City Hall (585) 428-6924
- Department of Environmental Services Permit Office Room 121-B, City Hall (585) 428-6848
- Department of Environmental Services Water Bureau10 Felix Street Rochester, New York 14613 (585) 428-7567
- Department of Economic Development Room 005-A, City Hall (585) 428-6808
- New York State Department of Environmental Conservation (NYSDEC) 6274 East Avon-Lima Road Avon, New York 14414 (585) 226-2466
- New York State Department of Health (NYSDOH) 42 S. Washington Street Rochester, New York 14608 (585) 423-8070
- Monroe County Department of Health Division of Environmental Health111 Westfall Road Rochester, New York 14692 (585) 274-6811
- Monroe County Pure Waters Permit Office 350 E. Henrietta Road Building 15 Rochester, New York 14620 (585) 753-7600
- Rochester Pure Waters District Office of Development Review 350 E. Henrietta Road Rochester, New York 14620 (585) 753-7600

Appendix 10

Utility Company Drawings

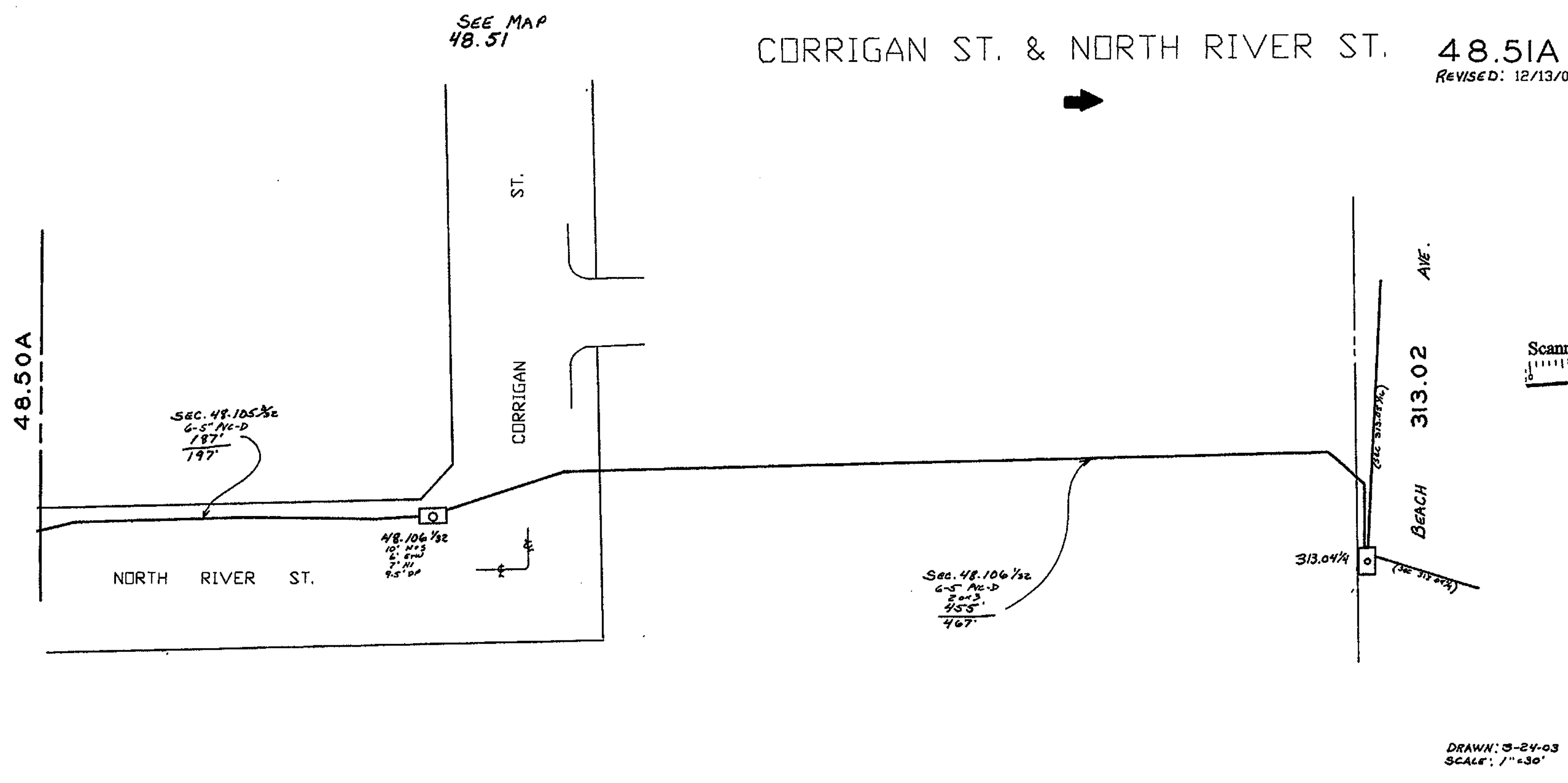
Frontier Communications
Record Drawing



CORRIGAN ST. & NORTH RIVER ST. 48.51A

REVISED: 12/13/04

RG&E Record Drawings



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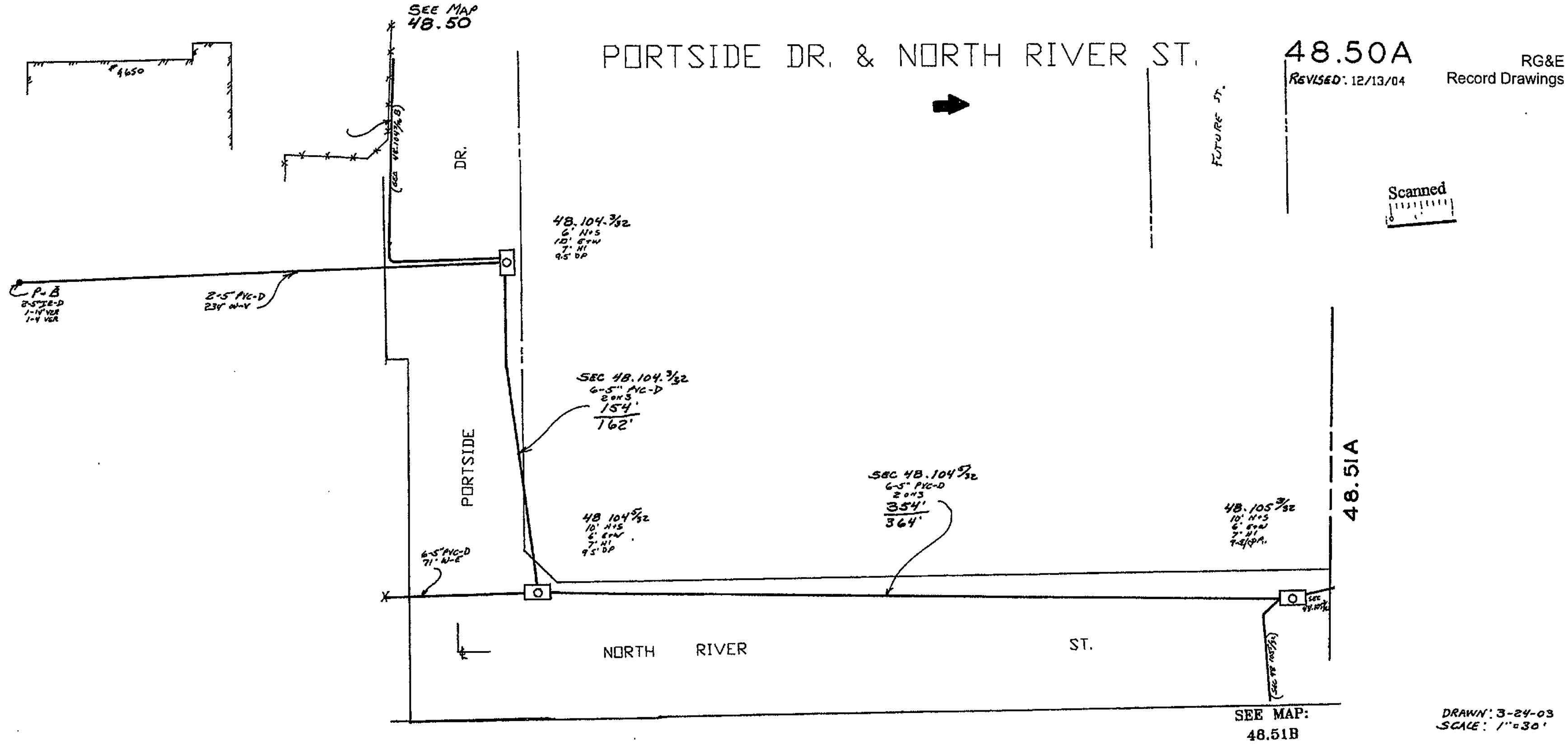
YOUR ATTENTION IS SPECIFICALLY DIRECTED TO THE FACT THAT BY SUBMITTING THESE DRAWINGS, THE ROCHESTER GAS AND ELECTRIC CORPORATION UNDER NO CIRCUMSTANCES GUARANTEES THE ACCURACY OF THE LOCATIONS OF GAS, ELECTRIC OR STEAM FACILITIES SHOWN ON THESE DRAWINGS. IT IS ALSO IMPERATIVE THAT ANY MAPS PREPARED FROM THIS INFORMATION MUST CONTAIN A SPECIFIC NOTATION STATING THAT ALL LOCATIONS OF THIS CORPORATION'S FACILITIES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BEFORE ANY DIGGING COMMENCES

ISSUED BY: ELECTRIC MAPS

DATE: 9/30/2008

PHONE 771 4323



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ISSUED BY: ELECTRIC MAPS

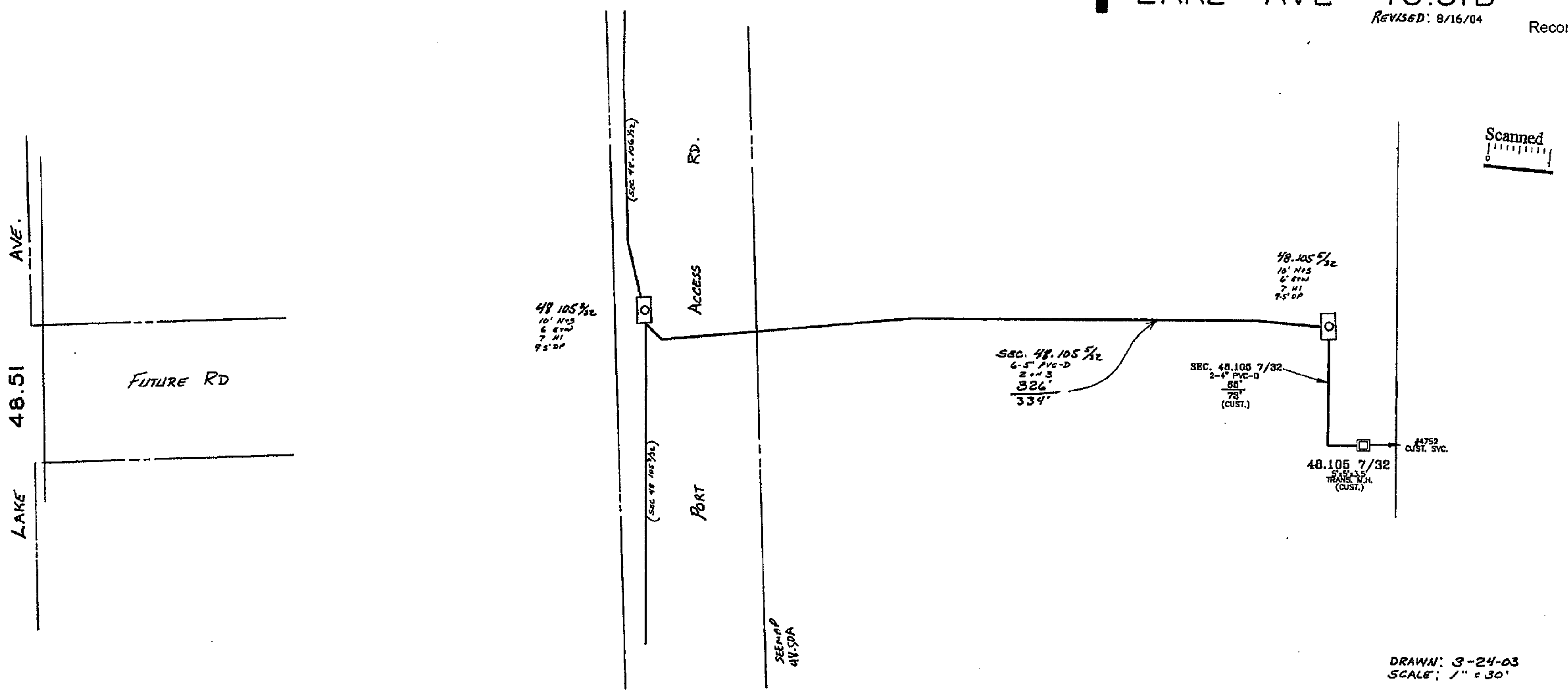
DATE: 9/30/2005

PHONE: 771-4333

LAKE AVE 48.51B

REVISED: 8/16/04

RG&E
Record Drawings



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ELECTRIC MAPS

DATE: 9/30/2008
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RG&E
Record Drawings

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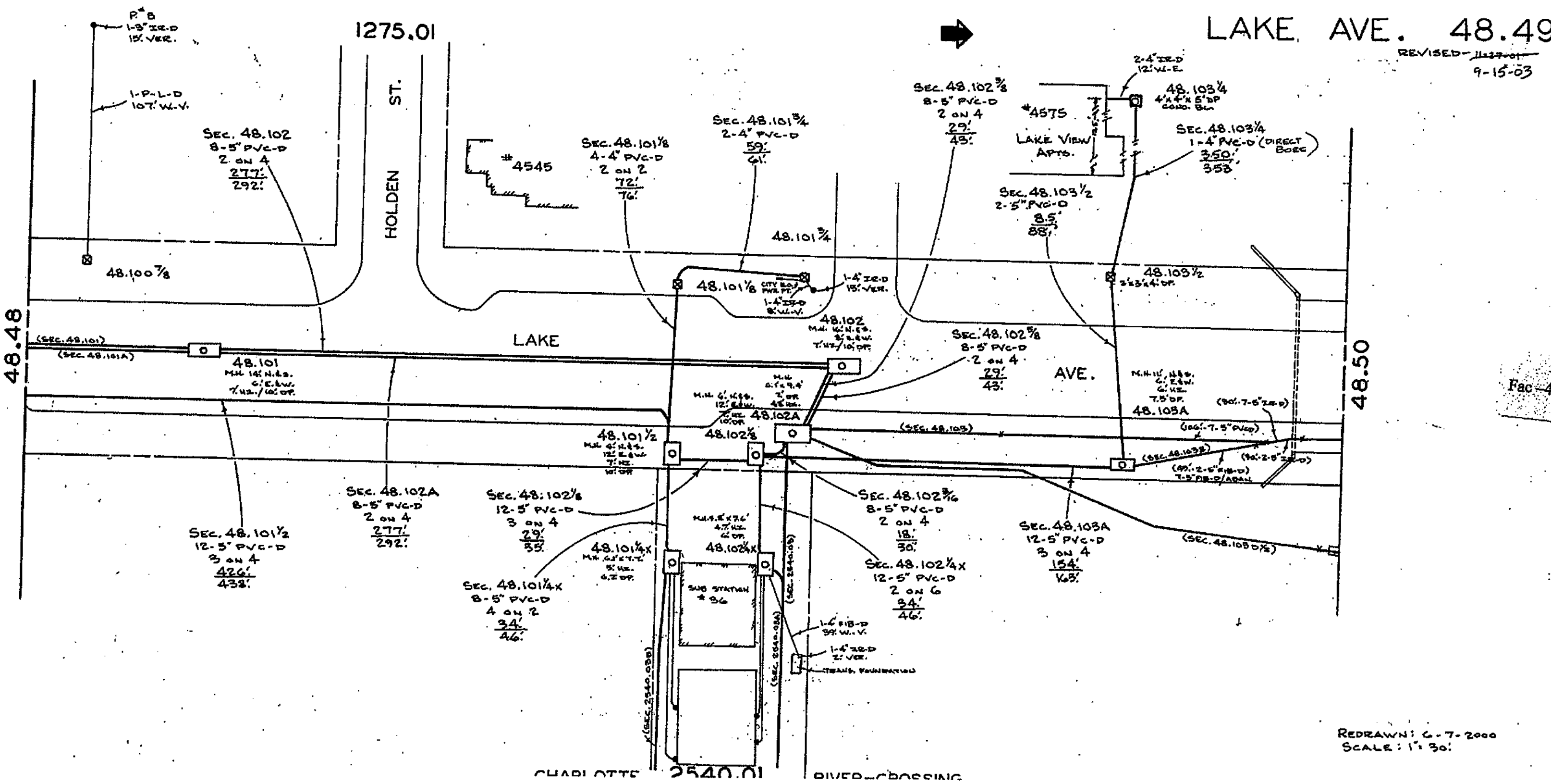

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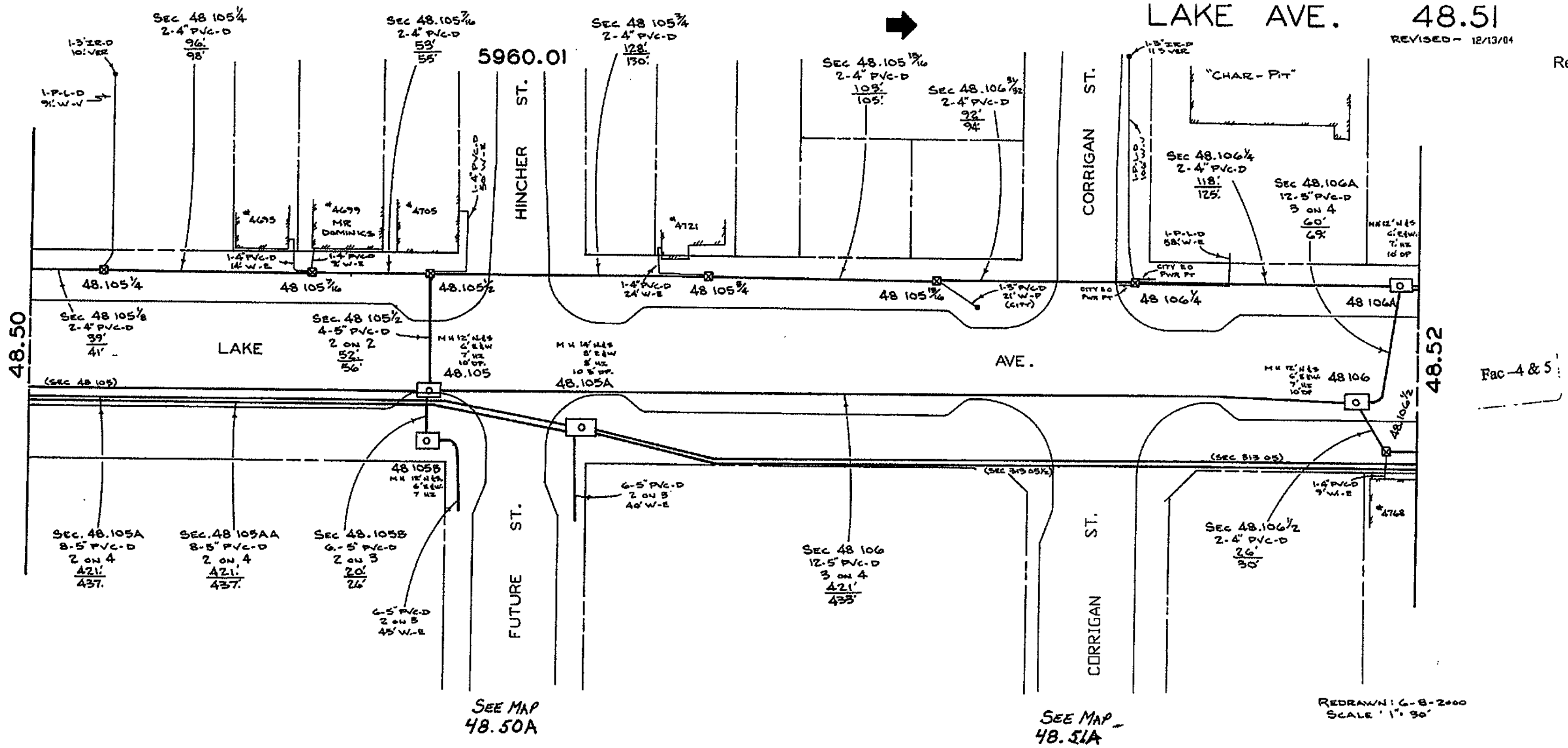

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ELECTRIC MAPS

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Record Drawings

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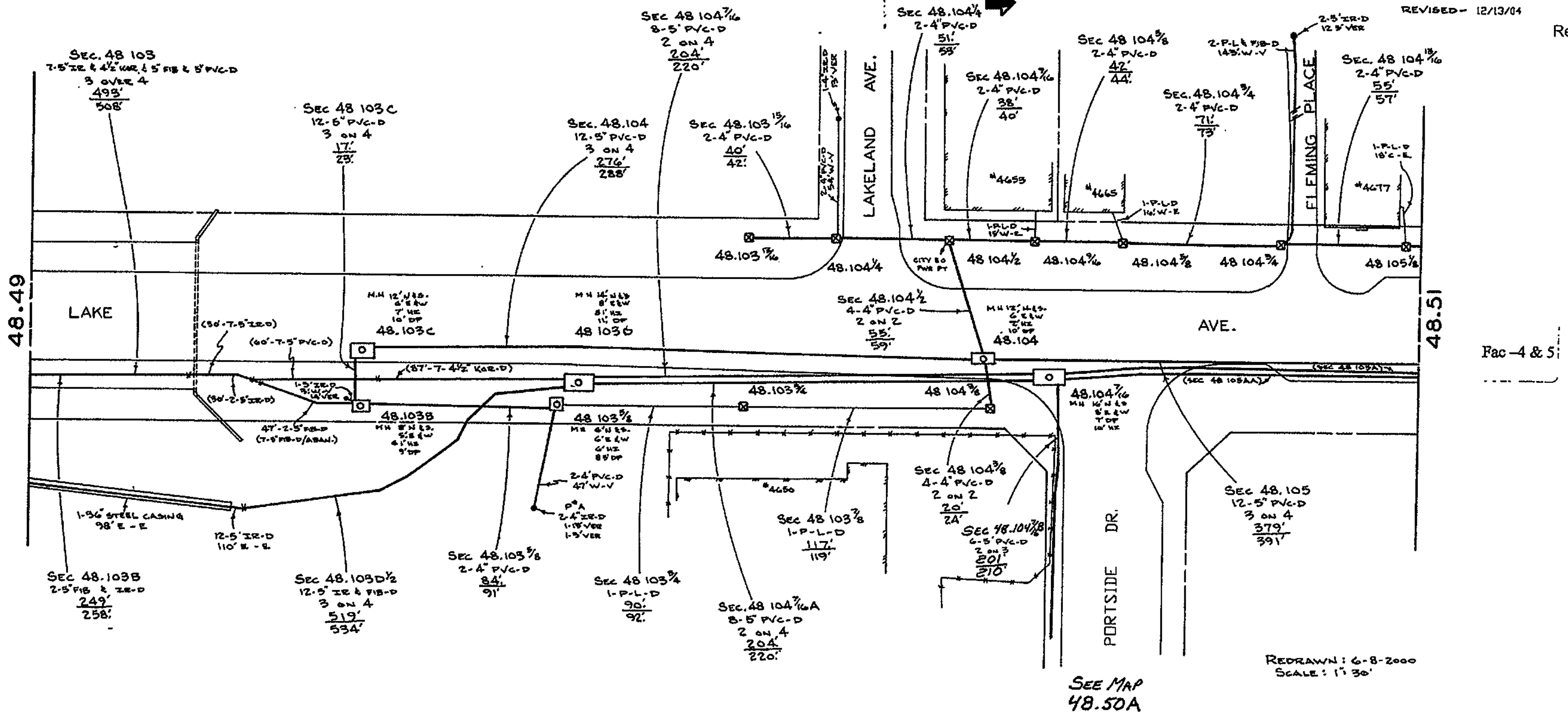
LAKE AVE. 48.50

REVISED - 12/13/04



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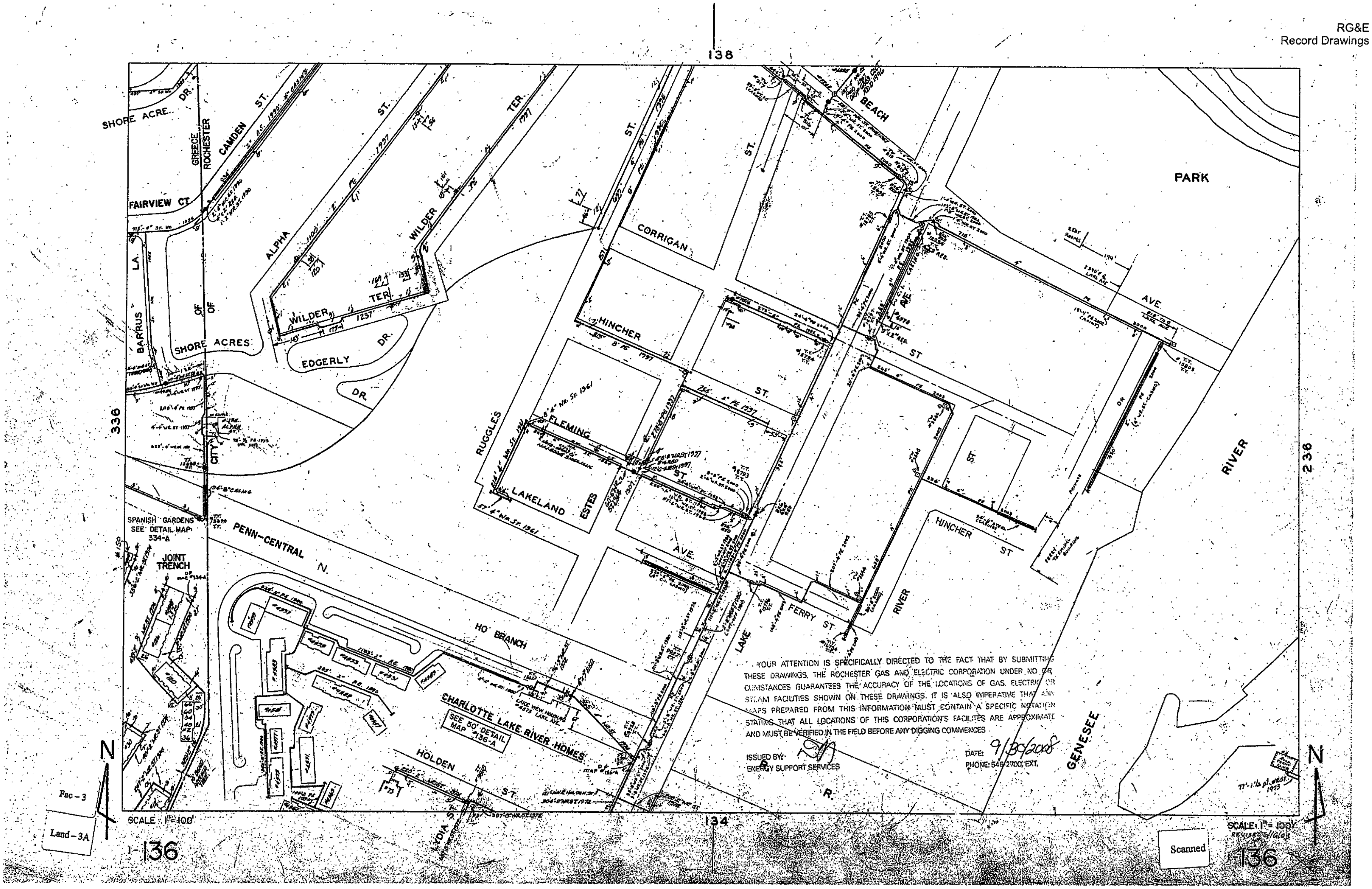
138
134
336
236
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GREECE
ROCHESTER
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FAIRVIEW CT.
ALPHA ST.
WILDER TER.
WILDER TER.
BARRUS LA.
SHORE ACRES
CITY OF ROCHESTER
EDGERLY DR.
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FERRY ST.
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R.
PENN-CENTRAL
SPANISH GARDENS
SEE DETAIL MAP
334-A
JOINT TRENCH
HO BRANCH
CHARLOTTE LAKE RIVER HOMES
SEE 50' DETAIL
MAP #136-A
HOLDEN ST.
LYDIA ST.
YOUR ATTENTION IS SPECIFICALLY DIRECTED TO THE FACT THAT BY SUBMITTING THESE DRAWINGS, THE ROCHESTER GAS AND ELECTRIC CORPORATION UNDER NO CIRCUMSTANCES GUARANTEES THE ACCURACY OF THE LOCATIONS OF GAS, ELECTRIC OR STEAM FACILITIES SHOWN ON THESE DRAWINGS. IT IS ALSO IMPERATIVE THAT ANY MAPS PREPARED FROM THIS INFORMATION MUST CONTAIN A SPECIFIC NOTATION STATING THAT ALL LOCATIONS OF THIS CORPORATION'S FACILITES ARE APPROXIMATE AND MUST BE VERIFIED IN THE FIELD BEFORE ANY DIGGING COMMENCES
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ENERGY SUPPORT SERVICES
DATE: 9/30/2008
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136
SPANISH GARDENS SEE 50' DETAIL MAP 334-A
JOINT TRENCH
CITY LINE
SPANISH TRAIL
CHARLOTTE LAKE RIVER HOMES SEE DETAIL MAP 136-A
VALLEY VIEW PL.
HOLDEN ST.
LATTA
LYDIA ST.
AVE.
MEECH PK
FERGUSON CT.
HOLY CROSS PARISH SEE DETAIL 134-A
HOLY CROSS PAROCHIAL SCHOOL
LIGHTHOUSE ST.
RIVER
STUTSON
#2162 BURIED
WHITNEY PLACE
PRI. ROW. (CRAIG ALLEY)
LAKE ONTARIO PARKWAY
ST.
UPTON PL.
LAKE
RIVER
POLLARD AVE.
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ISSUED BY:
ENERGY SUPPORT SERVICES
DATE: 9/30/2008
PHONE: 546-2700, EXT.
Hazardous Waste Site
Site No.8-28-009
Delisted 7/94
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Fac-3
Land-3A
SCALE 1"=100'
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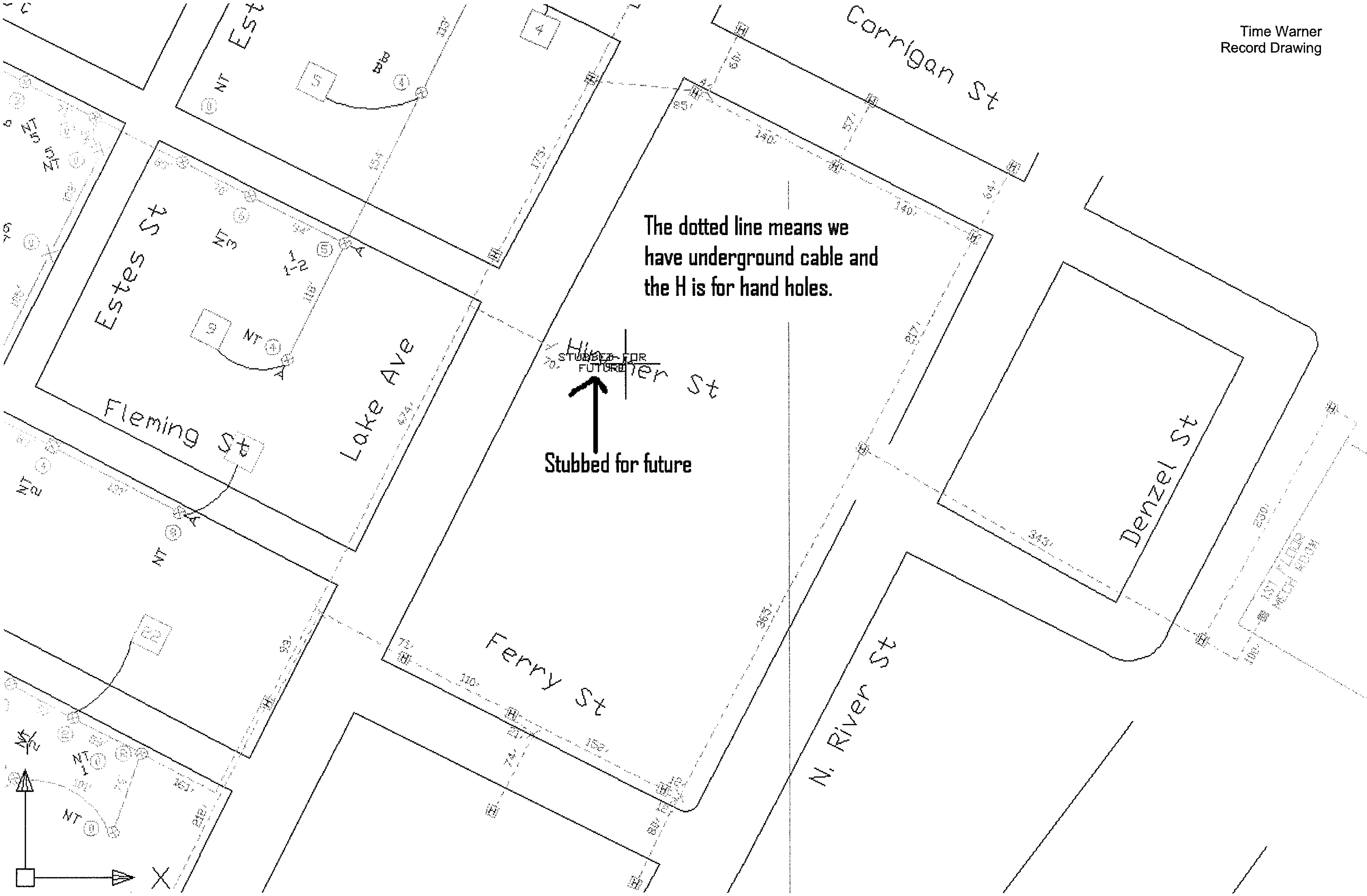
Time Warner
Record Drawing



Appendix 11

Port of Rochester Environmental Management Plan

LABELLA
Associates, P.C.

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

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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 EMP study area. Developers and Contractors disturbing the subsurface at 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).

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

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

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 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.

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.

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

Table 2
On-Site Re-Use Requirements

Material Classification	Material Description	Disposal / Re-use	On-Site Cover Requirements
Class 1	• 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) • Petroleum hydrocarbon related compounds that are less than the NYSDEC TAGM 4046 RSCO.	• Can be re-used at the Port of Rochester Site with NYSDEC approval. • If cannot be re-used at the Port of Rochester Site, must be legally disposed of at a NYS Part 360 landfill	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.

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.

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.

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LABELLA
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Figures

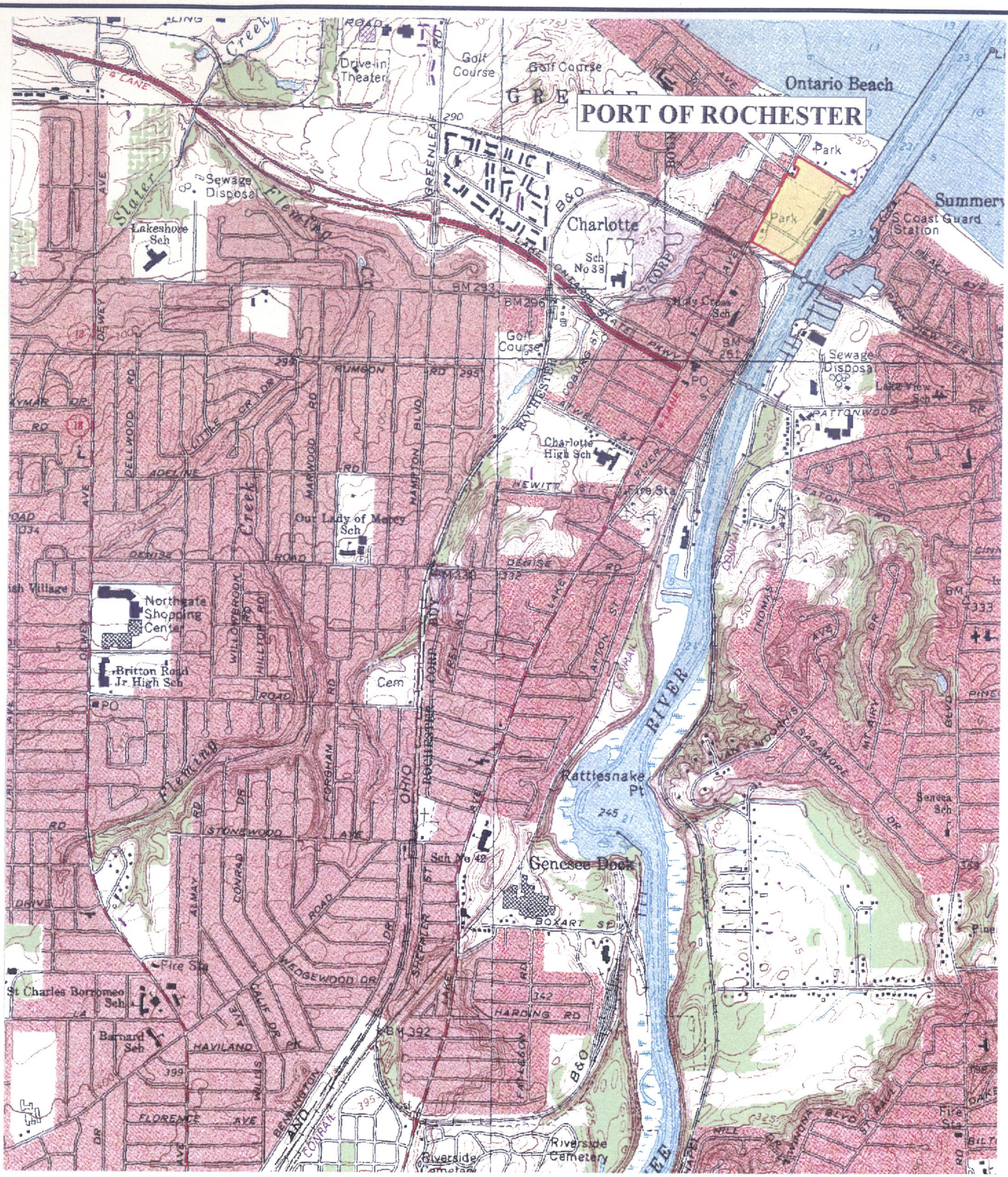

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FIGURE 1
Site Location Map

Port of Rochester
Rochester, New York

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LaBella Project No 205182

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FIGURE 2

Site Location Map of Monroe County Suspect Waste Site

Port of Rochester
Rochester, New York

LABELLA

LaBella Project No 205182

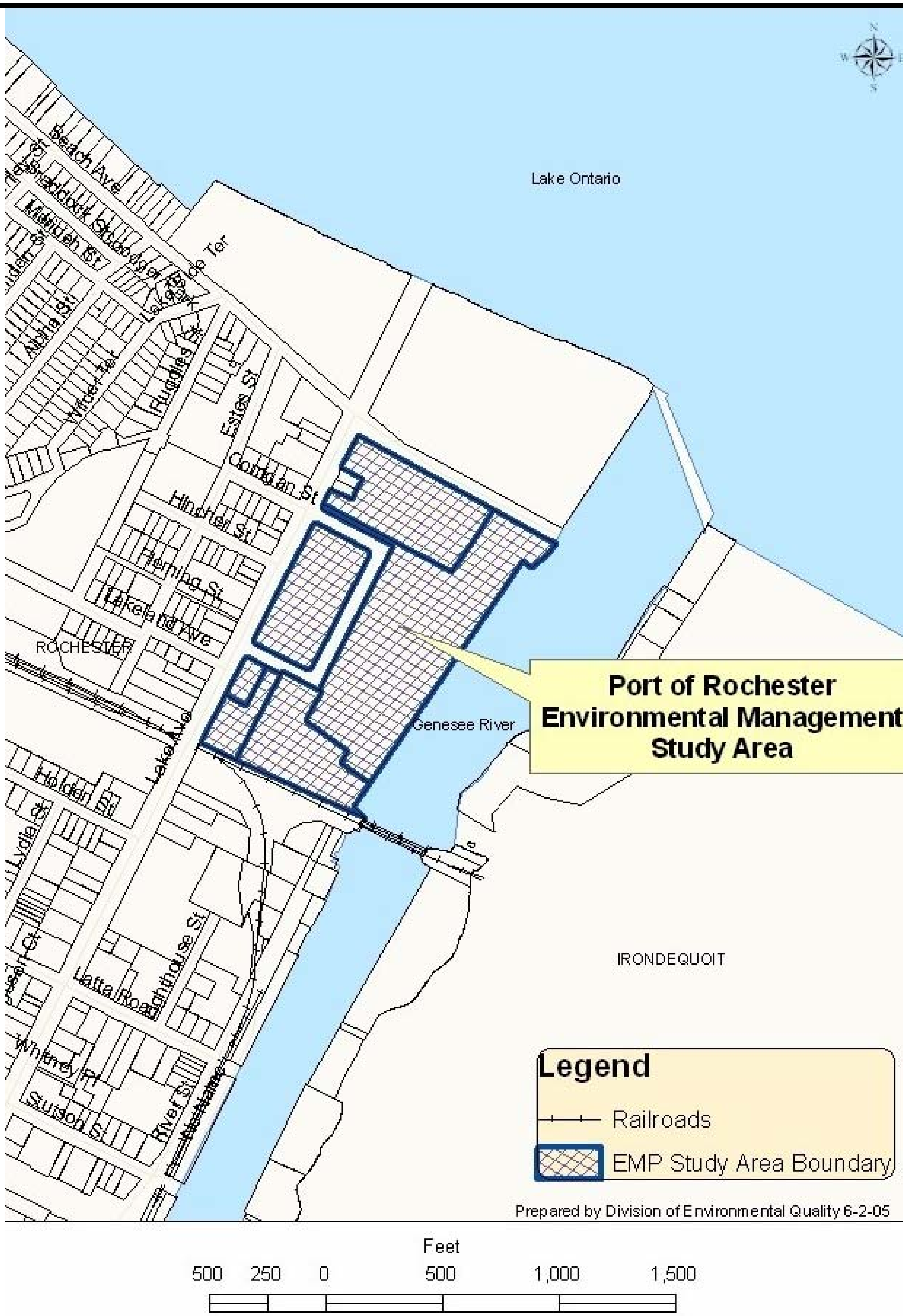


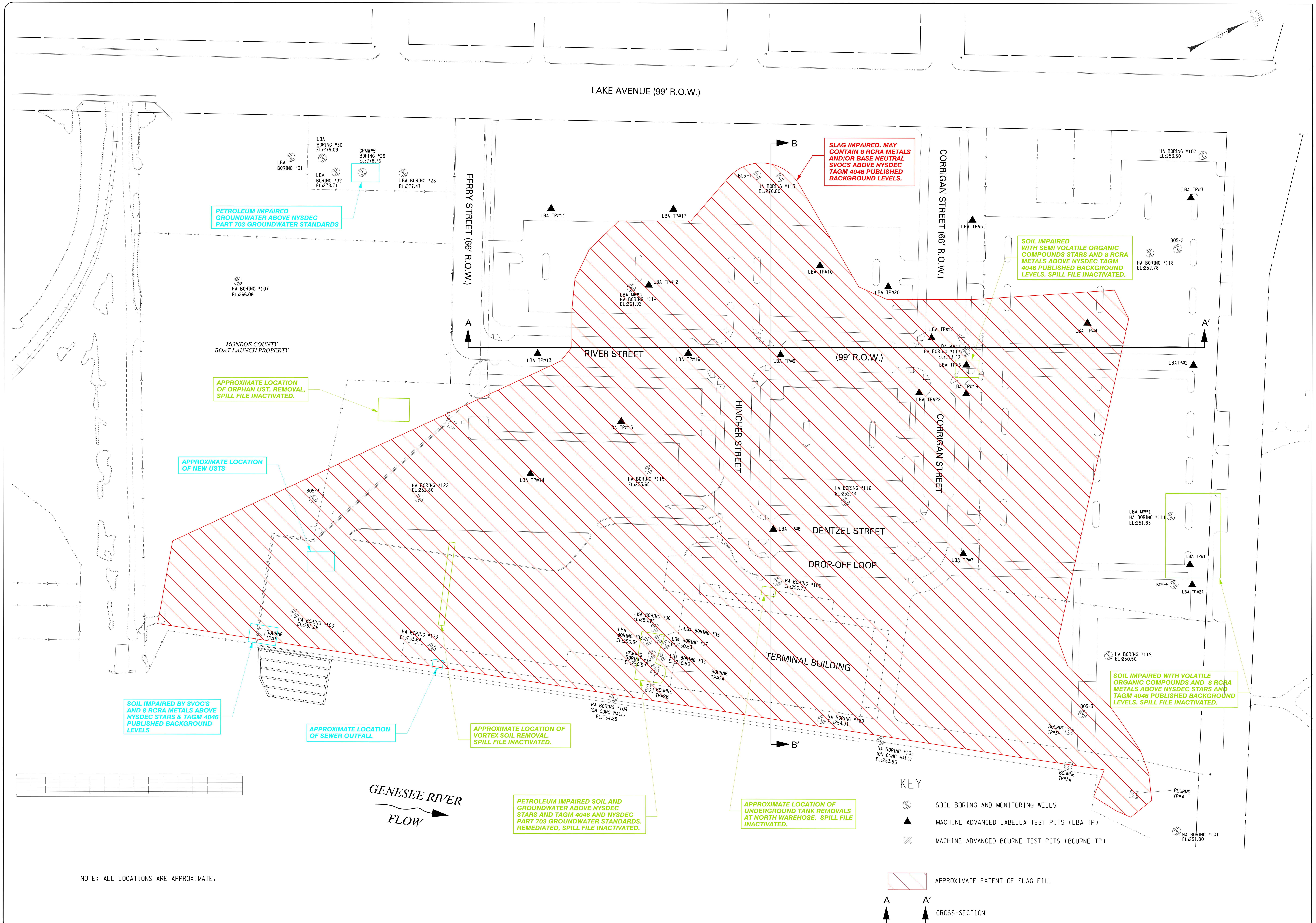
FIGURE 3

Port of Rochester EMP Study Area

Port of Rochester
Rochester, New York

LABELLA

LaBella Project No 205182



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It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered, the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

LABELLA Associates, P.C.

300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

PROJECT/CLIENT

PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN

CITY OF ROCHESTER
ROCHESTER, NEW YORK

DRAWING TITLE

SITE CHARACTERIZATION OF SUBSURFACE ENVIRONMENTAL ISSUES AT THE PORT OF ROCHESTER SITE

ISSUED FOR: FINAL

DATE: JULY 2005

SCALE: 1" = 60'

DESIGNED BY: MFP

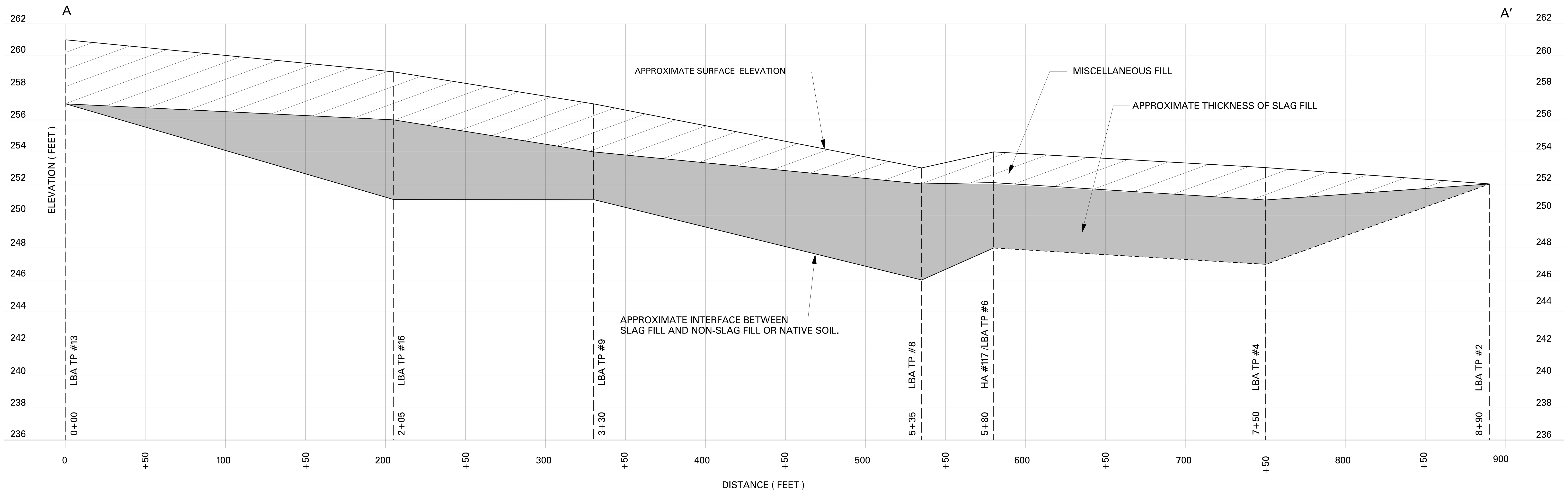
DRAWN BY: GK

REVIEWED BY: GRS

PROJECT NUMBER
205182

DRAWING NUMBER
FIG 4

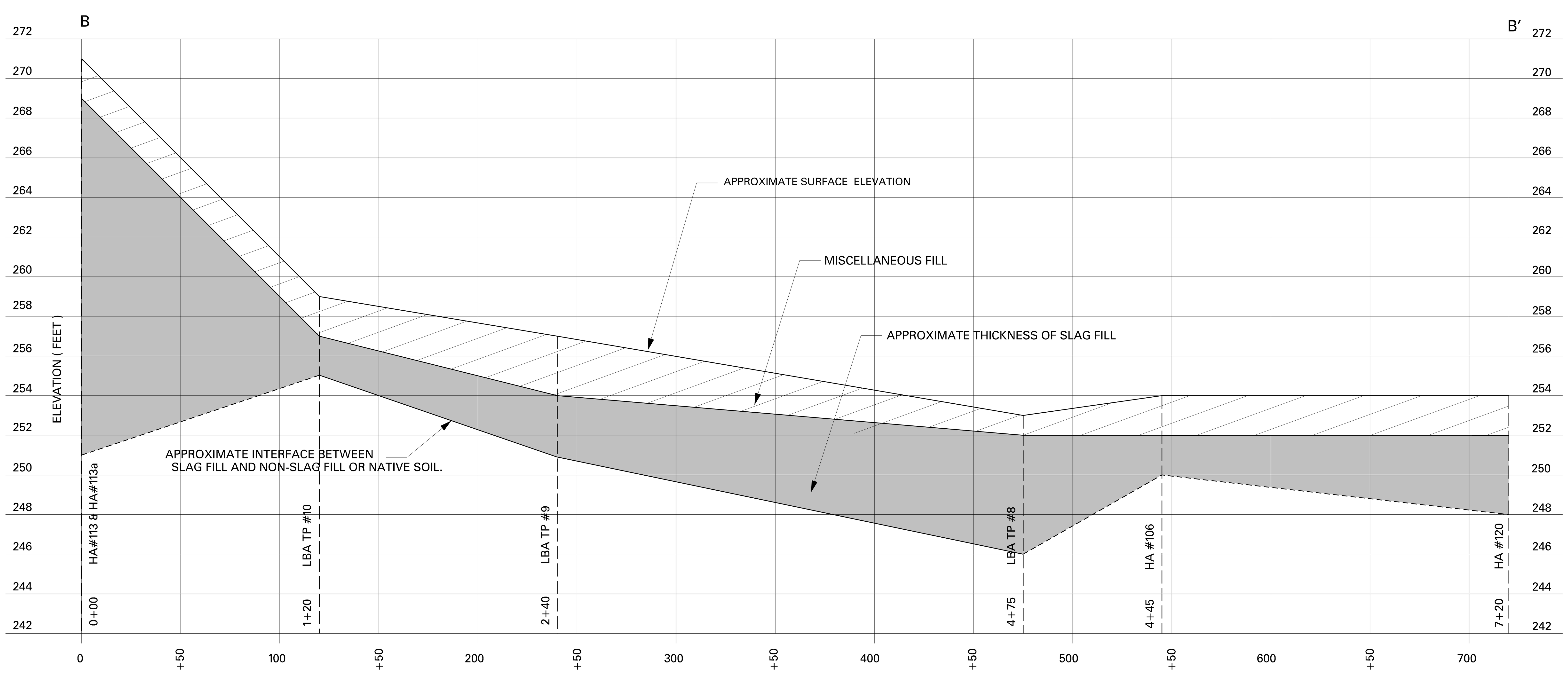
SHEET OF 1



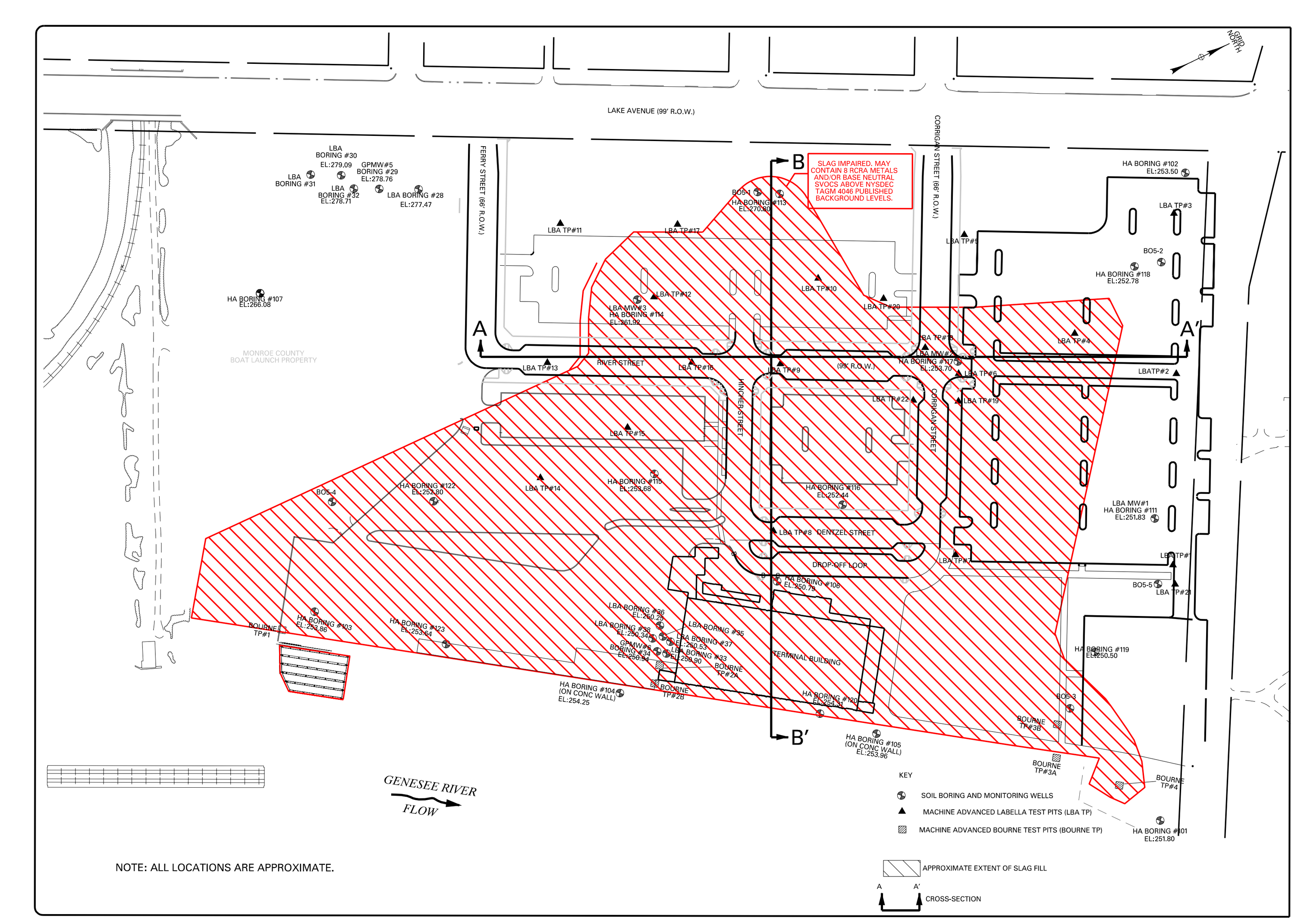
SECTION A-A'

NOTES:

1. ALL ELEVATIONS AND DISTANCES ARE APPROXIMATE.
2. THICKNESS OF SLAG WAS DETERMINED FROM INFORMATION REFERENCED IN THE PORT OF ROCHESTER HARBOR IMPROVEMENT AND HARBOR FERRY TERMINAL PHASE II ENVIRONMENTAL SITE ASSESSMENT BY LABELLA ASSOCIATES, P.C. DATED MAY 31, 2001.
3. THICKNESS AND LOCATION OF SLAG FILL SHALL BE CONSIDERED APPROXIMATE, ESPECIALLY BETWEEN TEST BORINGS WHERE THICKNESS OF SLAG WAS INTERPOLATED.
4. THE APPROXIMATE THICKNESS OF SLAG FILL DOES NOT INCLUDE CONSTRUCTION AND DEMOLITION DEBRIS OR OTHER "NON-SLAG" FILL MATERIALS.
5. ELEVATIONS ARE REFERENCED TO THE CITY OF ROCHESTER DATUM.
6. DRAWINGS OF CROSS-SECTIONS ARE NOT INTENDED TO REPRESENT SUBSURFACE CONDITIONS BENEATH SLAG FILL.
7. DASHED LINE INDICATES THAT SLAG WAS STILL PRESENT AT THE END OF THE BORING, AND CONSEQUENTLY THE DEPTH OF SLAG CANNOT BE DETERMINED WITH CERTAINTY.



SECTION B-B'



LABELLA Associates, P.C.

300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

PROJECT/CLIENT: PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN

CITY OF ROCHESTER
ROCHESTER, NEW YORK

DRAWING TITLE: CROSS-SECTION OF SLAG FILL MATERIAL

ISSUED FOR: FINAL

DATE: JULY 2005

SCALE: 1" = 40'
DESIGNED BY: MFP
DRAWN BY: GK/RCN
REVIEWED BY: GRS

PROJECT NUMBER
205182

DRAWING NUMBER
FIG 5

SHEET 1 OF 1

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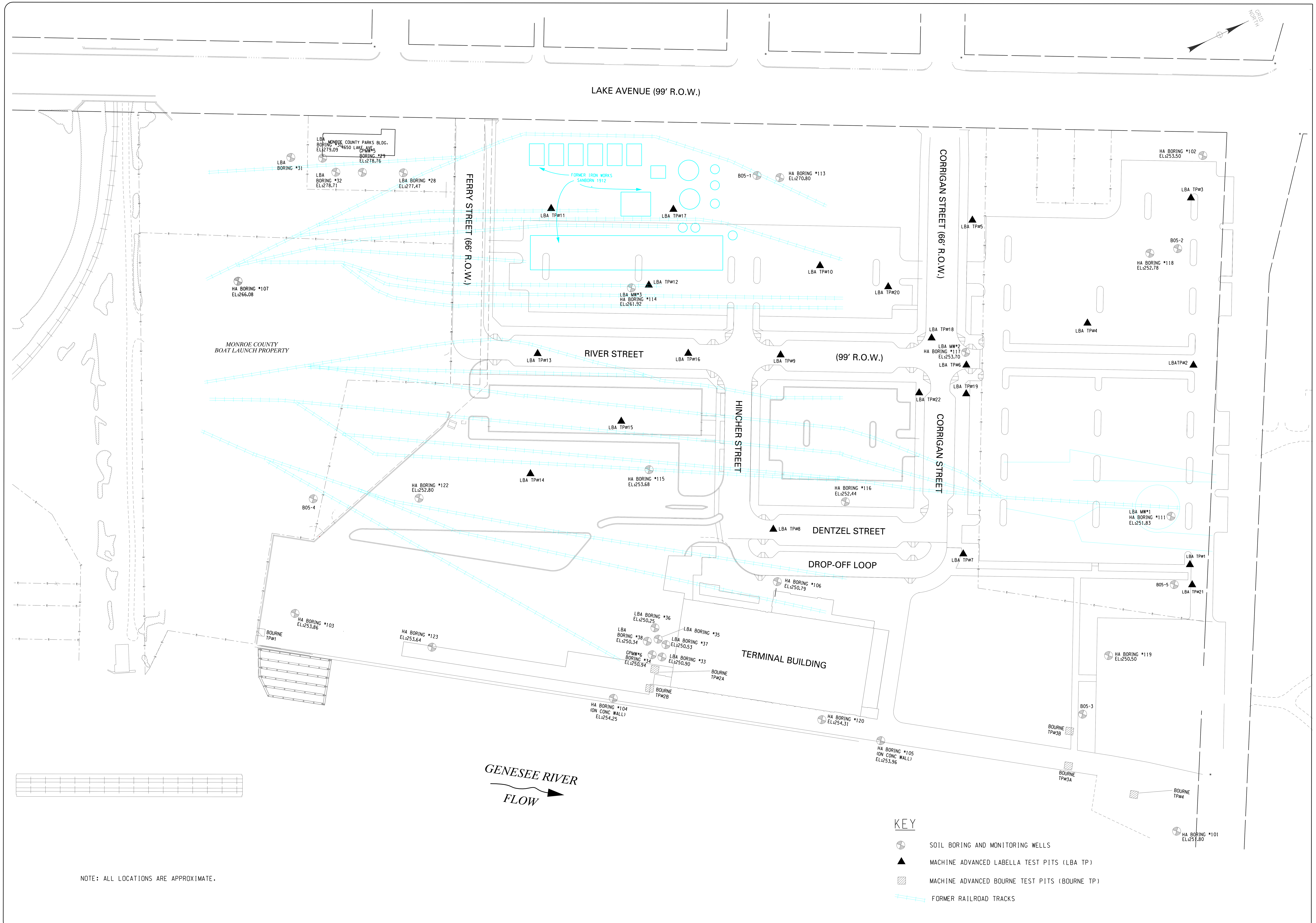

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It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered, the altering architect, engineer or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

PROJECT/CLIENT

PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN

CITY OF ROCHESTER
ROCHESTER, NEW YORK

DRAWING TITLE

SITE CHARACTERIZATION SAMPLE POINT LOCATION MAP OF PORT OF ROCHESTER WITH HISTORICAL BUILDINGS CIRCA 1912

ISSUED FOR: FINAL

DATE: JULY 2005

SCALE: 1" = 60'

DESIGNED BY: MFP

DRAWN BY: GK

REVIEWED BY: GRS

PROJECT NUMBER

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DRAWING NUMBER

FIG 6

SHEET 1 OF 1

LABELLA
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

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

Erin M. Crotty
Commissioner

Received By
LaBella Associates, P.C.
JUN 16 2004
Client:
Proj.#:

June 14, 2004

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,

Michael F. Zamiarski P.E.

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

cc: Greg Senecal, LaBella Associates, P.C.

LABELLA

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

Sergio Esteban, P.E.
Michael W. Haley, L.S.
Robert A. Healy, A.I.A.
Salvatore A. LaBella, P.E.
James R. McIntosh, P.E.
Michael S. Schaffron, P.E.

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

RECEIVED

JAN 2 3 2002

SOLID HAZARDOUS MATERIALS
REGION 8

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

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 repaving 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.

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

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 air monitoring 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,

LABELLA ASSOCIATES, P.C.

Gregory R. Senecal

Gregory Senecal, CHMM
Phase I &II Program Manager

David

NYSDEC Region 8 ~~Solid Waste~~
Regional Solid & Hazardous Materials Engineer

Attachments

cc: S. Esteban; LaBella
S. Metzger; LaBella
R. VenVertloh; LaBella
C. Ecklund; LaBella
J. Biondolillo; City of Rochester
B. Price; City of Rochester

While I don't believe we discussed monitoring specifically, acceptable "handling, relocation and disposal practices" must minimize the likelihood of either blowing dust or runoff of excavated materials.

J2A21DP1

LABELLA

Engineering

Architecture

Environmental

LABELLA
Associates, P.C.

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 odor 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

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

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

South Pit

RESULTS OF ANALYSIS

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

PAI Project ID: P2102852
PAI Sample ID: P2102852-001

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes: T
Canister ID : #01194

Date Collected: 12/11/01
Date Received: 12/12/01
Date Analyzed: 12/14/01
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = 0.1 Pf 1 = 3.5

D.F. = 1.23

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data 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_5H_{10} 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	$C_{10}H_{14}$ Aromatic Compound	10	
27.25	$C_{10}H_{14}$ Aromatic Compound	10	

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

Verified By: RG Date: 12/27/01

02852VOA.RD1 - TIC

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Performance Analytical Inc.
An Quality Laboratory
A Division of Columbia Analytical Services, Inc.
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South Pit

RESULTS OF ANALYSIS

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

PAI Project ID: P2102852
PAI Sample ID: P2102852-001

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:
Container ID: #01194

Date Collected: 12/11/01
Time Collected: 10:45
Date Received: 12/12/01
Date Analyzed: 12/13/01
Time Analyzed: 15:20
Volume(s) Analyzed: 1.0 ml

Pi 1 = 0.1 Pf 1 = 3.5

D.F.= 1.23

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
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.

Verified By: RG Date: 12/27/01

3

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Performance Analytical Inc.
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Middle Pit

RESULTS OF ANALYSIS

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

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

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes: T
Canister ID : #01203

Date Collected: 12/11/01
Date Received: 12/12/01
Date Analyzed: 12/14/01
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = 0.1 Pf 1 = 3.5
D.F. = 1.23

GC / MS Ret. Time	Compound Identification	Concentration µg/m³	Data 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	$C_{10}H_{14}$ Aromatic Compound	10	
27.24	$C_{10}H_{14}$ Aromatic Compound	10	
27.72	Unidentified Siloxane (Possible Artifact)	10	

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

Verified By: RC Date: 12/27/01

02852VOA.RD1 - TIC (2)

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Middle Pit

RESULTS OF ANALYSIS

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

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

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:
Container ID: #01203

Date Collected: 12/11/01
Time Collected: 11:00
Date Received: 12/12/01
Date Analyzed: 12/13/01
Time Analyzed: 15:40
Volume(s) Analyzed: 1.0 ml

Pi 1 = 0.1 **Pf 1 =** 3.5
D.F.= 1.23

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
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.**

Verified By: RG Date: 12/27/01

02852SVG RD1 - Sample (2)

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Performance Analytical Inc.
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North Pit

RESULTS OF ANALYSIS

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

PAI Project ID: P2102852
PAI Sample ID: P2102852-003

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes: T
Canister ID : #00600

Date Collected: 12/11/01
Date Received: 12/12/01
Date Analyzed: 12/14/01
Volume(s) Analyzed: 0.50 Liter(s)

Pi 1 = 0.3 Pf 1 = 3.5
D.F. = 1.21

GC / MS Ret. Time	Compound Identification	Concentration $\mu g/m^3$	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.

Verified By: RG Date: 12/27/01

02852V0A.RD1 - TIC (3)

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North Pit

RESULTS OF ANALYSIS

Page 1 of 1

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

PAI Project ID: P2102852
PAI Sample ID: P2102852-003

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:
Container ID: #00600

Date Collected: 12/11/01
Time Collected: 11:20
Date Received: 12/12/01
Date Analyzed: 12/13/01
Time Analyzed: 15:59
Volume(s) Analyzed: 1.0 ml

Pi 1 = 0.3 Pf 1 = 3.5

D.F.= 1.21

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
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.

Verified By: RG Date: 1/24/02

C3552SVG.RD2 - Sample (3)

Page No.

Performance Analytical Inc.
Air Quality Laboratory
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Blank

RESULTS OF ANALYSIS

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

PAI Project ID: P2102852
PAI Sample ID: P011214-MB

Tentatively Identified Compounds

Test Code: EPA TO-15
Instrument ID: HP5972/Tekmar AUTOCan Elite
Analyst: Wade Henton
Sampling Media: Silco Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 12/14/01
Volume(s) Analyzed: 1.00 Liter(s)

D.F. = 1.00

GC / MS Ret. Time	Compound Identification	Concentration $\mu g/m^3$	Data Qualifier
	No Compounds Detected		

Verified By: RG Date: 12/27/01

02852VOA.RD1 - MBlank (TIC)

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Performance Analytical Inc.
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Blank

RESULTS OF ANALYSIS

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

PAI Project ID: P2102852
PAI Sample ID: P011213-MB

Test Code: ASTM D5504-98
Instrument ID: HP5890A/SCD #5
Analyst: Annie Calvagna
Sampling Media: Silco Canister
Test Notes:

Date Collected: NA
Time Collected: NA
Date Received: NA
Date Analyzed: 12/13/01
Time Analyzed: 11:36
Volume(s) Analyzed: 1.0 ml

D.F.= 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
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**.

Verified By: RC Date: 12/27/01

02852SVG.RD1 - MBlank

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Performance Analytical Inc.
Air Quality Laboratory
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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) Silco Canister Samples labeled: "South Pit" "West Pit" "North 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.

Received By
LaBella Associates, P.C.
JAN 07 2002

Reviewed and Approved:

Wade Henton
Senior Chemist

Reviewed and Approved:

John Yokoyama
Operations Manager

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Performance Analytical Inc.
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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.

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Performance Analytical Inc.
Sample Acceptance Check Form

Client: LaBella Associates, PC Work order: P2102852
Project: / 99150-2320
Sample(s) received on: 12/12/01 Date opened: 12/12/01 by SM

Note: This form is used for all samples received by PAI. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client or as required by the method/SOP.

		Yes	No	N/A
1	Were **custody seals** on outside of cooler/Box?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
	Were custody seals on outside of sample container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
2	Were **sample containers** marked with client sample ID?	☒	☐	☐
3	Did **sample containers** arrive in good condition?	☒	☐	☐
4	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
5	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
6	Was **sample volume** received adequate for analysis?	☒	☐	☐
7	Are samples within specified holding times?	☒	☐	☐
8	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
	Cooler Temperature NA °C			
	Blank Temperature NA °C			
9	Is pH (acid) **preservation** necessary, according to method/SOP or Client specified information	☐	☒	☐
	Is there a client indication that the submitted samples are pH (acid) preserved?	☐	☐	☒
	Were VOA vials checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒

Lab Sample ID	Required pH	pH (as received, if required)	VOA Headspace (Presence/Absence)
P2102852-001 South Pit			NA
P2102852-002 West Pit			NA
P2102852-003 North Pit			NA

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

11

LABELLA
LaBella Associates, P.C.
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 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
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
4-Methylphenol	ND<356	ND<305	900	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
Nitrobenzene	ND<356	ND<305	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	ND<356	ND<305	N/A	N/A
Dibenzofuran	ND<356	ND<305	6,200	N/A

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

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

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

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

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.

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

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:

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

	Paradigm Environmental Services	Columbia Analytical	NYSDEC TAGM 4046 Eastern USA Background	NYSDEC 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.

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

LaBella Test Pit Soil Sample Results (continued)
USEPA Method 8270

	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
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

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.

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.

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

	HA Boring #109 (0'-2')	**HA Boring #110 (0'-2')**	**HA Boring #111(2'-4')**	**HA Boring #114 (2'-4')**	**NYSDEC STARS TCLP Alternative Guidance Value**	**NYSDEC TAGM 4046 Soil Cleanup 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) 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

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:

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

	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

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 risk-based 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:

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

	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

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.

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)	B-20 (1'-4')	B-21 (0'-1')	B-21 (1'-4')	B-22 (0'-1')	B-23 (0'-1')	B-23 (1'-4')	B-34 (4'-5.5')	B-41 (0'-4')	B-42 (0'-4')	NYSDEC TAGM 4046 Eastern USA Background	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

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	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	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	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	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	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	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	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	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	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	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	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	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	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	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

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	ND<318	ND<335	ND<333	ND<372	ND<348	ND<387	ND<349	ND<352	1000	165,000
Indeno (1,2,3-cd) 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.

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

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

	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

	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

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:

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:

LABELLA
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 3

Boring, Test Pit, and Monitoring Well Logs

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614				TEST PIT #1 PROJECT # 99150 DATE: 1/11/00
PROJECT: Port of Rochester LOCATION: **South Test Pit for Bourne** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe				ELEVATION: LABELLA REP: DEP
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			Blacktop	0 ppm no odor
1			Gravel/Sub-base	
				0 ppm no odor
2				
3			cinders/fill mixed with foundry slag byproducts (blue with sulfur odor)	0 ppm no odor
4				
5				0 ppm no odor
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			concrete deck	0 ppm no odor
11				0 ppm no odor
			Test pit terminated at approx. 11'+/-	
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
* Hrs. after completion				TEST PIT #1

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614				TEST PIT #2a PROJECT # 99150 DATE: 1/12/00
PROJECT: Port of Rochester LOCATION: **Bourne Test Pit #2a** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe				ELEVATION: LABELLA REP: DEP
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			Blacktop	0 ppm no odor
1			Gravel/Sub-base	
				0 ppm no odor
2				
			silt/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				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
* Hrs. after completion				TEST PIT #2a

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614				TEST PIT #2b PROJECT # 99150 DATE: 1/12/00
PROJECT:	Port of Rochester			
LOCATION:	**Bourne Test Pit #2b**			ELEVATION:
CLIENT:	City of Rochester			
CONTRACTOR:	Hickory Hills			LABELLA REP: DEP
EQUIPMENT:	Backhoe			

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
1			Blacktop	0 ppm no odor
2			gravel	0 ppm no odor
3			silt/cinders with some gravel	0 ppm no odor
4			foundry slag	
5				0 ppm no odor
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
9			test pit terminated at approximately 8.5'	
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
* Hrs. after completion				TEST PIT #2b

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614				TEST PIT #3A PROJECT # 99150 DATE: 1/12/00
PROJECT: Port of Rochester LOCATION: **Bourne Test Pit #3A** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe				ELEVATION: LABELLA REP: DEP
SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
				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
			concrete slab	
9			concrete slab	
			concrete slab	
10			concrete slab	
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C.	TEST PIT #3B
300 STATE STREET	PROJECT # 99150
Rochester, New York 14614	DATE: 1/12/00
PROJECT: Port of Rochester	
LOCATION: **Bourne Test Pit #3B**	ELEVATION:
CLIENT: City of Rochester	
CONTRACTOR: Hickory Hills	LABELLA REP: DEP
EQUIPMENT: Backhoe	

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			Blacktop	0 ppm creosote odor
1			former rail lines still in place under blacktop	
			former/active electrical conduit	0 ppm no odor
2				
			layer of concrete	
3				0 ppm no odor
			fine sand - light brown	
4				
				0 ppm no odor
5				
6				0 ppm no odor
7				
8			last 3" +/- of sand is darkly stained (gray/black)	0 ppm no odor
			concrete slab	
9			concrete slab	
			concrete slab	
10			concrete slab	
			14' west of retaining wall	
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
* Hrs. after completion				TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #4 PROJECT # 99150 DATE: 1/12/00
PROJECT: Port of Rochester LOCATION: **Bourne Test Pit #4** CLIENT: City of Rochester CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm no odor
1			silt and topsoil	
				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				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH	20'x20'x11'	
* Hrs. after completion				TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #1 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: Parking Lot at Railroad turntable CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			red/black cinders, misc. fill	
				0 ppm no odor
2			medium/coarse brown sand	
3			railroad ties	0 ppm no odor
4				
			water infiltration (perched? Actual water table?)	0 ppm no odor
5				
6			running sand/GW at 6'	0 ppm no odor
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #1

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #2 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			red silt/sand with gravel	
				0 ppm no odor
2			gray medium/coarse sand	
3			medium gravel	0 ppm no odor
			perched?/actual groundwater	
4				
				0 ppm no odor
5				
			standing groundwater	
6				0 ppm no odor
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #2

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #3 PROJECT # 99150 DATE: 2/28/00

PROJECT: Port of Rochester
LOCATION:
CLIENT:
CONTRACTOR: Hickory Hills
EQUIPMENT: Backhoe

ELEVATION:
LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			red silt/sand with gravel	
			brown/gray sand	0 ppm no odor
2				
3				0 ppm no odor
4				
				0 ppm no odor
5				
6			some gravel	0 ppm no odor
				0 ppm no odor
7			running sand/groundwater	
8				0 ppm no odor
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #3

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #4 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			blacktop	0 ppm no odor
1			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				
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #4

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #5 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm no odor
1			silt/sand with some gravel	0 ppm no odor
2			brown sand	
3				0 ppm no odor
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				0 ppm no odor
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #5

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #6 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	
1			red silt gravel	
			miscellaneous fill	
2			blue sulfur 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				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #6

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #7 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			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
4			black layer	
				0 ppm sulfur odor
5			water	
6				0 ppm sulfur odor
7			miscellaneous fill	0 ppm sulfur odor
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #7

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #8 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm sulfur odor
1			miscellaneous fill - slag/brick	0 ppm sulfur odor
2			black fine ash/silt	
3			slag miscellaneous fill	0 ppm sulfur odor
4				0 ppm sulfur odor
5			groundwater	
6				0 ppm sulfur odor
7			miscellaneous fill	0 ppm sulfur odor
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #8

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #9 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm sulfur odor
1			sand	
				0 ppm sulfur odor
2				
3			red slag - miscellaneous fill	0 ppm sulfur odor
			and blue slag	
4				
				0 ppm sulfur odor
5				
6			ash	0 ppm sulfur odor
7				0 ppm sulfur odor
8				
				0 ppm sulfur odor
9				
10				0 ppm sulfur odor
			standing water (no sheen)	
11				0 ppm sulfur odor
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #9

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. **300 STATE STREET** **Rochester, New York 14614**	TEST PIT #10 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS Attempt 1	Attempt 2	Attempt 3	Attempt 4	REMARKS	
			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
4				large frags				
5				concrete slab		brown sand	0 ppm	sulfur odor
6							0 ppm	no odor
7						gray fine sand	0 ppm	no odor
8						very firm brown sand		
9							0 ppm	no odor
10							0 ppm	no odor
11						no standing water	0 ppm	no odor
12							0 ppm	no odor
13						hard sand/till		

WATER LEVEL

DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #10

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #11 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	0 ppm no odor
1			silt/sand - brown (some debris and concrete slabs)	
				0 ppm no odor
2				
3				0 ppm no odor
4				
5				0 ppm no odor
6				0 ppm no odor
7				0 ppm no odor
8				
9				0 ppm no odor
10				0 ppm no odor
11			gray silt (dense) and clay	0 ppm no odor
12				
13				0 ppm no odor

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #11

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #12 PROJECT # 99150 DATE: 2/28/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS 1st attempt	DESCRIPTION OF MATERIALS 2nd attempt	REMARKS
			grass	grass	
1			brick/rock fragments	silt	
				miscellaneous slag	
2			miscellaneous fill		
3			blue/red slag		
4					
				brick	
5			concrete slab	concrete slab	
6					
7					
8					
9					
10					
11					
12					
13					

WATER LEVEL

DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #12

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #13 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel/sub-base	0 ppm no odor
1			silt/sand with gravel	0 ppm no odor
2			firm/dense hard fine sand	
3			brick/concrete	0 ppm no odor
4			brown sand	0 ppm no odor
5				
6				0 ppm no odor
7				0 ppm no odor
8			black cinders	0 ppm no odor
9				
10			concrete slab	0 ppm no odor
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #13

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #14 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel/sub-base	0 ppm no odor
1			miscellaneous fill (blue slag, gravel, sand, brick)	
2			↓	0 ppm sulfur odor
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				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #14

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #15 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel/sub-base	
1			silt/sand gravel (fill)	
2			concrete slab	
3			miscellaneous slag (white)	
			miscellaneous slag (iron)	
4				
5				
6				
7				
8				
9				
			water	
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #15

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. **300 STATE STREET** **Rochester, New York 14614**	TEST PIT #16 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel — fill	0 ppm sulfur odor
1			silt/sand	
				0 ppm sulfur odor
2				
			miscellaneous slag	
3				0 ppm sulfur odor
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 no odor
10				
11				0 ppm no odor
12				
				0 ppm no odor
13				

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #16

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #17 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	
1			topsoil/silt	0 ppm no odor
			medium brown sand/silt	
2				0 ppm no odor
3			gray-blue silty clay	
4				0 ppm no odor
5				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				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #17

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #18 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			gravel	
1			silt/sand - gravel	0 ppm sulfur odor
2				0 ppm sulfur odor
3			miscellaneous slag white, blue and green	
4				0 ppm sulfur odor
5				0 ppm sulfur odor
6				0 ppm sulfur odor
7			standing water	0 ppm sulfur odor
8				
9				
10				
11				
12				
13				

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #18

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #19 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS
			grass	
1			silt/sand	
2				
3				
4			dense slag - white/blue	
5			standing water - some sheen	
6				
7				
8				
9				
10				
11				
12				
13				

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #19

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #20 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
			grass	0 ppm	no odor
1			silt/sand/topsoil		
			red coarse sand - waste fill	0 ppm	no odor
2					
				0 ppm	no odor
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					
				0 ppm	no odor
10					
				0 ppm	no odor
11					
				0 ppm	no odor
12					
13					

WATER LEVEL			GENERAL NOTES	
DATE	TIME*	DEPTH		
* Hrs. after completion				TEST PIT #20

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #21 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
			asphalt - 2"	0 ppm	no odor
1			gravel		
			gray medium-fine sand	0 ppm	no odor
2					
				0 ppm	Creosote odor
3					
				0 ppm	Creosote odor
4					
5			railroad ties	0 ppm	Creosote odor
6			concrete slab		
				0 ppm	Creosote odor
7					
8					
9					
10					
11					
12					
13					

WATER LEVEL		
DATE	TIME*	DEPTH

* Hrs. after completion

GENERAL NOTES

TEST PIT #21

TEST PIT REPORT

LABELLA ASSOCIATES, P.C. 300 STATE STREET Rochester, New York 14614	TEST PIT #22 PROJECT # 99150 DATE: 2/29/00
PROJECT: Port of Rochester LOCATION: CLIENT: CONTRACTOR: Hickory Hills EQUIPMENT: Backhoe	ELEVATION: LABELLA REP: DEP

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	DESCRIPTION OF MATERIALS	REMARKS	
			gravel	0 ppm	no odor
1			silt/sand fill		
				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		
			standing water with sheen	0 ppm	sulfur odor
7					
8					
9					
10					
11					
12					
13					

WATER LEVEL			GENERAL NOTES
DATE	TIME*	DEPTH	

* Hrs. after completion

TEST PIT #22

CORE BORING REPORT

HALEY & ALDRICH

BORING NO. **HA-101**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation ft | Datum | Boring Location

Item	Casing	Sampler	Core Barrel
Type	HAS	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: [x] Truck [ ] Tripod [ ] ATV [ ] Geoprobe [ ] Track [ ] Air Track [ ] Skid [ ] ______

[x] Cat-Head [ ] Winch [ ] Roller Bit [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in)	RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
		50.5					
							Competent red sandstone with interbedded gray sandstone.
			3.4/5.0	68			
							QUEENSTONE FORMATION
	Avg. 3-4						
5	minutes						
	per foot						
			3.45/5.0	69			Highly fractured 8.0 ft. to 10.0 ft.
10		60.5					
15							
20							
25							
30							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	50.5
Rock Cored (linear ft)	10
Samples	14S
BORING NO.	HA-102

Form #3002

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-101a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	7-Jun-00
DRILLER	L. TODD	DATE FINISHED	7-Jun-00

Elevation 251.8 ft Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: ☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ ; ☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						
						Augered to 5.0 ft.
5		5	S6	5.0		Loose gray brown fine to medium SAND, trace silt, organics, moist.
		5				
		3				ALLUVIUM
		5	14"/24"	7.0		
						Augered to 10.0 ft.
10		4	S7	10.0		Same, except wet.
		4				
		3				
		2	16"/24"	12.0		
15		1	S8	15.0		Medium dense gray brown fine to coarse SAND, some coarse gravel, wet.
		9				
		7				
		7	23"/24"	17.0		
20		11	S9	20.0		Same.
		10				
		11				
		14	20"/24"	22.0		
25		12	S10	25.0		Same, except loose.
		3				
		4				
		3	20"/24"	27.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary
Overburden (Linear ft) 115
Rock Cored (Linear ft) --
Number of Samples 18S

BORING NO. **HA-101a**

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-101a**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		9	S11	30.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet.
		4				
		4				ALLUVIUM
		3	22"/24"	32.0		
35		2	S12	35.0		Same, except very loose.
		1				
		2				
		2	23"/24"	37.0		
40		1	S13	40.0		Very loose gray brown fine sandy SILT, little clay, organics, wet.
		1				
		2				
		3	22"/24"	42.0		
45		1	S14	45.0		Same, except no organics.
		2				
		2				
		3	18"/24"	47.0		
50		1	S15	50.0		Same.
		2				
		2				
		2	20"/24"	52.0		
55		1	S16	55.0		Same.
		2				
		3				
		5	20"/24"	57.0		
60		1	S17	60.0		Loose gray brown SILT, little clay, trace sand, wet.
		3				
		4				
		4	20"/24"	62.0		
65		1	S18	65.0		Same.
		2				
		2				
		4	23"/24"	67.0		
						(Augered to bedrock)
70						

FILE NO. 70819-000 BORING NO. HA-101a

HALEY & ALDRICH

TEST BORING REPORT

Depth (ft)	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 recovered)
75						
80						
85						
90						
95						
100						
105						
110						

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-101a**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						(Encounter Change in drilling condtions)
						(Auger refusal)
115						Bottom of Exploration of 115.0 ft.
120						
125						
130						
135						
140						
145						
150						

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-102**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	30-May-00
DRILLER	L. TODD	**DATE FINISHED**	30-May-00

Elevation 253.5 ft **Datum** City **Boring Location** See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ______ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		28	S1	0.0		Medium dense brown and black silty fine to coarse SAND, little rock fragments, dry.
		19				
		16				FILL
		14	16"/24"	2.0		
		9	S2	2.0		Medium dense brown silty fine to coarse SAND, trace coarse gravel, dry.
		8				
		6				
		5	14"/24"	4.0		
		5	S3	4.0		Same, rock obstruction in bottom of spoon.
5		5				
		3				
		3	2"/24"	6.0	6.0	
		1	S4	6.0		Loose gray brown fine to coarse SAND, wet.
		2				
		3				ALLUVIUM
		1	15"/24"	8.0		
		4	S5	8.0		Medium dense gray brown fine to coarse SAND, some gravel, wet.
		18				
		15				
		17	17"/24"	10.0		
10		22	S6	10.0		Very dense brown fine to coarse SAND, moist.
		48				
		58				
		45	2"/24"	12.0		
15		54	S7	15.0	15.0	Very dense gray brown silty fine to coarse SAND, some gravel, moist.
		100/.4	8"/11"	15.9		GLACIAL TILL
20		100/.4	S8	20.0		Very dense brown silty fine to coarse SAND, some gravel. Red sandstone in
			4"/5"	20.4		bottom of spoon, moist.
25		19	S9	25.0		Very dense gray brown silty fine to coarse SAND, some gravel, moist.
		91				
		100/.3	12"/18"	26.3		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
30-May		2			17.5

Sample ID
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	50.5
Rock Cored (Linear ft)	10
Number of Samples	14S
BORING NO.	**HA-102**

Form #3000

TEST BORING REPORT

HALEY & ALDRICH

BORING NO. HA-102

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		10	S10	30.0		Very dense gray brown silty fine to coarse SAND, little rock fragments, wet.
		100/.3	7"/10"	30.8		
						GLACIAL TILL
35		19	S11	35.0		Very dense silty fine to coarse SAND, some gravel, trace clay, wet.
		60				
		100/.3	16"/16"	36.3		
40		15	S12	40.0		Same.
		100/.4	10"/11"	40.9		
45		20	S13	45.0	45.0	Very dense red brown silty fine to coarse SAND, trace clay, moist.
		100/.1	6"/8"	45.6		WEATHERED ROCK
50		100/.5	S14	50.0	50.5	Same, with little clay.
				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						
						Bottom of Exploration at 60.5 ft.
65						
70						

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-103**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	D. NOSTRANT
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	31-May-00
DRILLER	L. TODD	**DATE FINISHED**	31-May-00

Elevation 253.86 ft **Datum** City **Boring Location** See Bring Location Plan

Rig Make & Model CME-55 Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	1-7/8
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig: ☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ ______

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type ☑ Safety ☐ Doughnut

Drill Mud ☐ Bentonite ☐ Polymer ☑ None

Casing ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		8 / 11 / 11 / 15	S1 15"/24"	0.0 – 2.0		Medium dense gravelly coarse to fine sand, little silt, dry. FILL
					2.0	
		13 / 18 / 11 / 7	S2 10"/24"	2.0 – 4.0		Medium dense dark brown coarse to fine SAND, some gravel, little silt, dry. FILL
5		9 / 8 / 4 / 6	S3	4.0 – 6.0		Same. Moist to wet beginning at 5.5 ft. FILL
		3 / 5 / 8 / 50/0.0	S4 4"/18"	6.0 – 7.5		Same, wet. FILL Noted refusal and suspected cobble at 7.5 ft.
		5 / 7 / 9 / 4	S5 6"/24"	8.0 – 10.0		Same, except black. FILL
10		7 / 9 / 10 / 15	S6	10.0 – 12.0		Medium dense black coarse to fine sandy GRAVEL, little silt, wet. FILL
		62 / 26 / 29 / 9	S7 12"/24"	12.0 – 14.0		Same, except very dense, gray-black. FILL Driller noted sulphur-like odor in sample. See Note on Page 2 of 4. Auger Refusal at 14.0 ft. Boring moved 18.0 ft. west of original location.
15						
20						
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	14
Rock Cored (Linear ft)	--
Number of Samples	7S

BORING NO. **HA-103**

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-103a**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	31-May-00
DRILLER	L. TODD	**DATE FINISHED**	1-Jun-00

Elevation 253.86 ft Datum City Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ____ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		A U G E R	See Samples for 0-14 ft. in Boring HA-103			(Offset 18 west of original location)
5		11 14 7 4		5.0 – 7.0		Medium dense brown black fine to coarse SAND, little silt, dry. FILL
		A U G E R				
10		9 19 22 20		10.0 – 12.0		Dense black brown fine to coarse SAND, little silt, slag fragments, wet.
		7 11 15 12	S8 14"/24"	14.0 – 16.0		Same, except medium dense.
		8 3 6 7	No Recovery	16.0 – 18.0		
		8 10 8 6	S9 6"/24"	18.0 – 20.0		Medium dense black brown silty fine to coarse SAND, wet. ALLUVIUM
20						
		5 3 3 4	S10 2"/24"	24.0 – 26.0		Loose gray brown fine sand SILT, wet.
		2 3 3	S11 12"/18"	29.0 – 30.5		Loose gray fine sand SILT, some clay, organics, moist.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft) 7
Rock Cored (Linear ft) --
Number of Samples 19S

BORING NO. **HA-103a**

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-103a**

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	S12	34.0		Loose gray fine sand SILT, some clay, organics, moist.
		3				
35		3				ALLUVIUM
		4	12"/24"	36.0		
		2	S13	39.0		Loose gray silty fine to coarse SAND, trace ogranics, moist.
		2				
40		4				
		4	23"/24"	40.0		
		2	S14	44.0		Loose gray brown fine to medium sandy SILT, little clay, organics, moist.
		4				
45		4				
		5	22"/24"	46.0		
		2	S15	49.0		Same.
		2				
50		3				
		3	22"/24"	51.0		
		2	S16	54.0		Same.
		2				
55		3				
		5	23"/24"	56.0		
		2	S17	59.0		Same.
		2				
60		3				
			22"/24"	61.0		
		4	S18	64.0		Medium dense gray brown fine to medium sandy SILT, little clay, organics, moist.
		4				
65		7				
		7	22"/24"	66.0		
		7	S19	69.0		Bottom of Exploration at 71.0 ft.
		10				
70		10				
		10	17"/24"	71.0		

FILE NO. 70819-000 BORING NO. HA-103a

HALEY & ALDRICH

TEST BORING REPORT

BORING NO.	HA-104
Page 1 of 2	

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	13-Jun-00
DRILLER	L. TODD	DATE FINISHED	13-Jun-00

Elevation 254.25 ft | Datum City | Boring Location See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

- [x] Truck [ ] Tripod [x] Cat-Head
- [ ] ATV [ ] Geoprobe [ ] Winch
- [ ] Track [ ] Air Track [ ] Roller Bit
- [ ] Skid [ ] ______ [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						Mudline 19.0 ft below top of seawall.
						Sunk augers 4.0 ft below mudline.
		WOR	S1	4.0		Very loose gray brown silty coarse to fine SAND.
5		WOR				
		WOR				
		1	11"/24"	6.0		
						ALLUVIUM
		WOR	S2	9.0		Same as above.
10		WOR				
		WOR				
		WOR	20"/24"	11.0		
		1	S3	14.0		Loose gray brown sandy fine to medium SILT, organics, wet.
15		3				
		3				
		5	24"/24"	16.0		
		3	S4	19.0		Same as above.
20		5				
		5				
		9	20"/24"	21.0		
		2	S5	24.0		Same as above.
25		2				
		4				
		6	24"/24"	26.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	31
Rock Cored (Linear ft)	–
Number of Samples	6S
BORING NO.	HA-104

Form #3000

TEST BORING REPORT

HALEY & ALDRICH

BORING NO. **HA-104**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2	S6	29.0		Loose gray fine to medium sandy SILT, organics, wet.
		2	24"/24"	31.0		ALLUVIUM
		4				Bottom of Exploration at 31.0 ft.
		5				
35						
40						
45						
50						
55						
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-104

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-105**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	13-Jun-00
DRILLER	L. TODD	**DATE FINISHED**	13-Jun-00

Elevation	253.96 ft	**Datum**	City
Boring Location	See Boring Location Plan	**Rig Make & Model**	CME 55 Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig: ☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ ______

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						15.0 ft to Mudline from Top of Seawall
0						-Sunk augers 3.0 ft below mudline-
		WOR	S1	3.0		Very loose gray brown sandy SILT, wet
		WOR				
		WOR				ALLUVIUM
		WOR	14"/24"	5.0		
5						
		WOR	S2	6.0		Very loose gray brown silty coarse to fine SAND, wet.
		WOR				
		WOR				
		WOR	14"/24"	8.0		
		WOR	S3	8.0		Same as above.
		WOR				
		WOR				
		WOR	16"/24"	10.0		
10						
15		WOR	S4	15.0		Loose gray brown silty coarse to fine SAND, wet.
		WOR				
		5				
		7	15"/24"	17.0		
20		2	S5	20.0		Loose gray brown sandy SILT, organics.
		2				
		7				
		7	24"/24"	22.0		
25		WOH	S6	25.0		Same as above.
		2				
		5				
		7	20"/24"	27.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	32
Rock Cored (Linear ft)	–
Number of Samples	7S

BORING NO. **HA-105**

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-105**

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	S7	30.0		Loose gray brown sandy SILT, organics.
		3				
		3				ALLUVIUM
		6		32.0		
						Bottom of Exploration at 32.0 ft.
35						
40						
45						
50						
55						
60						
65						
70						

FILE NO.	70819-000	BORING NO.	HA-105

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-106**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	1-Jun-00
DRILLER	L. TODD	DATE FINISHED	1-Jun-00

Elevation 250.79 ft Datum City | Boring Location: See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ______ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		Augered				
		3	S1	0.5		Medium dense brown silty fine to coarse SAND, some rock fragments, dry.
		4				FILL
		7	11"/18"	2.0		
		8	S2	2.0		Medium dense red brown silty fine to coarse SAND, trace rock fragments, moist.
		5				
		5				
		7	12"/24"	4.0		
		4	S3	4.0		Medium dense black brown fine to coarse SAND, litte silt, wet.
		12				ALLUVIUM
5		17				
		15	16"/24"	6.0		
		20	S4	6.0		Same, except very dense.
		37				
		31				
		36	12"/24"	8.0		
		44	S5	8.0		Same.
		28				
		24				
10		12	6"/24"	10.0		
		5	S6	10.0		Loose gray brown fine to coarse SAND, little silt, wet.
		3				
		5				
		6	8"/24"	12.0		
		3	S7	12.0		Same, except trace rock fragments.
		3				
		6				
		5	12"/24"	14.0		
		6	S8	14.0		Medium dense gray brown fine to coarse SAND, little silt, wet.
15		12				
		14				
		14	11"/24"	16.0		
		4	S9	19.0		Loose gray fine sand SILT, little clay, moist.
		3				
20		4				
		2	3"/24"	21.0		
		2	S10	24.0		Same, except very loose.
		2				
25		2				
		4	13"/24"	26.0		
		1	S11	29.0		Loose gray brown fine to medium sand SILT, little clay, organics, moist.
		2				
30		3	17"/24"	31.0		

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	41
Rock Cored (Linear ft)	--
Number of Samples	13S

BORING NO. **HA-106**

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-106**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2	S12	34.0		Loose gray brown fine to medium sand SILT, little clay, organics, moist,
		3				
35		3				ALLUVIUM
		4	20"/24"	36.0		
		1	S13	39.0		Same.
40		2				
		3				
		4	22"/24"	41.0		
						Bottom of Exploration at 41.0 ft.
45						
50						
55						
60						
65						
70						

Form #3001

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-107

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	26-May-00
DRILLER	L. TODD	**DATE FINISHED**	26-May-00

Elevation 266.08 ft **Datum** City

Boring Location See Boring Location Plan

Rig Make & Model CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ______ ☐ Cutting Head

Hammer Type ☑ Safety ☐ Doughnut

Drill Mud ☐ Bentonite ☐ Polymer ☑ None

Casing ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
					0.5	
		5	S1	0.5		Medium dense black brown fine to coarse SAND, some gravel, dry.
		11				FILL
		21	7"/18"	2.0		
		13	S2	2.0		Medium dense brown fine to coarse SAND, damp.
		18				
		14				
		11	16"/24"	4.0		
		5	S3	4.0		Dense brown black fine to coarse SAND, little silt, brick, damp.
5		22				
		22				
		30	17"/24"	6.0		
		14	S4	6.0		Same, except medium dense.
		11				
		14				
		12	20"/24"	8.0		
		4	S5	8.0		Medium dense brown orange fine to coarse SAND, moist.
		6				
		6				
10		7	18"/24"	10.0		
		1	S6	13.0	13.0	Loose brown gray fine sand SILT, trace to little clay, trace organics, moist.
		2				
		3				
15		3	21"/24"	15.0		ALLUVIUM
		2	S7	18.0		Same.
		3				
		4				
20		5	24"/24"	20.0		
		7	S8	23.0	23.0	Very dense gray brown silty SAND, some gravel. Pockets of brown fine to coarse SAND, wet.
		35				
		37				GLACIAL TILL
25		21	22"/24"	25.0		
		22	S9	28.0		Same.
		24				
		26				
30		26	20"/24"	30.0		

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
26-May		0.5			18

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	49.0
Rock Cored (Linear ft)	5.0
Number of Samples	13S

BORING NO. HA-107

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-107**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		15	S10	33.0		Very dense gray brown fine silty sand, little gravel, wet.
		39				GLACIAL TILL
		41				
		40	19"/24"	35.0		
35						
		16	S11	38.0		Same.
		26				
		39				
		43	17"/24"	40.0		
40						
		25	S12	43.0		Very dense gray brown fine sandy SILT, trace clay, little gravel, wet.
		65				
		100/.4	16"/17"	44.4		
45						
		24	S13	48.0		Same, except pocket of red brown fine to coarse SAND, some rock fragments, wet.
		100/.5	11"/12"	49.0	49.0	Began Rock Coring at 49.0 ft.
50						
						Competent red sandstone with interbedded gray sandstone.
					54.0	Bottom of Exploration at 54.0 ft.
55						
60						
65						
70						

FILE NO.	70819-000	BORING NO.	HA-107

Form #3001

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-107**

Page 1 of 1

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	26-May-00
DRILLER	L. TODD	DATE FINISHED	26-May-00

Elevation ft | Datum | Boring Location

Item	Casing	Sampler	Core Barrel
Type	HAS	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: ☑ Truck ☐ ATV ☐ Track ☐ Skid ☐ Tripod ☐ Geoprobe ☐ Air Track ☐ ☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in)	RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
		49.5					
							0-2 ft. Highly fractured.
	Avg. 4 ft. per minute		1.9/5.0	38			Competent red sandstone with interbedded gray sandstone.
							QUEENSTONE FORMATION
5		54.5					
10							
15							
20							
25							
30							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)
Rock Cored (linear ft)
Samples

BORING NO. HA-107

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-111**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	23-May-00
DRILLER	L. TODD	**DATE FINISHED**	23-May-00

Elevation 251.83 ft **Datum** City **Boring Location** See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model CME 55 - Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ______ ☐ Cutting Head

Hammer Type ☑ Safety ☐ Doughnut

Drill Mud ☐ Bentonite ☐ Polymer ☑ None

Casing ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0			No sample		0.5	ASPHALT
					1.0	CRUSHED STONE
		3	S1	1.0		Loose gray brown silty fine to coarse SAND, pocket of black fine to coarse
		3	5"/12"	2.0		SAND, dry.
		5	S2	2.0		Medium dense gray brown fine to coarse SAND, little silt, wet.
		6				FILL
		7				
		6	8"/24"	4.0		
		9	S3	4.0		Medium dense gray brown green (mottled) silty fine to coarse SAND, some fine
5		4				gravel, wood, moist. Water in borehole at 3.9 ft.
		19				
		21	12"/24"	6.0		
		19	S4	6.0		Dense gray brown gravelly SAND, wet. Rock Obstruction in shoe.
		19				
		27				
		32	16"/24"	8.0		
		21	S5	8.0		Very dense gray brown fine to coarse SAND, some fine gravel, wet.
		24				
		26				
10		25	20"/24"	10.0	10.0	
		10	S6	10.0		Medium dense gray brown fine to coarse SAND.
		15				
		14				ALLUVIUM
		19	17"/24"	12.0		
15		4	S7	15.0		Loose gray brown fine to coarse SAND, some fine to coarse gravel, moist.
		6				
		3				
		3	14"/24"	17.0		
20		1	S8	20.0		Very loose gray brown fine sand SILT, wood, natural laminations in soils, moist.
		1				
		2				
		2	18"/24"	22.0		
25		1	S9	25.0		Very loose gray brown fine sand SILT, little clay, wood.
		1				
		1				
		1	24"/24"	27.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
23-May	10	0.75			3.9

Sample ID
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary
Overburden (Linear ft) 38.3
Rock Cored (Linear ft) 5
Number of Samples 14S

BORING NO. HA-111

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-111

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	S10	30.0		Very loose gray brown fine sand SILT, little clay, root structures, wood, moist.
		2				
		2				
		3	24"/24"	32.0		
						ALLUVIUM
35		2	S11	35.0		Same, except some clay.
		2				
		2				
		2	24"/24"	37.0		
40		2	S12	40.0		Very loose gray-green fine sand SILT, root structures, red fine to coarse sand in shoe, moist.
		2				
		2				
		6	24"/24"	42.0	42.0	
						GLACIAL TILL
45		70	S13	45.0		Dense red brown SILT, little clay, gray green fractured sandstone.
		33			46.0	
		8				
		12	16"/24"	47.0		
50		100/.2				No Recovery.
55		100/.2	S14	55.0	55.0	Very dense red, brown fractured sandstone, red brown silt, wet.
			2"/3"	55.3		
						WEATHERED BEDROCK
						Auger Refusal at 58.5 ft.; began rock coring.
60						
65						
70						

FILE NO. 70819-000 **BORING NO.** HA-111

HALEY & ALDRICH

TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						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 Report for LBA-MW1
70						
75						
80						
85						
90						
95						
##						

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-111**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	23-May-00
DRILLER	L. TODD	DATE FINISHED	23-May-00

Elevation ft | Datum | Boring Location

Item	Casing	Sampler	Core Barrel
Type	HAS	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: ☑ Truck ☐ ATV ☐ Track ☐ Skid ☐ Tripod ☐ Geoprobe ☐ Air Track ☐ ______ ☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in)	RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
		58.5					
	5						Competent red sandstone with interbedded gray sandstone.
	5						QUEENSTONE FORMATION
	3						
	4						
5	5	63.5					
10							
15							
20							
25							
30							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary
- Overburden (Linear ft)
- Rock Cored (linear ft)
- Samples

BORING NO. HA-111

Form #3002

OBSERVATION WELL INSTALLATION REPORT

HALEY & ALDRICH

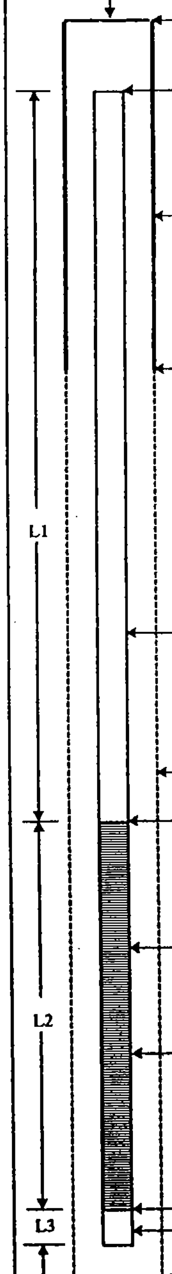
Well No.	Boring No.
LBA-MW1	HA-111*

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	**DATE INSTALLED**	5/24/2000
DRILLER	L. TODD	**WATER LEVEL**	

Ground El. Not Surveyed ft
El. Datum Not Surveyed
Location North Parking Lot

☐ **Guard Pipe**
☑ **Roadway Box**

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
Gray brown silty fine to coarse SAND. Some gravel, wood, wet.	Sand/Grout



Type of protective cover/lock: Roadway Box

Height/Depth of top of guard pipe/roadway box above/below ground surface: -- ft

Height/Depth of top of riser pipe above/below ground surface: 0.3 ft

Type of protective casing: None

Length: -- ft

Inside Diameter: -- in

Depth of bottom of guard pipe/roadway box: -- ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite Seal	1.0	2.5

Type of riser pipe:

Inside diameter of riser pipe: 2.0 in

Type of backfill around riser: Quartz Sand

Diameter of borehole: 4-1/4 in

Depth to top of well screen: 3.0 ft

Type of screen: SCHEDULE 40 PVC

Screen gauge or size of openings: 0.010 in

Diameter of screen: 2.0 in

Type of backfill around screen: Quartz Sand

Depth of bottom of well screen: 13.0 ft

Bottom of Silt trap: -- ft

Depth of bottom of borehole: 14.0 ft

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)

(Not to Scale)

Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length
3 ft	+	10 ft	+	0 ft	=	13 ft

COMMENTS: Well installed 4 ft. west of Boring HA-111. Hole was blind augered to 14.0 ft. per Greg Senegal of Labella Associates

Form # 3010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-113**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	7-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation 270.8 ft Datum City

Boring Location: See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig: ☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		1 / 2 / 3 / 3	S1 16"/24"	0.0 – 2.0		Loose brown silty fine SAND, organics, dry.
		3 / 2 / 2 / 2	S2 14"/24"	2.0 – 4.0		Very loose brown red silty fine to coarse SAND, little rock fragments, slag, dry. FILL
5		3 / 4 / 5 / 7	No Recovery 2"/24"	4.0 – 6.0		No Recovery
		7 / 5 / 4 / 4	S3 15"/24"	6.0 – 8.0		Loose brown red silty fine to coarse SAND, little rock fragments, slag, dry.
		4 / 100/.4	S4 4"/24"	8.0 – 8.9		Same. Obstruction at 8.3 ft.
10						Note: Moved 4.0 ft. to south. Blind augered to 10.0 ft. and hit auger refusal again. Moved again 10.0 ft. south of second boring. See Boring HA-113a.
15						
20						
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	27.0 ft.
Rock Cored (Linear ft)	–
Number of Samples	8S

BORING NO. **HA-113**

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-113a

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	7-Jun-00
DRILLER	L. TODD	**DATE FINISHED**	8-Jun-00

Elevation 270.8 ft **Datum** City **Boring Location** See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model CME 55 - Truck Mount

☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ ______

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type ☑ Safety ☐ Doughnut

Drill Mud ☐ Bentonite ☐ Polymer ☑ None

Casing ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						(Blind augered to 10.0 ft.) See Boring HA-113
5						
10		1	S5	10.0		Loose brown red silty fine to coarse SAND, little rock fragments, slag, moist.
		2				FILL
		3				
		3	3"/24"	12.0		
						(Slag obstruction in spoon)
15		7	S6	15.0		
		11				
		11				
		14	1"/24"	17.0		
					20.0	
20		3	S7	20.0		Very dense gray brown silty fine to coarse SAND, some gravel, pockets of clayey silt, moist.
		14				GLACIAL TILL
		36				
		50	22"/24"	22.0		
25		30	S8	25.0		Same as above.
		76				
		98				
		100/.3	22"/24"	27.0		
						Bottom of Exploration at 27.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft) 27.0 ft.
Rock Cored (Linear ft) --
Number of Samples 8S

BORING NO. HA-113a

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-114

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	25-May-00
DRILLER	L. TODD	**DATE FINISHED**	25-May-00

Elevation 261.92 ft **Datum** City **Boring Location** See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model CME 55 - Truck Mount

- [x] Truck
- [ ] ATV
- [ ] Track
- [ ] Skid
- [ ] Tripod
- [ ] Geoprobe
- [ ] Air Track
- [ ] ______
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type
- [x] Safety
- [ ] Doughnut

Drill Mud
- [ ] Bentonite
- [ ] Polymer
- [x] None

Casing [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		1	S1	0.0		Medium dense brown sandy SILT, brick, dry.
		7				
		12				FILL
		6	6"/24"	2.0		
		6	S2	2.0		Medium dense brown black sandy SILT, brick, slag, dry.
		7				
		5				
		5	8"/24"	4.0		
		8	S3	4.0		Same.
		15				
5		7				
		8	10"/24"	6.0		
		35	S4	6.0		Medium dense brown black silty SAND, brick, slag, dry.
		22				
		16				
		50/.3	12"/24"	8.0		
		12	S5	8.0		Same, except some rock fragments.
		17				
		100/.4				
			9"/24"	10.0		
10		100/.3	S6	10.0		Concrete Obstruction
				10.3		(offset 6' south of initial location, see log HA-114a)
15						
20						
25						
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	25.0
Rock Cored (Linear ft)	--
Number of Samples	10S

BORING NO. HA-114

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-114a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	25-May-00
DRILLER	L. TODD	DATE FINISHED	25-May-00

Elevation 261.92 ft Datum City

Boring Location: See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig: ☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ ______

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						Blind Augered to 12.0 ft. (See Boring Log HA-114)
12.0		20 / 97 / 90 / 29	S7 13"/24"	12.0–14.0		Very dense gray black blue gravelly SAND, slag, wet. FILL
14.0		3 / 5 / 8 / 12	S8 16"/24"	14.0–16.0	14.0	Medium dense gray brown clayey SILT, moist. ALLUVIUM
19.0		7 / 17 / 20 / 21	S9 18"/24"	19.0–21.0	19.0	Medium dense brown silty fine to coarse SAND, some gravel, wet. GLACIAL TILL
24.0		87 / 100/.4	S10 10"/24"	24.0–24.9		Very dense gray brown fine to coarse SAND, some gravel, wet.
25						Bottom of Exploration at 25.0 ft.
						Monitoring well installed in completed borehole. See Installation Report for LBA-MW3.

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
					-

Sample ID
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary
- Overburden (Linear ft) 25
- Rock Cored (Linear ft) --
- Number of Samples 10S

BORING NO. **HA-114a**

Form #3000

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

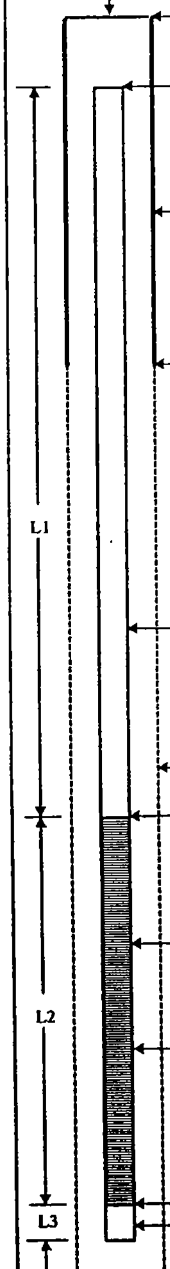
Well No. **LBA-MW3**
Boring No. **HA-114a**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/25/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El.	Not Surveyed ft	Location	North Parking Lot
EL Datum	Not Surveyed		

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
Gray brown silty SAND, slag, brick	Bentonite/ Quartz Sand



Type of protective cover/lock: Roadway Box

Height/Depth of top of guard pipe/roadway box above/below ground surface: -- ft

Height/Depth of top of riser pipe above/below ground surface: 0.3 ft

Type of protective casing: None
Length: -- ft
Inside Diameter: -- in

Depth of bottom of guard pipe/roadway box: -- ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite Seal	1.0	12.0

Type of riser pipe: PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Bentonite Chips

Diameter of borehole: 4-1/4 in

Depth to top of well screen: 15.0 ft

Type of screen: SCHEDULE 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: Quartz Sand

Depth of bottom of well screen: 25.0 ft

Bottom of Silt trap: -- ft

Depth of bottom of borehole: 25.0 ft

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)

(Not to Scale)

Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length
14.7 ft	+	10 ft	+	0 ft	=	24.7 ft

COMMENTS:

Form # 3010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-115**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	25-May-00
DRILLER	L. TODD	**DATE FINISHED**	25-May-00

Elevation 253.68 ft **Datum** City **Boring Location** See Boring Location Plan

Item	**Casing**	**Sampler**	**Core Barrel**
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model CME 55 - Truck Mount

- ☑ Truck ☐ Tripod ☑ Cat-Head
- ☐ ATV ☐ Geoprobe ☐ Winch
- ☐ Track ☐ Air Track ☐ Roller Bit
- ☐ Skid ☐ ______ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						CRUSHED STONE
		14 / 54 / 34 / 42	S1 16"/24"	2.0 – 4.0		Very dense black blue gray silty fine to coarse SAND, brick, slag, dry. FILL
5		28 / 48 / 23 / 20	S2 14"/24"	4.0 – 6.0		Same, except moist.
		12 / 15 / 12 / 8	S3 7"/24"	6.0 – 8.0		Medium dense brown-black sandy ROCK FRAGMENTS, wet.
		7 / 7 / 7 / 14	S4 4"/24"	8.0 – 10.0		Same.
10		10 / 5 / 6 / 6	S5 4"/24"	10.0 – 12.0		Same.
		12 / 8 / 12 / 8	S6 6"/24"	12.0 – 14.0		Same.
15						
		2 / 2 / 3 / 3	S7 10"/24"	19.0 – 21.0		Loose brown-gray sandy SILT, organics, wet. ALLUVIUM
20						
		3 / 4 / 3 / 3	S8 10"/24"	24.0 – 26.0		Same.
25						Bottom of Exploration at 26.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	26
Rock Cored (Linear ft)	–
Number of Samples	8S

BORING NO. **HA-115**

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. HA-116

Page 1 of 1

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	2-Jun-00
DRILLER	L. TODD	DATE FINISHED	2-Jun-00

Elevation 252.4 ft Datum City

Boring Location: See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

- [x] Truck
- [ ] ATV
- [ ] Track
- [ ] Skid
- [ ] Tripod
- [ ] Geoprobe
- [ ] Air Track
- [ ]
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		4 16 19 24	S1 11"/24"	0.0–2.0		0.4 ft. TOPSOIL Medium dense black blue silty fine to coarse SAND, slag, dry. FILL
		22 12 21 11	S2 12"/24"	2.0–4.0		Same, except wet.
		42 25 10 20	S3 8"/24"	4.0–6.0		Same.
5						
		14 12 4 2	S4 10"/24"	6.0–8.0	8.0	Medium dense brown fine to coarse SAND, slag.
		3 5 8 10	S5 8"/24"	8.0–10.0		Medium dense gray brown fine to coarse SAND, some gravel, wet.
10		18 7 4 6	S6 8"/24"	10.0–12.0		Same. ALLUVIUM
15		1 2 3 3	S7 3"/24"	15.0–17.0		Loose gray brown fine sand SILT, organics, moist.
20		2 1 3 3	S8 16"/24"	20.0–22.0		Very loose gray brown fine sand SILT, little clay, organics, moist.
25		1 1 2 3	S9 18"/24"	25.0–27.0		Same. Bottom of Exploration at 27.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	27
Rock Cored (Linear ft)	–
Number of Samples	9S

BORING NO. HA-116

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-116**

Page 1 of 1

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	2-Jun-00
DRILLER	L. TODD	DATE FINISHED	2-Jun-00

Elevation 252.4 ft | Datum City | Boring Location: See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ________ ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						0.4 ft. TOPSOIL
0		4	S1	0.0		Medium dense black blue silty fine to coarse SAND, slag, dry.
		16				FILL
		19				
		24	11"/24"	2.0		
		22	S2	2.0		Same, except wet.
		12				
		21				
		11	12"/24"	4.0		
		42	S3	4.0		Same.
		25				
5		10				
		20	8"/24"	6.0		
		14	S4	6.0		Medium dense brown fine to coarse SAND, slag.
		12				
		4				
		2	10"/24"	8.0		
		3	S5	8.0		Medium dense gray brown fine to coarse SAND, some gravel, wet.
		5				
		8				
		10	8"/24"	10.0		
10		18	S6	10.0		Same.
		7				
		4				ALLUVIUM
		6	8"/24"	12.0		
15		1	S7	15.0		Loose gray brown fine sand SILT, organics, moist.
		2				
		3				
		3	3"/24"	17.0		
20		2	S8	20.0		Very loose gray brown fine sand SILT, little clay, organics, moist.
		1				
		3				
		3	16"/24"	22.0		
25		1	S9	25.0		Same.
		1				
		2				
		3	18"/24"	27.0		
						Bottom of Exploration at 27.0 ft.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary
- Overburden (Linear ft) 27
- Rock Cored (Linear ft) –
- Number of Samples 9S

BORING NO. **HA-116**

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-117**

Page 1 of 1

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	24-May-00
DRILLER	L. TODD	DATE FINISHED	24-May-00

Elevation 253.7 ft Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐ ______

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0		2, 4, 7, 8	S1 8"/24"	0.0–2.0		Medium dense brown sandy SILT, organics, dry.
		10, 9, 20, 30	S2 9"/24"	2.0–4.0		Medium dense brown blue silty SAND, foundry, debris, dry. FILL
5		13, 34, 53, 50/.4	S3 14"/24"	4.0–6.0		Very dense blue-black gray sandy SILT, brick, slag, moist.
		62, 100/.4	S4 7"/10"	6.0–8.0		Same, except wet.
		6, 13, 15, 15	S5 9"/24"	8.0–10.0	10.0	Medium dense black-blue silty ROCK FRAGMENTS, wet.
10		13, 20, 7, 4	S6 12"/24"	10.0–12.0		Medium dense sandy SILT, little clay, organics, moist.
		2, 5, 19, 19	S7 12"/24"	12.0–14.0		Medium dense black-gray silty fine to coarse SAND, some fine gravel, moist. ALLUVIUM
15						
20		2, 5, 6, 7	S8 14"/24"	19.0–21.0		Medium dense gray-brown sandy SILT, little gravel, wood, organics, moist.
25		3, 3, 4, 4	S9 17"/24"	24.0–26.0		Same.
						Bottom of Exploration at 26.0 ft.
						Monitoring well installed in completed borehole. See Installation Report for LBA-MW2.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft) 26
Rock Cored (Linear ft) --
Number of Samples 9S

BORING NO. **HA-117**

Form #3000

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No.	LBA-MW2
Boring No.	HA-117

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE INSTALLED	5/24/2000
DRILLER	L. TODD	WATER LEVEL	

Ground El. Not Surveyed ft
El. Datum Not Surveyed
Location

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
Black brown silty SAND, slag, brick, gravel.	Quartz Sand (17 ft. bgs.) Bentonite (17 ft. to 26 ft.)

(Bottom of Exlporation)
(Numbers refer to depth from ground surface in feet)

Type of protective cover/lock: Roadway Box

Height/Depth of top of guard pipe/roadway box above/below ground surface: -- ft

Height/Depth of top of riser pipe above/below ground surface: 0.3 ft

Type of protective casing: None
Length: -- ft
Inside Diameter: -- in

Depth of bottom of guard pipe/roadway box: -- ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	0.0
Bentonite Seal	0.0	4.0

Type of riser pipe: PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Quartz Sand

Diameter of borehole: 4-1/4 in

Depth to top of well screen: 5.0 ft

Type of screen: SCHEDULE 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: Quartz Sand

Depth of bottom of well screen: 15.0 ft

Bottom of Silt trap: 15.0 ft

Depth of bottom of borehole: 26.0 ft

L1 L2 L3

(Not to Scale)

Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length
5 ft	+	10 ft	+	0 ft	=	15 ft

COMMENTS: Bottom of borehole seal from 26.0 ft. to 17.0 ft. b.g.s. using Bentonite Chips.

Form # 3010

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-118**

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PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	8-Jun-00
DRILLER	L. TODD	DATE FINISHED	8-Jun-00

Elevation 242.78 ft | Datum City | Boring Location: See Boring Location Plan

Rig Make & Model: CME 55 - Truck Mount

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

- [x] Truck [ ] Tripod [ ] ATV [ ] Geoprobe [ ] Track [ ] Air Track [ ] Skid [ ]
- [x] Cat-Head [ ] Winch [ ] Roller Bit [ ] Cutting Head
- Hammer Type: [x] Safety [ ] Doughnut
- Drill Mud: [ ] Bentonite [ ] Polymer [x] None
- Casing: [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		9	S1	0.5		Medium dense black brown red silty fine to coarse SAND, brick, some rock fragments, dry.
		18				
		9	13"/18"	2.0	2.0	FILL
		7	S2	2.0		Medium dense brown silty fine to coarse SAND, moist.
		12				ALLUVIUM
		9				
		8	12"/24"	4.0		
		4	S3	4.0		Loose gray brown silty fine to medium SAND, organics, moist.
5		4				
		3				
		3	12"/24"	6.0		
10		6	S4	10.0		Medium dense gray fine to coarse SAND, little silt, little gravel, wet.
		14				
		12				
		4	16"/24"	12.0		
15		3	S5	15.0		Very loose brown organic SILT, moist.
		1				
		1				
		4	16"/24"	17.0		
					20.0	
20		4	S6	20.0		Medium dense gray brown silty fine to coarse SAND, some gravel, moist.
		16				GLACIAL TILL
		19				
		22	20"/24"	22.0		
25		28	S7	25.0		Very dense brown silty fine to coarse SAND, some gravel, moist.
		100/.4	10"/10"	25.9		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)
3/8/2000		0.5			9.1

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	31
Rock Cored (Linear ft)	–
Number of Samples	12S

BORING NO. HA-118

HALEY & ALDRICH

TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
			S8	30.0		Very dense brown silty fine to coarse SAND, some gravel, moist.
		100/.4	3"/5"	30.4		
35		18	S9	35.0		Same, except gray brown.
		77				
		100/.5	12"/18"	36.5		
40		36	S10	40.0		Same.
		66				
		98				
		87	12"/24"	42.0		
45		100/.5	S11	45.0		Same, except trace rock fragments.
			3"/6"	45.5		
50		100/.4	S12	50.0		Very dense red silty sandstone rock fragments.
			4"/5"	50.5		Bottom of Exploration at 51.0 ft.
55						
60						
65						
70						

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-119**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	2-Jun-00
DRILLER	L. TODD	DATE FINISHED	2-Jun-00

Elevation 250.52 ft | Datum City | Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME 55 - Truck Mount

- [x] Truck - [ ] Tripod - [x] Cat-Head
- [ ] ATV - [ ] Geoprobe - [ ] Winch
- [ ] Track - [ ] Air Track - [ ] Roller Bit
- [ ] Skid - [ ] ____ - [ ] Cutting Head

Hammer Type: [x] Safety [ ] Doughnut

Drill Mud: [ ] Bentonite [ ] Polymer [x] None

Casing: [ ] Driven [ ] Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		44	S1	1.0		Very dense brown gravelly fine to coarse SAND, dry.
		66	3"/12"	2.0		FILL
		10	S2	2.0		Medium dense brown silty fine to medium SAND, little silt, wet.
		10				
		6				ALLUVIUM
		7	14"/24"	4.0		
		1	S3	4.0		Medium dense brown gray, fine to coarse SAND, little silt, wet.
		7				
5		7				
		7	16"/24"	6.0		
		8	S4	6.0		Medium dense gray brown fine to coarse SAND, some silt, little rock fragments, wet.
		12				
		20				
		25	10"/24"	8.0		
		5	S5	8.0		Medium dense gray brown gravelly fine to coarse SAND, trace silt, wet.
		14				
		25				
		50	20"/24"	10.0		
10						
		14	S6	14.0		Loose gray brown sandy SILT, wet.
		3				
15		3				
		3	18"/24"	16.0		
		3	S7	19.0		Loose gray brown silty fine to coarse SAND, trace gravel, wet.
		3				
20		3				
		3	20"/24"	21.0		
		6	S8	24.0		Loose gray brown fine to medium sandy SILT, trace clay, organics, moist.
		2				
25		3				
		2	15"/24"	26.0		
		1	S9	29.0		Same.
		1				
30		3	14"/24"	31.0		

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	51
Rock Cored (Linear ft)	–
Number of Samples	13S

BORING NO. **HA-119**

TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
				31.0		
		1	S10	34.0		Loose gray brown fine sand SILT, trace clay, organics, moist.
35		2				
		3				
		3	17"/24"	36.0		
		1	S11	39.0		Same.
40		2				
		3				
		3	22"/24"	41.0		
		1	S12	44.0		Loose, gray fine sand SILT, trace clay, organics.
45		2				
		3				
		3	24"/24"	46.0		
		1	S13	49.0		Same.
50		2				
		2				
		4	18"/24"	51.0		Bottom of Exploration at 51.0 ft.
55						
60						
65						
70						

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-120**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	8-Jun-00
DRILLER	L. TODD	**DATE FINISHED**	9-Jun-00

Elevation 254.31 ft **Datum** City **Boring Location** See Boring Location Plan

Rig Make & Model CME 55 - Truck Mount

Item	**Casing**	**Sampler**	**Core Barrel**
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

☑ Truck ☐ Tripod ☐ ATV ☐ Geoprobe ☐ Track ☐ Air Track ☐ Skid ☐

☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type ☑ Safety ☐ Doughnut

Drill Mud ☐ Bentonite ☐ Polymer ☑ None

Casing ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
0						ASPHALT
		6	S1	0.5		Medium dense gray to black fine to coarse SAND, some rock fragments, dry.
		10				FILL
		20	10"/18"	2.0		
		5	S2	2.0		Medium dense black to red brown silty fine to coarse SAND, some rock fragments,
		5				dry.
		7				
		9	12"/24"	4.0		
		6	S3	4.0		Same, except loose.
5		3				
		3				
		2	12"/24"	6.0	6.0	
		1	S4	6.0		Very loose brown silty fine to medium SAND, trace rock fragments, moist.
		1				ALLUVIUM
		1				
		1	7"/24"	8.0		
		1	S5	8.0		Same, except wet.
		1				
		1				
		2	3"/24"	10.0		
10		1	S6	10.0		Very loose gray brown silty fine to coarse SAND, little gravel, wet.
		1				
		3				
		4	18"/24"	12.0		
		5	S7	12.0		Same, except some gravel.
		5				
		5				
		12	16"/24"	14.0		
		6	S8	14.0		Medium dense gray brown silty fine to coarse SAND, little gravel, wet.
15		6				
		5				
		8	14"/24"	16.0		
20		1	S9	20.0		Same, except very loose.
		2				
		2				
		3	14"/24"	22.0		
25		3	S10	25.0		Very loose gray brown fine to medium sandy SILT, trace clay, organics, moist.
		1				
		2				
		1	14"/24"	27.0		
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	52
Rock Cored (Linear ft)	--
Number of Samples	15S

BORING NO. **HA-120**

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-120**

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 1 2 2	S11 18"/24"	30.0 32.0		Very loose gray brown fine to medium sandy SILT, trace clay, organics, moist. ALLUVIUM
35		1 1 2 2	S12 24"/24"	35.0 37.0		Same.
40		1 3 3 3	S13 24"/24"	40.0 42.0		Same.
45		1 2 4 3	S14 22"/24"	45.0 47.0		Same.
50		H 2 2 2	S15 24"/24"	50.0 52.0		Same. Bottom of Exploration at 52.0 ft.
55						
60						
65						
70						

FILE NO.	70819-000	**BORING NO.**	HA-120

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-122**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	D. NOSTRANT
CONTRACTOR	GEOLOGIC ENTERPRISES	DATE STARTED	31-May-00
DRILLER	L. TODD	DATE FINISHED	31-May-00

Elevation 252.8 ft Datum City Boring Location See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	1-7/8
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model: CME-55 Truck Mount

☑ Truck ☐ Tripod ☑ Cat-Head
☐ ATV ☐ Geoprobe ☐ Winch
☐ Track ☐ Air Track ☐ Roller Bit
☐ Skid ☐ ______ ☑ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						TOPSOIL
0		7, 8, 10, 8	S1 14"/24"	0.0–2.0	0.3	Medium dense dark brown, coarse to fine sand, little cinders, little gravel.
						FILL
		6, 6, 5, 5	S2 10"/24"	2.0–4.0		Same.
5		3, 3, 2, 2	S3 0"/24"	4.0–6.0		No Recovery.
		2, 3, 2, 2	S4 2"/24"	6.0–8.0		Loose dark brown coarse to fine sand, some gravel, trace silt, wet.
		2, 2, 3, 21	S5 18"/24"	8.0–10.0		Same.
10		1, 2, 6, 10	S6 14"/24"	10.0–12.0		Same.
		26, 24, 10, 9	S7 20"/24"	12.0–14.0	13.2	Dense blue-gray gravel, little coarse to fine sand, wet.
15		3, 2, 1, 3	S8 16"/24"	14.0–16.0	14.3	Very loose brown ORGANICS, trace sand, trace silt, wet.
					15.5	Very loose gray-brown fine clayey SILT, some sand, little organics, moist.
						ALLUVIUM
20		1, 2, 1, 2	S9 24"/24"	20.0–22.0		Same, except little fine sand.
25		2, 2, 2, 3	S10 20"/24"	25.0–27.0		Same.
30						

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	37
Rock Cored (Linear ft)	5
Number of Samples	12S

BORING NO. **HA-122**

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-122**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		2	S11	30.0		Loose gray-brown clayey SILT, little fine sand, little organics, moist.
		3				
		3				
		3	24"/24"	32.0		ALLUVIUM
35		1	S12	35.0		
		6			36.0	
		8				Medium dense brown-red coarse to fine sandy SILT, some gravel, little clay, damp
		30	15"/24"	37.0	37.0	to moist. GLACIAL TILL
						Observed auger refusal at 37.0 ft. Begin coring at 37.0 ft. See Core Boring Report.
40						
						Bottom of Exploration at 42.0 ft.
45						
50						
55						
60						
65						
70						

FILE NO. 70819-000 BORING NO. HA-122

HALEY & ALDRICH

CORE BORING REPORT

BORING NO. **HA-122**

PROJECT	PORT OF ROCHESTER	H&A FILE NO.	70819-000
LOCATION	ROCHESTER, NEW YORK	PROJECT MGR.	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	FIELD REP.	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISE	DATE STARTED	30-May-00
DRILLER	L. TODD	DATE FINISHED	30-May-00

Elevation ft | Datum | Boring Location

Item	Casing	Sampler	Core Barrel
Type	HAS	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	--	140	
Hammer Fall (in)	--	30	

Rig Make & Model: ☑ Truck ☐ ATV ☐ Track ☐ Skid ☐ Tripod ☐ Geoprobe ☐ Air Track ☐ ☑ Cat-Head ☐ Winch ☐ Roller Bit ☐ Cutting Head

Hammer Type: ☑ Safety ☐ Doughnut

Drill Mud: ☐ Bentonite ☐ Polymer ☑ None

Casing: ☐ Driven ☐ Spun

Depth (ft)	Drilling Rate (min/ft)	Core No. Depth (ft)	Recovery (in) / RQD (in)	Recovery (%) / RQD (%)	Weathering	Stratum Change (ft)	Visual Classification and Remarks
						37.0	Begin Coring at 37.0 ft.
		37.0					Moderately soft, moderately weathered red-brown-green mottled fine grained, very thin to thin bedded SANDSTONE with close to very close weathered shaley partings.
		R1	48 / 35	80 / 58	MOD		QUEENSTON FORMATION
40							
		42.0				42.0	Bottom of Boring at 42.0 ft.
45							
50							
55							
60							
65							

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon Sample
G Geoprobe

Summary

Overburden (Linear ft)	37
Rock Cored (linear ft)	5
Samples	12S
BORING NO.	HA-122

Form #3002

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-123**

PROJECT	PORT OF ROCHESTER	**H&A FILE NO.**	70819-000
LOCATION	ROCHESTER, NEW YORK	**PROJECT MGR.**	M. VALENTINE
CLIENT	LABELLA ASSOCIATES	**FIELD REP.**	R. DEDRICK
CONTRACTOR	GEOLOGIC ENTERPRISES	**DATE STARTED**	5-Jun-00
DRILLER	L. TODD	**DATE FINISHED**	6-Jun-00

Elevation 253.64 ft **Datum** City **Boring Location** See Boring Location Plan

Item	Casing	Sampler	Core Barrel
Type	HSA	SS	NX
Inside Diameter (in)	3-1/4	1-3/8	2
Hammer Weight (lb)	–	140	
Hammer Fall (in)	–	30	

Rig Make & Model CME 55 - Truck Mount

- [x] Truck
- [ ] ATV
- [ ] Track
- [ ] Skid
- [ ] Tripod
- [ ] Geoprobe
- [ ] Air Track
- [ ] ______
- [x] Cat-Head
- [ ] Winch
- [ ] Roller Bit
- [ ] Cutting Head

Hammer Type
- [x] Safety
- [ ] Doughnut

Casing
- [ ] Driven
- [ ] Spun

Drill Mud
- [ ] Bentonite
- [ ] Polymer
- [x] None

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						(0.3 ft. TOPSOIL)
0		4	S1	0.0		Medium dense brown gray sandy SILT, little coarse gravel, dry.
		8				FILL
		8				
		8	8"/24"	2.0		
		8	S2	2.0		Medium dense brown red silty fine to coarse SAND, trace fine gravel, dry.
		7				
		8				
		8	13"/24"	4.0		
		5	S3	4.0		Same, except moist.
5		4				
		3				
		3	16"/24"	6.0		
		2	S4	6.0		Loose brown red silty fine to coarse SAND, trace fine gravel, wet.
		2				
		2				
		2	20"/24"	8.0		
		1	S5	8.0		Medium dense black brown silty fine to coarse SAND, wood, wet.
		4				
		8				
		9	16"/24"	10.0		
10		5	S6	10.0		No Recovery.
		5				
		2				
		2	0"/24"	12.0		
		5	S7	12.0		No Recovery.
		5				
		5				
		3	0"/24"	14.0		
		5	S8	14.0		Loose gray brown silty fine to coarse SAND, some organics, moist.
15		4				
		1				
		3	19"/24"	16.0		ALLUVIUM
		2	S9	19.0		Loose gray brown clayey SILT, little sand, moist.
20		2				
		2				
		2	10"/24"	21.0		
		1	S10	24.0		Same, except little clay.
25		2				
		2				
		2	14"/24"	26.0		
		2	S11	29.0		Same.
		2				
30		4	15"/24"	31.0		

Water Level Data

Date	Time	Elapsed Time (hrs)	Bottom of Casing (ft)	Bottom of Boring (ft)	Water (ft)

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Summary

Overburden (Linear ft)	114
Rock Cored (Linear ft)	2
Number of Samples	24S

BORING NO. HA-123

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
				31.0		
		2	S11	34.0		Very loose gray brown fine to medium sand SILT, trace clay, organics, moist.
35		2				
		2				
		4	20"/24"	36.0		
						ALLUVIUM
		1	S12	39.0		Same.
40		2				
		2				
		3	14"/24"	41.0		
		1	S13	44.0		Very loose gray silty fine to medium SAND, moist.
45		2				
		2				
		3	19"/24"	46.0		
		1	S14	49.0		Loose gray fine sand SILT, trace clay, organics, moist.
50		2				
		3				
		4	20"/24"	51.0		
		1	S15	54.0		Same.
55		1				
		3				
		3	20"/24"	56.0		
		1	S16	59.0		Same.
60		2				
		5				
		4	20"/24"	61.0		
		3	S17	64.0		Loose gray fine sand SILT, trace clay organics, moist.
65		1				
		4				
		5	24"/24"	66.0		
		WOH	S18	69.0		Same, except medium dense.
70		5				
		7				
		8	22"/24"	71.0		

Form #3001

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
		4	S19	74.0		Medium dense gray fine sandy SILT, trace clay, organics moist.
		5				
75		8				ALLUVIUM
		9	22"/24"	76.0		
		2	S20	79.0		Same.
		5				
80		7				
		9	23"/24"	81.0		
		5	S21	84.0		Same.
		5				
85		8				
		9	20"/24"	86.0		
		5	S22	89.0		Medium dense gray brown silty medium to fine SAND, trace clay, moist.
		5				
90		8				
			21"/24"	91.0		
		WOR	S23	94.0		Very loose gray brown silty medium to fine SAND, trace clay, moist.
		WOR				
95		WOR				
		5	22"/24"	96.0		
		5	S24	99.0		Same, except medium dense.
		7				
100		8				
		9	22"/24"	101.0		
		WOR	S25	104.0		Same, except very loose.
		WOR				
105		WOR				
		WOR	24"/24"	106.0		
		3	S26	109.0		Medium dense gray brown silty fine to medium SAND, trace clay, pockets of rock fragments, moist.
		5				
110		5				
		12	23"/24"	111.0		

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. **HA-123**

Depth (ft)	Casing Blows per ft	Sampler Blows per 6 in	Sample Number & Recovery	Sample Depth (ft)	Stratum Change (ft)	Visual Classification and Remarks
						ALLUVIUM
					114.0	
		100/.2	S27	114.0		Very dense sandy ROCK FRAGMENTS.
115			2"/3"	114.2		WEATHERED BEDROCK
						Began rock coring 114.0 ft.
						Bottom of Exploration at 116.0 ft.
120						
125						
130						
135						
140						
145						
150						

Form #3001

LABELLA ASSOCIATES, P.C. **3[illegible]TE STREET, ROCHESTER, NEW YORK** ENVIRONMENTAL ENGINEERING CONSULTANTS	**PROJECT** Port of Rochester 4650 Lake Avenue	**BORING # 28** SHEET 1 OF 1 **JOB # 99150** CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/22/00 END DATE 8/22/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE: BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel and sub-base				
1								dry	0 ppm	
						light brown medium/fine sand				
2								dry	0 ppm	
						dark brown sand/gravel/slag				
3						silver/black		moist	0 ppm	
						brick				
4						no recovery		moist		
						brick fragments/sand (dark brown)				
5						cinders		moist	0 ppm	
						light brown silty clay		moist	10 ppm	
7						slag		moist	0.5 ppm	
						light brown clay				
8								moist/saturated	0 ppm	
								saturated/moist	0 ppm	
9						gray/green clay				
						black cinders/slag		saturated/moist	0 ppm	
10						light brown/gray silt/fine sand		saturated/moist	0 ppm	
11						very compacted		saturated/moist	0 ppm	
12										
13						very compacted silt with some clay		saturated	0 ppm	
14						gray -> brown		saturated	0 ppm	
15								saturated	0 ppm	
16								saturated	0 ppm	

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: North end of parks building

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LBA

BORING #28

LABELLA ASSOCIATES, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 29/MW-5 SHEET 1 OF 1 JOB # 99150 CHKD. BY:tms

ACTOR: Marcor
LER: Jim
LABELLA REPRESENTATIVE: DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/22/00 END DATE 8/22/00

TYPE OF DRILL RIG: Geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE: BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE		PID	NOTES
						gravel sub-base			flush mount road box		
1						medium brown sand		dry	Bentonite seal 0'-1'	0 ppm	
2								dry/moist		0 ppm	
									quartz sand pack 1'-12'		
3						dark brown sand and gravel		dry		0 ppm	
									1" PVC well 2'-12'		
4								dry			
						dark brown sand/gravel					
5								dry		0 ppm	
						blue gray slag/brick					
										48 ppm	
						dark brown/black sand and cinders/gravel		dry			
7										0 ppm	
						light brown silt - compacted					
8								dry			
						light brown silt					
9								moist		0 ppm	
10								moist		0 ppm	
11										0 ppm	
								moist			
12											
13											
14											
15											
16											

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: near door of parks building
Mw at center of building approximately 40' East of maintenance shop

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA ASSOCIATES, P.C. 30[illegible] STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 30 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR	Marcor	BORING LOCATION	
DRILLER	Jim	GROUND SURFACE ELEVATION	DATUM
LABELLA REPRESENTATIVE	DEP/TMS	START DATE 8/23/00	END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
1						gravel		dry	0 ppm	
2						medium brown sand		dry	0 ppm	
3						slag/brick/fill/sand		dry	0 ppm	
4								dry		
5						medium brown sand - coal, iron ore chips, some conglomerate, shell fragments		dry	0 ppm	
						slag/brick layer of ash/slag		dry	0 ppm	
7						brown and black silt with fine sand, some slag waste and rock fragments		moist	0 ppm	
8								moist/saturated	0 ppm	
								saturated/moist	0 ppm	
9								saturated/moist	0 ppm	
10						brown firm silt with clay		saturated/moist	0 ppm	
11								saturated/moist	0 ppm	
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5' - start over approximately 3' west, also refusal, start over approximat 10' north, then 3' west of that
Sixth attempt approximately 45' east of park structure

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C. 3? ?TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester 4650 Lake Avenue	BORING # 31 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE		PID	NOTES
						gravel					
1						brown silt with fine-medium sand		dry		0 ppm	
						mixed with gravel/rock fragments					
2								dry		0 ppm	
3								dry/moist	no odor	17 ppm	
						gray/brown silt/fine sand					
4								dry/moist		3 ppm	
						brown medium sand					
5								moist		0 ppm	
						brown->red/rust fill - slag waste - iron					
						"filling"/stained silt		moist		0 ppm	
7						brown silt/fine sand with some clay		moist		0 ppm	
8								moist/saturated		0 ppm	
								saturated/moist		0 ppm	
9						brown silt/fine sand					
								saturated/moist		0 ppm	
10						brown silt/fine sand with some clay		saturated/moist		0 ppm	
11								saturated		0 ppm	
12											
13											
14											
15											
16											

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: downgradient (approx. 12') from AST's

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C.
30? ? STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Port of Rochester
4650 Lake Avenue

BORING # 32
SHEET 1 OF
JOB # 99150
CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						blacktop				
1						gravel sub-base		moist		
2						brown medium sand		moist	0 ppm	
3								moist	0 ppm	
4								moist		
5						gray silt/fine sand		saturated	0 ppm	
						mixed fill & slag, silt/sand wih brick frags		saturated	0 ppm	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: MW @ center of building approx. 40' east of maint. Shop
rejected 1st attempt at 6'

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C. ? TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 33 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						asphalt/gravel				
1								dry	0 ppm	
						coarse sand/gravel				
2								dry	0 ppm	
3						blue slag		dry/moist	0 ppm	
						medium gravel				
4								moist	0 ppm	
						slag (blue/gray)				
5						red gravel		moist	0 ppm	
						brown/black gravel				
								moist	0 ppm	
						brown silt				
7								moist	0 ppm	
						gray silt (some clay)				
8								moist/saturated	0 ppm	
								saturated/moist	0 ppm	
9						red gravel (shell chips)				
								saturated	0 ppm	
10						gray/brown silt				
						dark brown organic		saturated	0 ppm	
11										
						fine gray sand		saturated	0 ppm	
12										
13										
14										
15										
16										

LEGEND

S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: eastern most point between 2 warehouses

GENERAL NOTES:

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 34/MW-6 SHEET 1 OF 1 JOB # 99150 CHKD. BY:tms

C[illegible]RACTOR: Marcor
[illegible]LER: Jim
LABELLA REPRESENTATIVE: DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG: Geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
									flush mount road box	
1						gravel sub-base		dry	Bentonite seal 0.5'-2.5'	
						slag				
2								moist	33 ppm	
						medium-coarse sand			quartz sand pack 2.5'-5.5'	
3						some odor - gray stained		moist	67 ppm	
						gravel			1" PVC solid riser 0'-3.5'	
4								moist		
5						gravel		moist/saturated		
						red slag black/stained gravel			1" PVC Well 2000 ppm	
						gravel			screen 3.5'-5.5' (high)	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5.5'

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

LABELLA ASSOCIATES, P.C. TATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 35 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel				
1						brown sand (medium - coarse)			0 ppm	
2						gravel/sand			0 ppm	
3						gray silt			400 ppm (last 4" only)	
4						no recovery				
5						gravel/blue slag			100 ppm 140 ppm	
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND

S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5.5'

GENERAL NOTES:

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C.
30[illegible]E STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Port of Rochester
Between 2 Warehouses

BORING # 36
SHEET 1 OF 1
JOB # 99150
CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						gravel sub-base				
1								moist	0 ppm	
						coarse/medium brown sand				
2									0 ppm	
						rock fragments		moist		
3									0 ppm	
								moist		
4						no recovery				
5						brown gravel		saturated	0 ppm	
						black gravel			0 ppm	
								saturated		
7									0 ppm	
						coarse sand		saturated		
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: refusal at 5.5'

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C. 3[illegible]TE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Port of Rochester Between 2 Warehouses	BORING # 37 SHEET 1 OF 1 JOB # 99150 CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION DATUM
START DATE 8/23/00 END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW /6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						black top				
1						gravel		moist	0 ppm	
2						brown silt with rock fragments and blue slag			0 ppm	
								moist		
3									0 ppm	
								moist/saturated		
4						rust/red silt/sand				
5						red/brown fill, foundation waste, some slag mixed with sand		saturated	0 ppm	
									0 ppm	
								saturated		
7						brown silt/fine sand -firm			0 ppm	
								saturated		
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND

S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: x36
x38 x35 x37
x34 (mw) x33

GENERAL NOTES:

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

LABELLA ASSOCIATES, P.C.
30[illegible] E STREET, ROCHESTER, NEW YORK

ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Port of Rochester
Between 2 Warehouses

BORING # 38
SHEET 1 OF 1
JOB # 99150
CHKD. BY

CONTRACTOR Marcor
DRILLER Jim
LABELLA REPRESENTATIVE DEP/TMS

BORING LOCATION
GROUND SURFACE ELEVATION
DATUM
START DATE 8/23/00
END DATE 8/23/00

TYPE OF DRILL RIG geo-probe
AUGER SIZE AND TYPE
OVERBURDEN SAMPLING METHOD
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOW / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	SAMPLE DESCRIPTION	EQUIPMENT INSTALLATION LOG	MOISTURE	PID	NOTES
						black top				
1						sub-base		moist	0 ppm	
2						brown-black silt/medium sand with gravel; slag and rock frags			0 ppm	
								moist		
3									0 ppm	
								moist/saturated		
4										
5								saturated	0.3 ppm	
						blue slag fragments				
						rejected		saturated	0.5 ppm	
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										

LEGEND
S - SPLIT SPOON SOIL SAMPLE
U - UNDISTURBED SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:

GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-2
Job No.. 5505
Page: 1 OF 1
Report Date: 5/10/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.6
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/10/2005
Completed: 5/10/2005

Seasonal and climatic changes may alter observed water levels.

Depth	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information
0		2	1						TOPSOIL AND ORGANIC MATTER 0'6"
				3	7	4	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL
		11	12						FOUNDRY SAND AND SLAG
				11	6	23	2	2'0"-4'0"	FILL MATERIAL (SAME)
5		6	6						4'6"
				5	4	11	3	4'0"-6'0"	MEDIUM GREY GREEN MOIST TO WET CLAYEY
		3	3						SILT, TRACE VF SAND
				3	7	6	4	6'0"-8'0"	MEDIUM GREY GREEN MOIST TO WET 7'0"
		5	2						
10				4	4	6	5	8'0"-10'0"	LOOSE GREY SATURATED M-VF SAND, LITTLE
									M-F GRAVEL AND ORGANIC MATTER
									(MUDDED BORING FROM 10' TO TERMINATION)
15									
		4	4						
				5		9	6	15'0"-16'6"	LOOSE GREY SATURATED (MORE ORGANICS-
									WOOD)
20									18'0"
		3	3						
				3		6	7	20'0"-21'6"	MEDIUM DARK BROWN SATURATED ORGANIC SILT
									23'0"
25									
		2	4						
				5		9	8	25'0"-26'6"	MEDIUM GREEN BROWN SATURATED SILT, SOME
									M-F GRAVEL, LITTLE VF SAND, TRACE CLAY
									(AUGERS STIFFENED @ 27'6")
30									(VERY SLOW PENETRATION)
		56/6				56/6		30'0"-30'6"	NO RECOVERY
		50/2				50/2	9	33'6"-33'8"	VERY DENSE GREY BLACK ROCK FRAGMENTS
									AUGER REFUSAL @ 34'4"
35									BORING TERMINATED @ 34'4"

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-3
Job No.. 5505
Page: 1 OF 3
Report Date: 5/20/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/19/2005
Completed: 5/20/2005

Seasonal and climatic changes may alter observed water levels.

Depth	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information	
0		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 AND SLAG	
		7	8							
				15	16	23	2	2'0"-4'0"	FILL MATERIAL C/O SILT,SAND AND GRAVEL, TOPSOIL, SLAG AND FOUNDRY SAND	5'0"
5		7	10							
				8	7	18	3	4'0"-6'0"	STIFF GREY BROWN MOIST MOTTLED SILT, LITTLE CLAY	6'0"
		8	8							
				12	10	20	4	6'0"-8'0"	FIRM GREY SATURATED M-VF SAND, TRACE SILT	
10										
		3	5							
				8		13	5	10'0"-11'6"	FIRM GREY SATURATED (LITTLE M-F GRAVEL)	
15									(MUDDED BORING FROM 15' TO TERMINATION)	
		5	5							
				4		9	6	15'0"-16'6"	LOOSE GREY SATURATED	
20										
		4	4							
				4		8	7	20'0"-21'6"	LOOSE GREY SATURATED (MARL NOTED)	21'2"
									MEDIUM GREY SATURATED SILT, SOME VF SAND	23'0"
25										
		1	2							
				3		5	8	25'0"-26'6"	MEDIUM GREY SATURATED ORGANIC SILT	
30										
		2	1							
				2		3	9	30'0"-31'6"	SOFT GREY SATURATED	
35										

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-3
Job No.. 5505
Page: 2 OF 3
Report Date: 5/20/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/19/2005
Completed: 5/20/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	Sample		Soil and Rock Information
35		0"/6"	6"/12"	12"/18	18"/24"		No.	depth	
		W/R	W/H						
				2		2	10	35'0"-36'6"	SOFT GREY SATURATED (LESS ORGANICS)
40									
		W/H	2						
				2		4	11	40'0"-41'6"	SOFT GREY SATURATED (MORE ORGANICS)
45									
		W/H	W/H						
				W/H		W/H	12	45'0"-46'6"	VERY SOFT GREY SATURATED
50									
		W3/H	2						
				2		4	13	50'0"-51'6"	SOFT DARK GREY SATURATED (LESS ORGANICS MARL NOTED)
55									
		W/H	3						
				4		7	14	55'0"-56'6"	MEDIUM DARK GREY SATURATED
60									
		W/H	2						
				3		5	15	60'0"-61'6"	MEDIUM DARK GREY SATURATED
65									
		1	3						
				4		7	16	65'0"-66'6"	MEDIUM DARK GREY SATURATED
70									

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon ____ with ____ lb. wt ____ Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-3
Job No.. 5505
Page: 3 OF 3
Report Date: 5/20/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 253.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/19/2005
Completed: 5/20/2005

Seasonal and climatic changes may alter observed water levels.

Depth	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information
70		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
80		1	2						
				1		3	19	80'0"-81'6"	SOFT DARK GREY SATURATED
85									(AUGERED TO 100' REMAINED SOFT)
90									
95									
100									100'0"
									BORING TERMINATED @ 100'0"
105									

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-4
Job No.. 5505
Page: 1 OF 2
Report Date: 5/6/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 254.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/6/2005
Completed: 5/6/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	Sample		Soil and Rock Information
0		0"/6"	6"/12"	12"/18	18"/24"		No.	depth	
		7	7						TOPSOIL AND ORGANIC MATTER 0'5"
				7	7	14	1	0'0"-2'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL
		13	13						LITTLE ASPHALT AND SLAG
				10	9	23	2	2'0"-4'0"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL
5		7	7						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"
		15	10						
10				15	22	25	5	8'0"-10'0"	FILL MATERIAL C/O SATURATED SLAG
		21	12						
				21	18	33	6	10'0"-12'0"	FILL MATERIAL C/O SATURATED SLAG
		7	10						
				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						NODULES 15'8"
				5	5	10	9	16'0"-18'0"	MEDIUM BLACK MOIST PEAT LIKE MATERIAL
20									(MUDDED BORING FROM 18' TO TERMINATION)
		2	3						
				3	4	6	10	20'0"-22'0"	MEDIUM BLACK GREY WET TO SATURATED
								SHELBY	INTERBEDDED SILT AND PEAT LIKE MATERIAL
								TUBE	MEDIUM GREY SATURATED 24'0"
25		2	4						
				3	4	7	11	24'0"-26'0"	MEDIUM DARK GREY WET ORGANIC SILT, TRACE
									CLAY
									28'0"
30									
		2	2						
				2		4	12	30'0"-31'6"	MEDIUM GREY SATURATED SILT, LITTLE CLAY,
									TRACE VF SAND SEAMS (NO ORGANICS)
35									

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-4
Job No.. 5505
Page: 2 OF 2
Report Date: 5/6/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 254.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/6/2005
Completed: 5/6/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	Sample		Soil and Rock Information
35		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		7	8						35'6"
				9		17	13	35'0"-36'6"	FIRM RED WET SILT, SOME C-F GRAVEL,
									WEATHERED ROCK AND VF SAND
40									AUGER REFUSAL @ 39'2"
									BORING TERMINATED @ 39'2"
45									
50									
55									
60									
65									
70									

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-5
Job No.. 5505

Report Date: 5/11/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 252.1
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/11/2005
Completed: 5/11/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	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
				15	19	29	2	2'0"-4'0"	FILL MATERIAL (SAME) 3'0"
5		6	4						COMPACT BROWN MOIST M-VF SAND 3'6"
				4	4	8	3	4'0"-6'0"	LOOSE GREY SATURATED M-VF SAND, TRACE
		2	4						ORGANICS (WOOD)
				7	4	11	4	6'0"-8'0"	FIRM GREY SATURATED
		12	4						
10				18	29	22	5	8'0"-10'0"	FIRM GREY SATURATED (LITTLE C-F GRAVEL)
									12'0"
									(MUDDED BORING FROM 15' TO TERMINATION)
		2	7						
15				11		18	6	13'6"-15'0"	FIRM GREY SATURATED C-F SAND AND GRAVEL
									(LITTLE SILT LAYERED)
									17'0"
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 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-5
Job No.. 5505
Page: 2 OF 2
Report Date: 5/11/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: 252.1
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/11/2005
Completed: 5/11/2005

Seasonal and climatic changes may alter observed water levels.

Depth	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information
35		2	2						
				2		4	10	35'0"-36'6"	SOFT GREY WET (TRACE ORGANICS)
40		W/H	2						
				2		4	11	40'0"-41'6"	SOFT GREY WET TO SATURATED (TRACE ORGANICS)
45		1	1						
				1		2	12	45'0"-46'6"	VERY SOFT GREY SATURATED (TRACE MARL)
50		1	2						
				2		4	13	50'0"-51'6"	SOFT GREY WET (WOOD NOTED AND SLIGHTLY MORE CLAY)
55		3	3						
				5		8	14	55'0"-56'6"	MEDIUM GREY WET TO SATURATED (MORE ORGANICS-- TRACE WEATHERED SHALE) (VERY SLOW PENERATION FROM 58')
60		82/6				82/6	15	60'0"-60'6"	VERY DENSE RED WEATHERED SHALE 60'6"
									BORING TERMINATED @ 60'6"
65									
70									

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B05-7
Job No.. 5505
Page: 1 OF 1
Report Date: 5/10/2005

Project: PORT OF ROCHESTER
Client: LABELLA ASSOCIATES, PC
Elevation: ~~252~~. 272.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 5/9/2005
Completed: 5/9/2005

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	Sample		Soil and Rock Information
0		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		14	10						TOPSOIL AND ORGANIC MATTER 0'5"
				18	50/0	28	1	0'0"-1'6"	FILL MATERIAL C/O MOIST SILT,SAND AND GRAVEL
									AND CRUSHED STONE
		50/4				50/4	2	3'0"-3'4"	FILL MATERIAL CONCRETE 4'0"
5									
		14	13						
				15	18	28	3	5'0"-7'0"	COMPACT BROWN MOIST SILT AND VF SAND
		9	13						
10				14	14	27	4	8'0"-10'0"	COMPACT BROWN MOIST SILT, TRACE VF SAND
									12'0"
15									
		7	8						
				9		17	5	15'0"-16'6"	STIFF GREY MOIST SILT, LITTLE CLAY 16'6"
20									BORING TERMINATED @ 16'6"
									NOTE: ADDITIONAL 1'6" DRILLED AT THIS
									LOCATION-- HEAVY FILLS MOVED BORING 3'
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 30" Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

LABELLA
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 4

Photographs of Slag Fill

Typical view of slag fill at the Port of Rochester.

LABELLA

LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Appendix 5

Example of Material Tracking Spreadsheet

PORT OF ROCHESTER ENVIRONMENTAL MANAGEMENT PLAN
WASTE STREAM TRACKING FORM

	DATE	TRUCKING COMPANY	TRUCK I.D.	TRUCK LISCENSE PLATE NO.	MANIFEST NO.	TYPE OF WASTE STREAM	WASTE DISPOSAL LOCATION	TIME TRUCK OFF-SITE	LANDFILL TICKET NO.
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

SHEET ____ OF ____

LABELLA
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

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

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization 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

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

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

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
Proposed Date(s) of Field Activities:	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

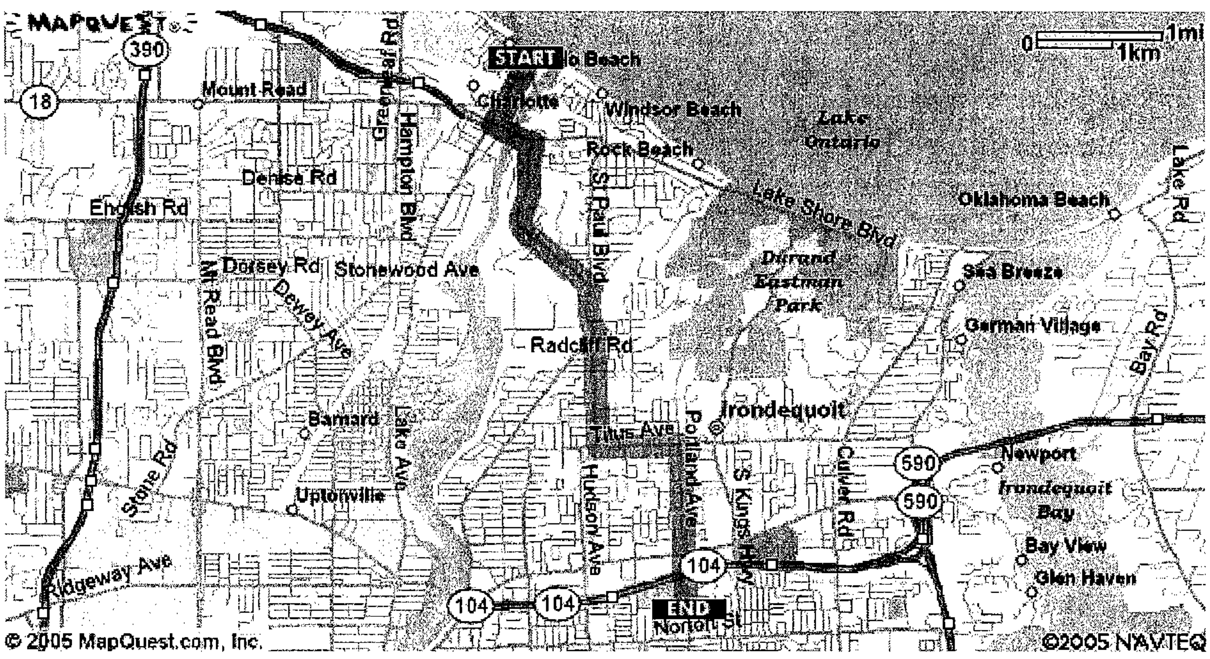
EMERGENCY CONTACTS

	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.

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).

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 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 Associates, P.C.
300 State Street
Rochester, New York 14614

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

Page

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.

Real time particulate monitoring will be performed utilizing aerosol monitors capable of measuring particulate concentrations of Particulate Matter 10 µm in size (PM_{10}) 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 µg/m^3, 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 µg/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, continuous 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.