LABELLA Associates, P.C.

Engineering
Architecture
Environmental

Data Summary Package
Port Marina Predevelopment Site Conditions
Gap Investigation

Location:

Proposed Marina
Port of Rochester
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. 209447

September 2009

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Introduction

LaBella Associates, P.C. ("LaBella") was retained by the City of Rochester to conduct a Predevelopment Site Conditions Gap Investigation (PSCGI) at the Port of Rochester in the City of Rochester, Monroe County, New York (see Figure 1) hereinafter referred to as the "Site". LaBella provided professional environmental consulting services in regard to assisting the City of Rochester (City) Department of Environmental Services, Division of Environmental Quality (DEQ) and the Passero Associates, Abonmarch and the Edgewater Group (the Design Team) with the design and implementation of this PSCGI, including petitioning the New York State Department of Environmental Conservation (NYSDEC) for approval of a site-specific Beneficial Use Determination (BUD) for the reuse of the slag excavated as part of the marina construction project.

Currently the City of Rochester owns property within the Port of Rochester, which includes the area targeted for marina development. In addition, Monroe County owns the property targeted for Phase II Development. The City of Rochester secured an Access Agreement with Monroe County for the portion of the work conducted on Monroe County property.

Site History

In the mid to late 1800's, a steel mill (Charlotte Iron Works) was constructed west 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 most of the Site. The steel mill operations were terminated in the mid 1920's, and the buildings were subsequently demolished.

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.

Data Review

To identify data gaps associated with the Site, LaBella reviewed the following documents:

- *Geotechnical Site Characterization, Port of Rochester Harbor Improvement and Harbor Ferry Terminal, Rochester, New York, Haley & Aldrich, Inc., September 2000.*
- *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.*
- *Memorandum, Vortex Excavation – Port of Rochester Parking Lot Improvements, LaBella Associates, P.C., January 15, 2003.*
- *Port of Rochester Environmental Management Plan, LaBella Associates, P.C., July 2005.*
- *Remedial Investigation Report, LaBella Associates, P.C., March 2007.*

- *Geothermal Test Bores and Formation Thermal Conductivity Report, Stantec Consulting Services, Inc., December 4, 2007.*
- *Port of Rochester Environmental Management Plan, LaBella Associates, P.C., July 2005.*
- *Predevelopment Subsurface Conditions Analysis Investigation Report, LaBella Associates, P.C., March, 2009.*

Scope of Work

The primary focus of the PSCGI was to define localized and site-wide environmental issues at the proposed marina site including the horizontal and vertical distribution of the slag layers or other regulated solid waste known to be present at the Site, evaluate potential issues associated with redevelopment of the subject site, and collect site-specific geotechnical data for use by the Design Team. Generally the completion of this phase of the PSCGI included the following;

- Based on previous subsurface work completed at the Port of Rochester it is assumed that regulated solid wastes (i.e., cinders, coals, slag, etc.) would be encountered. As such, the distribution of these fill areas across the proposed marina footprint has been generally defined.
- The City of Rochester DEQ provided the "Proposed Marina Option 7 Data Gap (Round #1) Test Boring Location Map". This document identified "data gaps" within the proposed marina footprint. This mapping was utilized to develop the preliminary scope of work for the Investigation Phase of the project.
- This PSCGI was intended to characterize the subsurface of the Site through a comprehensive and systematic subsurface investigation strategy which proposed investigation points generally advanced on a 100'x100' grid. Additional borings were advanced to the top of rock at strategic locations around the perimeter of the proposed marina.
- Based on the preliminary design of the proposed marina, most of the soil borings were terminated at a depth of 225-feet above mean sea level, using North American Vertical Datum 88 (NAVD 88). This elevation corresponds to a depth of approximately 5-feet below the basin of the proposed marina. The penetration depth of each individual boring location (excluding top of rock borings) ranged in depth from approximately 28 to 37-feet below the ground surface. As such, the method of investigation utilized was rotary drill rig advanced soil borings.
- To supplement the utility design associated with the new River Street alignment, five (5) additional borings were advanced at locations selected by City Engineering. Based on the anticipated invert depth of the proposed sewer main at 25-feet below the existing ground surface, each of these supplemental borings were terminated at a depth of 30-feet below the existing ground surface.
- For the purposes of this PSCGI, the Site was sub-divided into two (2) parcels based on current ownership. The City of Rochester property at the Site is referred to as the "Phase I" parcel. The Monroe County property at the Site is referred to as the "Phase II" parcel. This division of the Site is reflected in the following sampling methodology described in the next section.

The attached Table 1 presents a detailed summary of the thirty-four (34) soil borings completed at the Site.

Summary of Activities

LaBella's PSCGI field activities were conducted from June 22, 2009 through July 14, 2009. To investigate the data gaps identified in the assessment of available data, the PSCGI fieldwork included the advancement of thirty-four (34) soil borings and the installation of three, 2-inch inside diameter groundwater monitoring wells. To further evaluate subsurface conditions at the Site, composite samples were collected in the field from the thirty-four (34) soil borings. Three (3) sample types were collected and submitted for laboratory analysis. These sample types consisted of native soil, regulated fill materials, and slag materials. The following composite samples were collected from the Phase I and Phase II parcels at the Site and submitted for laboratory analysis:

Sample Identification	Matrix Type	Location at Site	TCL & STARS VOCs	STARS SVOCs	Base Neutral SVOCs	TAL Metals	Pesticides	TCLP 8 RCRA Metals	8 RCRA Metals	pH (Corrosivity)
Phase I Fill	Regulated Fill	Phase I	X	X		X	X	X		
Phase II Fill (A)	Regulated Fill	Phase II	X	X		X	X	X		
Phase II Fill (B)	Regulated Fill	Phase II	X	X		X	X	X		
Phase I Slag (A)	Slag	Phase I			X	X				
Phase I Slag (B)	Slag	Phase I			X	X				
Phase II Slag	Slag	Phase II			X	X				
Phase I Native	Soil	Phase I	X	X		X		X		
Phase II Native	Soil	Phase II	X	X		X		X		
MW09-1	Groundwater	Phase II	X	X			X		X	X
MW09-2	Groundwater	Phase II	X	X			X		X	X
MW09-3	Groundwater	Phase I	X	X			X		X	X

Notes:

TCL & STARS VOCs analysis by USEPA Method 8260B;
STARS SVOCs analysis by USEPA Method 8270C;
Base Neutral SVOCs analysis by USEPA Method 8270C;
TAL Metals analysis by USEPA Methods 6010 and 7000;
Pesticides analysis by USEPA Method 8081;
8 RCRA Metals analysis by USEPA Method 6010 and 7000; and,
pH (corrosivity) analysis by USEPA Method 9045.

Investigative points were located by licensed surveyors at predetermined locations. Some investigative points were relocated in the field due to obstructions such as utilities, roads, fences, etc. that prohibited access to a proposed investigative location. The relocated investigative points were recorded by licensed surveyors to incorporate in site specific GIS base mapping.

LaBella retained Nothnagle Drilling to complete the rotary advanced soil borings. At the ground surface, each soil boring was started by using continuous geotechnical soil sampling at a rate of two (2)-feet per split spoon. The split spoons were advanced with a 140 pound hammer into the overburden soil until "native soils" were encountered. Five (5)-foot long by 5¼-inch wide hollow stem augers followed the split spoons. Once native soil was encountered, the split spoons were advanced another five (5) into the native soil. Then, standard geotechnical soil sampling was completed at a rate of one (1) split spoon for every five (5)-feet of hollow stem augering completed. All borings were completed in accordance with the predetermined depths, or to the top of bedrock, where applicable. The complete set of soil boring logs is included as Appendix 1.

Each sample collected by LaBella from the borings was collected with nitrile coated plastic gloves. New gloves were donned between samples. LaBella recorded soil type, photo-ionization detector (PID) readings, sample depth, evidence of impairment and captured a photograph at each investigative point. A photo log is included in Appendix 2. Samples from the borings were placed in sealed plastic bags for headspace screening with a PID. Samples chosen for laboratory analysis were placed in laboratory supplied sample jars and placed in coolers containing ice.

Drill cuttings were placed back into their original soil boring annulus following completion of each soil boring.

Three (3) groundwater monitoring wells were installed as part of the PSCGI. The wells were constructed of 2 in. inside diameter PVC screen and riser. Each well was finished with a flush-mount curb-box completed with a concrete pad. A sand pack was placed around and up to two (2) ft above the well screen and the remaining annulus was filled with bentonite to the ground surface. Completed groundwater monitoring well construction logs are included in Appendix 3.

The monitoring wells were developed by utilizing a bailer to remove at least five (5) well volumes of groundwater. 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. Following well development, low flow purging of the monitoring wells was completed which included collection of water quality indicator parameters such as pH, temperature, turbidity, E_h, conductivity, and dissolved oxygen. Water quality indicator parameters were recorded at five (5)-minute intervals during the purging of each well.

Once the groundwater quality indicator parameters stabilized for at least three (3) consecutive readings, groundwater sampling was completed. The groundwater samples were collected on July 27, 2009. Completed low flow groundwater sampling logs are included in Appendix 4.

Native Soil, Regulated Fill, Slag, and Groundwater Sampling:

LaBella collected composite samples of native soil, regulated fill, slag, and groundwater samples from the soil borings and/or monitoring wells completed at the Site. Samples chosen for laboratory analysis were based on evidence of impairment (e.g. odors, staining, etc.), or based on the presence of slag or regulated fill materials (e.g., foundry slag, cinders, coals, etc.). A summary of the completed soil borings are provided as Table 1. Samples were placed in laboratory supplied sample jars and in coolers with ice and submitted under chain of custody procedures to Mitkem Laboratories, a division of Spectrum Analytical, Inc., a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program certified analytical laboratory. A total of two (2) soil, three (3) fill, and three (3) slag samples were

collected. Each of these samples were composited in the field. Additionally, three (3) groundwater, and two (2) trip blanks were submitted for analysis.

Native Soil, Regulated Fill, and Slag Analytical Results Summary Tables:

Sample results are summarized in Tables 2 to 4. The soil sample analytical results were compared to the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 Recommended Soil Cleanup Objectives (RSCOs) dated January 24, 1994 and amended August 22, 2001. The metals results were also compared to the USEPA Eastern USA Background Levels. Additionally, the soil samples were compared to the 6 NYCRR Part 375-6 Restricted Use Soil Cleanup Objectives Protection of Public Health – Commercial Use effective December 14, 2006 (Part 375 Restricted Use SCOs).

VOCs

As indicated in Table 2, naphthalene and methylene chloride were detected above their reported laboratory method detection limits (MDLs) in fill from samples "Phase I Fill", "Phase II Fill (a)", and "Phase II Fill (b). Methylene chloride was also detected above the reported laboratory MDL in the trip blank. It should be noted that for each detection, the value was obtained from an instrument reading thtat was less than the sample quantification limit. Therefore, the reported result is an estimated value that is less than the Contract Required Quantitation Limit (CRQL), but greater than zero. However, each of these detected VOCs were found to be well below their associated NYSDEC TAGM 4046 RSCOs and Part 375 Restricted Use SCOs.

SVOCs

According to the laboratory analytical report, no SVOCs were detected above the reported laboratory MDLs in the samples submitted for laboratory analysis.

Metals

A summary of the metals detected above their reported laboratory MDLs as described in Table 3.

As shown in Table 3, metals were detected above the reported laboratory MDLs in each of the eight (8) soil samples submitted for laboratory analysis. The detected metals included arsenic, barium, beryllium, cadmium, calcium, copper, magnesium, manganese, and zinc.

The detected concentrations of arsenic in the samples collected from fill sample "Phase II Fill (a)" and "Phase II Fill (b)" were 12.4 and 29.4 mg/Kg, respectively. These concentrations slightly exceed the NYSDEC RSCO of 7.5 mg/Kg and the USEPA Eastern USA Background Level of 12 mg/Kg. Additionally, the concentration of arsenic in sample "Phase II Fill (b)" was found to exceed the Part 375 SCO for the Protection of Human Health – Commercial Use of 16 mg/Kg. Samples "Phase I slag (b)" and "Phase II Slag" reported concentrations of arsenic at 7.8 and 8.3 mg/Kg, respectively. These concentrations were found to exceed their associated NYSDEC RSCO of 7.5 mg/Kg.

The detected concentration of barium in the sample collected from "Phase II Fill (b)" was found to be 312 mg/Kg which was found to exceed its associated NYSDEC RSCO of 300 mg/Kg.

The detected concentrations of beryllium in the samples collected from "Phase I Fill", "Phase II Fill (a)", "Phase II Fill (b)", "Phase I Slag (a)", "Phase I Slag (b)", "Phase II Slag", "Phase I Native", and "Phase II Native" were each found to exceed the established NYSDEC RSCO for beryllium of 0.16 mg/Kg. Additionally, samples "Phase II Fill (a)", "Phase II Fill (b)", "Phase I Slag (a)", "Phase I Slag (b)", and "Phase II Slag" were found to exceed the established USEPA Eastern USA Background Level of 1.75 mg/Kg.

The detected concentrations of cadmium in the samples collected from "Phase I Fill", "Phase II Fill (a)" and "Phase II Fill (b)" were 3.7, 5.4, and 3.4 mg/Kg, respectively. These concentrations slightly exceed the NYSDEC RSCO of 1 mg/Kg and the USEPA Eastern USA Background Level of 1 mg/Kg.

The detected concentrations of calcium in the samples collected from "Phase II Fill (b)", "Phase I Slag (a)", "Phase I Slag (b)", "Phase II Slag", and "Phase II Native" were found to be 37,300, 251,000, 243,000, 166,000, and 35,200 mg/Kg, respectively. Each of these detections were found to exceed the established USEPA Eastern USA Background Level of 35,000 mg/Kg.

The detected concentrations of chromium in the samples collected from "Phase I Fill", "Phase II Fill (a)", "Phase II Fill (b)", "Phase II Slag", and "Phase I Native" were 11.1, 18.4, 32.8, 12.1, and 13.0 mg/Kg, respectively. Each of these concentrations were found to exceed their associated NYSDEC RSCO of 10 mg/Kg.

The detected concentrations of copper in the sample collected from "Phase I Fill" was found to be 108 mg/Kg which was found to exceed its associated NYSDEC RSCO and its associated USEPA Background Level of 25 and 50 mg/Kg, respectively.

The detected concentrations of iron in the samples collected from each of the eight (8) soil samples were found to exceed their associated NYSDEC RSCO of 2,000 mg/Kg.

The detected concentrations of magnesium in the samples collected from "Phase II Fill (b)", "Phase I Slag (a)", "Phase I Slag (b)", "Phase II Slag", and "Phase II Native" were 8,390, 26,100, 39,800, 18,200, and 5,710 mg/Kg, respectively. Each of these concentrations were found to exceed their associated USEPA Eastern USA Background Level of 5,000 mg/Kg.

The detected concentrations of manganese in the samples collected from "Phase II Fill (a)" and "Phase II Fill (b)" were 3,740 and 4,070. These concentrations were found to exceed their associated USEPA Eastern USA Background Level of 1,000 mg/Kg.

The detected concentration of mercury in the sample collected from "Phase II Fill (b)" was 0.10 mg/Kg which was found to exceed its associated NYSDEC RSCO of 0.10 mg/Kg.

The detected concentration of nickel in the sample collected from "Phase I Native" was 15.9 mg/Kg which was found to exceed its associated NYSDEC RSCO of 13 mg/Kg.

The detected concentrations of zinc in the samples collected from "Phase II Fill (a)", "Phase II Fill (b)", "Phase II Slag", and "Phase I Native" were 369, 2,500, 47.7, and 33.3, respectively. Each of these concentrations were found to exceed their associated NYSDEC RSCO of 20 mg/Kg. Additionally, the concentrations of zinc in samples "Phase II Fill (a)" and "Phase II Fill (b)" were found to exceed their associated USEPA Eastern USA Background Level of 50 mg/Kg.

TCLP

The eight (8) RCRA metals were included in the TCLPs performed on the three (3) fill samples ("Phase I Fill", "Phase II Fill (a)", and "Phase II Fill (b)") and the two (2) soil samples ("Phase I Native" and "Phase II Native"). Although various metals were detected above the reported laboratory MDLs in each of these samples, none of these detections were found to exceed the established USEPA TCLP Regulatory Limits as referenced in Table 4.

Pesticides

According to the laboratory analytical report, no pesticides were detected above the reported laboratory MDLs in the three (3) fill samples ("Phase I Fill", "Phase II Fill (a)", and "Phase II Fill (b)") submitted for laboratory analysis.

Groundwater Analytical Results Summary Tables:

The monitoring wells were developed by utilizing a bailer to remove at least five (5) well volumes of groundwater. 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. Following well development, low flow purging of the monitoring wells was completed which included collection of water quality indicator parameters such as pH, temperature, turbidity, E_h, conductivity, and dissolved oxygen. Water quality indicator parameters were recorded at five (5)-minute intervals during the purging of each well.

Once the groundwater quality indicator parameters stabilized for at least three (3) consecutive readings, groundwater sampling was completed. The groundwater samples were collected on July 27, 2009. Completed low flow groundwater sampling logs are included in Appendix 4.

Groundwater sample results are summarized in Tables 5 and 6. The groundwater samples were compared to the NYSDEC Division of Water Technical and Operational Guidance Series 1.1.1 (TOGS 1.1.1) document titled Ambient Water Quality Standard and Guidance Values and Groundwater Effluent Limitations (Groundwater Standards) dated June 1998 and amended April 2000.

VOCs

As indicated in Table 5, toluene and 4-isopropyltoluene were reported at concentrations found to exceed their respective NYSDEC TOGS 1.1.1 Groundwater Standards. However, no other VOCs were detected at concentrations found to exceed the reported laboratory MDLs in this sample or in samples collected from MW09-1 and MW09-3.

SVOCs

According to the laboratory analytical report, no SVOCs were detected above the reported laboratory MDLs in the three (3) groundwater samples collected from the three (3) monitoring wells.

Metals

As described in Table 6, six (6) metals were detected above the reported laboratory MDLs in each of the three (3) groundwater samples submitted for laboratory analysis. Arsenic was found to exceed the NYSDEC TOGS 1.1.1 Groundwater Standard in samples from MW09-1 and MW09-3. Barium was

found to exceed the NYSDEC TOGS 1.1.1 Groundwater Standard in sample MW09-2 only. Additionally, chromium and lead were found to exceed their respective NYSDEC TOGS 1.1.1 Groundwater Standards in samples collected from MW09-1 and MW09-3.

Pesticides

According to the laboratory analytical report, no pesticides were detected above the reported laboratory MDLs in groundwater samples collected from the three (3) monitoring wells.

pH

Each of the three (3) groundwater samples was analyzed for pH. The results of this laboratory analysis are presented below:

- MW09-1 = 6.6
- MW09-2 = 7.6
- MW09-3 = 6.1

Geology

The soil borings completed at the Site were advanced to depths ranging from 28.00 to 111.00-feet below the ground surface with all borings terminated in native soil deposits or to top of bedrock. 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.

Topsoil deposits were encountered at the ground surface in soil borings B09-7, B09-9, B09-10, E09-1, and E09-2. These Topsoil deposits generally consisted of dark brown fine-grained SAND with trace to little Silt and trace to little medium to fine-grained Gravel and containing organic matter including roots, root traces and humus. The Topsoil deposits were found to range from 0.3 to 2.0-feet in thickness. At the locations of the remaining soil borings, asphalt pavement, generally 0.7 to 1.0-feet thick was encountered.

Immediately beneath the asphalt and/or topsoil, a layer of re-worked native soils was encountered in soil borings B09-1, B09-4, B09-5, B09-6, B09-7, B09-8, B09-14, B09-17, B09-18, B09-21, B09-22, B09-23, B09-25, B09-27, B09-29, and E09-1. The texture of the re-worked native soils ranged from a coarse to medium-grained SAND with some coarse to a fine-grained Gravel to coarse to SILT with some medium to fine-grained Sand.

A layer of regulated fill materials was observed to underlay the re-worked native soils in soil borings B09-1, B09-4, B09-5, B09-6, B09-7, B09-8, B09-14, B09-17, B09-18, B09-21, B09-22, B09-23, B09-25, B09-27, B09-29, and E09-1. Regulated fill material deposits were identifiable by the presence of man-made materials including cinders, foundry sand, ash, coal dust and fragments, and brick fragments.

In soil borings B09-2, B09-3, B09-9, B09-10, B09-11, B09-15, B09-16a, B09-19, B09-20, B09-24, B09-26, B09-27, and E09-2 through E09-5, a layer of regulated fill materials was encountered directly below the asphalt and/or topsoil.

Regulated fill material deposits at the Site were observed to range from 1.0 to approximately 13.2-feet in total thickness with the thicker regulated fill material deposits (greater than approximately five-feet in total thickness) generally located in the southern and eastern portions of the proposed marina footprint in the vicinity of soil borings B09-15, B09-15, and B09-24 through B09-28.

Another type of regulated fill in the form of blue slag was encountered below the regulated fill materials described above. The blue slag was encountered below the regulated fill materials in each soil boring advanced at the Site with the exception of soil borings B09-10, B09-12, E09-1, and E09-5. The deposit of blue slag was observed to consist mainly of large blue slag chunks of up to approximately 2-inches in diameter. Very little coarse to medium-grained SAND was found to be intermixed with the blue slag. Although the distribution of the volume of blue slag seemed to be somewhat variable across the proposed marina footprint, the western and southwestern portion of the marina footprint appeared to contain the largest volumes of blue slag. In this area, the thickness of the blue slag layer was observed to be approximately 10.0 to 16.3-feet in total thickness. However, the average slag thickness for each of the thirty-four soil borings completed during the project was only approximately 5.97-feet in total thickness.

The regulated fill materials including blue slag within the soil borings completed at the Site were underlain by native soil deposits consisting of Lacustrine (beach) deposits mixed with 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.

The first occurrence of the native Lacustrine and Alluvial deposits at the Site was observed to consist of a peat layer that was encountered immediately below the deposit of blue slag at the Site. This peat layer was encountered in each soil boring completed at the Site, with the exception of borings B09-7, B09-10, B09-29, and E09-1 through E09-5. This layer consisting predominately organic materials was found to range in thickness from approximately 0.6 to 4.0 feet BGS and was observed to occur in depth from approximately 11.8 to 25.0-BGS.

The peat layer was observed to be underlain by a highly saturated Lacustrine deposit that generally consisted of grayish to brown SILT with little medium to fine-grained Sand and Clay. This Lacustrine deposit was also observed to be saturated and very loose in structure. The Lacustrine deposit generally increased in thickness from west to east and from south to north across the Site. Specifically, the south western edge of the proposed marina footprint was found to contain a Lacustrine deposit ranging in thickness from approximately 5.0 to 12.0-feet in total thickness. However, the northeastern edge of the proposed marina footprint was found to contain a Lacustrine deposit ranging in thickness from approximately 75.0 to 91.5-feet in total thickness.

The Lacustrine deposit was found to be underlain by a Glacial Till deposit within soil borings B09-1, B09-2, B09-3, B09-5, B09-10, B09-11, B09-12, B09-19, B09-25, and E09-2 and was found to occur from approximately 18.0 to 40.0-feet BGS. The Glacial Till deposit was observed to increase rapidly in depth toward the eastern edge of the proposed marina footprint and completely disappear in soil borings B09-26 through B09-29 advanced along the eastern edge of the proposed marina footprint. In this area, the Lacustrine deposit was observed to extend to the top of bedrock.

Ten (10) of the thirty-four soil borings completed during this PSCGI were terminated at the top of bedrock. Soil borings B09-01, B09-05, B09-09, B09-10, B09-19, B09-25, B09-26, B09-27, B09-28, and

B09-29 were all terminated at the top of bedrock which was observed to range in depth from 37.00 to 111.0-feet BGS.

Groundwater contours were derived from water level elevations collected on July 27, 2009 from the three monitoring wells installed within the proposed marina footprint. The depth to water on July 27, 2009 ranged from approximately 3.62 to 7.13-feet bgs.

The approximate locations of the soil borings and monitoring wells completed at the Site are presented on Figure 2. A contour map of the thicknesses of the regulated fill materials and the slag encountered is presented as Figures 7 and 8.

Hydraulic Conductivity Testing Procedures

Single-well, rising head tests were performed on each of the three (3) newly-installed groundwater monitoring wells and one previously-installed well to determine the in-place hydraulic conductivity of the unconsolidated geologic materials which occur in the monitoring intervals. These tests involved lowering the water level in the well by removing one bailer of water and measuring the change in hydraulic head with respect to time by means of a pressure transducer system as the water level recovers . The primary goal in the rising head test was to "instantaneously" remove a volume of water that resulted in a measurable head decline, the recovery of which (to static conditions) could be monitored over time. Such an instantaneous withdrawal results in recovery due to contributions of flow from the surrounding formation. This flow was controlled by its hydraulic conductivity and not by other factors such as storage effects.

The rising head tests were conducted as follows:

- The static water level in the well was measured and recorded.
- The pressure transducer was placed in the well to a minimum depth of three feet below the static water level.
- Readings were made using the data logger until three consecutive readings are the same (equilibrium conditions).
- The data logger was then calibrated to read 0.00 feet at static conditions. A pre-cleaned bailer was then lowered into the well and placed just below the water surface.
- Water level measurements were made until the water level returned to static conditions following introduction of the bailer.
- Once static conditions were reestablished, the bailer was rapidly removed from the water column thereby creating an instantaneous decline of the water level in the well. Coincident with the withdrawal of the bailer, automatic logging of the water levels was initiated using the data logger.
- The water level measurements were recorded until the water levels recover to within a minimum of ten percent of the original static water level (90 percent recovery).
- The data from the rising head tests were reduced and evaluated through the utilization of slug test worksheets developed by the United States Geological Survey (USGS) which can be found at the following website:
  http://pubs.usgs.gov/of/2002/ofr02197/spreadsheets/Slug_Bouwer-Rice.xls
- The worksheets were developed based the work completed within the following scientific

document:

Bouwer, H. and R.C. Rice, 1976. A slug test method for determining hydraulic conductivity of unconfined aquifers with completely or partially penetrating wells, Water Resources Research, vol. 12, no. 3, pp. 423-428.

The tests were performed on July 21, 2009 on each of the three (3) newly-installed monitoring wells. Additionally, a test was performed on a previously-installed monitoring well, B08-9/MW-1, which is located to the northwest of the proposed marina footprint. The table below presents the results of the hydraulic conductivity testing performed at the Site:

Hydraulic Conductivity Results
Port Marina Predevelopment Site Conditions Gap Investigation Report
July 2009

Monitoring Well Identification	Date Test Performed	Time Started	Time Stopped	Elapsed Time (sec.)	Static Water Level (ft.)	Final Water Level (ft.)	Hydraulic Conductivity (ft./sec)	Hydraulic Conductivity (cm./sec)
MW09-1	7/21/2009	10:27	10:36	594	0	-0.44	6.2×10^{-6}	1.9×10^{-4}
MW09-2	7/21/2009	9:27	9:36	586	0	-0.01	1.0×10^{-5}	3.1×10^{-4}
MW09-3	7/21/2009	9:51	9:59	526	0	-0.5	1.0×10^{-5}	3.1×10^{-4}
B08-2/MW-1	7/21/2009	0:00	4:54	294	0	-1.33	1.5×10^{-5}	4.6×10^{-4}
MW-BS39	11/27/2006	11:52	NA	NA	8.25	NA	4.82×10^{-3}	1.47×10^{-1}

See Appendix 5 for details on the hydraulic conductivity worksheets.

The calculated geometric mean hydraulic conductivity of the five slug tests conducted at the Site is 2.97×10^{-2} cm/sec (9.72×10^{-4} ft/sec). According to the USGS slug test work sheets, these hydraulic conductivity values are roughly equivalent to the mid-range of a fine to a coarse-grained gravel deposit or the upper ranges of a fine-to coarse-grained sand deposit, a vesicular basalt and/or a karst limestone.

It was observed that portions of the completed monitoring wells were completed within areas containing slag. Significant quantities of slag could affect the observed hydraulic conductivities at these well locations.

Historical Data

Tables 7 through 10 present historical data gathered during previous phases of environmental work completed at the Site, or in the immediate vicinity of the Site. As such, this data is still considered relevant to this PSCGI and has been included for informational purposes.

VOCs

As indicated in Table 7, m,p-xylene was detected above its reported laboratory MDL in soil from sample TP-7 (1.0') reported in the March 2009 Predevelopment Subsurface Conditions Analysis Investigation Report. However, the concentration of m,p-xylene was found to be well below its associated NYSDEC TAGM 4046 RSCOs and Part 375 Restricted Use SCOs.

SVOCs

As indicated in Table 8, two (2) soil samples were submitted for laboratory analysis of SVOCs. Soil sample TP-1 (0'-2') was collected on February 28, 2000 as part of the LaBella Phase II Environmental Site Assessment (ESA). This soil sample detected multiple SVOCs above their reported laboratory MDLs. Additionally, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, amd chrysene were found to exceed their associated NYSDEC TAGM 4046 RSCOs to Protect Groundwater Quality and their associated NYSDEC TAGM 4046 RSCOs. Benzo(b)fluoranthene was found to only exceed its associated NYSDEC TAGM 4046 RSCO to Protect Groundwater Quality.

Metals

A summary of the metals detected above their reported laboratory MDLs as described in Table 9.

As shown in Table 9, metals were detected above the reported laboratory MDLs in soil samples submitted for laboratory analysis. The detected metals included all of the TAL metals with the exception of antimony and thallium.

The detected concentrations of aluminum in the samples collected from BS-37 (6.0'-7.1') and BS-39 (6.0'-6.7') were 54,700 and 44,400 mg/Kg, respectively. These concentrations were found to exceed their associated USEPA Eastern USA Background Level of 33,000 mg/Kg.

The detected concentrations of arsenic in the samples collected from TP-8 (2'-3'), TP-10 (3'), and BS-37 (6.0'-7.7') were 52, 51.1, and 36.3 mg/Kg, respectively. These concentrations were found to exceed the Part 375 SCO for the Protection of Human Health – Commercial Use of 16 mg/Kg. Additionally, the samples collected from TP-8 (2'-3') and TP-10 (3') were found to exceed their associated USEPA Eastern USA Background Level of 12 mg/Kg.

The detected concentration of barium in the samples collected from TP-1 (Slag Waste), TP-1 (0'-2'), and TP-15 (6'-8') were 511, 909, and 657 mg/Kg, respectively. These concentrations were found to exceed the Part 375 SCO for the Protection of Human Health – Commercial Use of 400 mg/Kg and their associated NYSDEC RSCO of 300 mg/Kg. Additionally, the samples collected from TP-1 (0'-2') and TP-15 (6'-8') were found to exceed their associated USEPA Eastern USA Background Level of 600 mg/Kg.

The detected concentrations of cadmium in the samples collected from TP-1 (Slag Waste), BS-37 (6.0'-7.7'), and TP-7 (1.0') were 2.84, 32.0, and 1.83 mg/Kg, respectively. These concentrations slightly exceed the NYSDEC RSCO of 1 mg/Kg and the USEPA Eastern USA Background Level of 1 mg/Kg. Additionally, the soil collected from sample BS-37 (6.0'-7.7') was found to exceed the Part 375 SCO for the Protection of Human Health – Commercial Use of 9.3 mg/Kg.

The detected concentrations of calcium in the samples collected from BS-37 (6.0'-7.7'), BS-38 (6.0'-7.1'), BS-39 (6.0'-6.7') and TP-7 (1.0') were 251,000, 342,000, 202,000, and 54,300 mg/Kg, respectively. These concentrations were found to exceed the established USEPA Eastern USA Background Level of 35,000 mg/Kg.

The detected concentrations of chromium in the samples collected from TP-8 (2'-3'), TP-15 (6'-8'), BS-37 (6.0'-7.7'), and TP-7 (1.0') were 15.4, 17.8, 37.8, and 14.4 mg/Kg, respectively. Each of these concentrations was found to exceed their associated NYSDEC RSCO of 10 mg/Kg.

The detected concentration of cobalt in the sample collected from BS-37 (6.0'-7.7') was 31.8 mg/Kg. This concentration was found to exceed its associated NYSDEC RSCO of 30 mg/Kg.

The detected concentration of copper in the sample collected from BS-37 (6.0'-7.7') was 33.6 mg/Kg. This concentration was found to exceed its associated NYSDEC RSCO of 25 mg/Kg.

The detected concentration of cyanide in the sample collected from TP-7 (1.0') was 11,000 mg/Kg. This concentration was found to exceed its associated Part 375 SCO for the Protection of Human Health – Commercial Use of 27 mg/Kg.

The detected concentrations of iron in the samples collected from BS-37 (6.0'-7.7'), BS-38 (6.0'-7.1'), BS-39 (6.0'-6.7'), and TP-7 (1.0') were 6,080, 2,980, 4,780, and 50,600 mg/Kg, respectively. Each of these concentrations was found to exceed their associated NYSDEC RSCO of 2,000 mg/Kg.

The detected concentrations of magnesium in the samples collected from BS-37 (6.0'-7.7'), BS-38 (6.0'-7.1'), BS-39 (6.0'-6.7'), and TP-7 (1.0') were 13,100, 6,790, 28,600, and 13,200 mg/Kg, respectively. Each of these concentrations was found to exceed their associated USEPA Eastern USA Background Level of 5,000 mg/Kg.

The detected concentration of manganese in the samples collected from BS-37 (6.0'-7.7') was 4,460 mg/Kg. This concentration was found to exceed its associated USEPA Eastern USA Background Level of 1,000 mg/Kg.

The detected concentration of mercury in the samples collected from TP-10 (3') and BS-38 (6.0'-7.1') were 0.240 and 0.106 mg/Kg, respectively. Each concentration was found to exceed its associated NYSDEC RSCO of 0.10 mg/Kg. Additionally, the sample collected from TP-10 (3') was found to exceed its associated USEPA Eastern USA Background Level of 0.2 mg/Kg.

The detected concentration of nickel in the samples collected from BS-37 (6.0'-7.7') and TP-7 (1.0') were 32.5 and 14.3 mg/Kg, respectively. Each concentration was found to exceed its associated NYSDEC RSCO of 13 mg/Kg. Additionally, the sample collected from BS-37 (6.0'-7.7') was found to exceed its associated USEPA Eastern USA Background Level of 25 mg/Kg.

The detected concentration of selenium in the samples collected from HA-116 (2'-4') and BS-37 (6.0'-7.7) were 4.77 and 45.3 mg/Kg, respectively. Each concentration was found to exceed its associated NYSDEC RSCO of 2 mg/Kg and its associated USEPA Eastern USA Background Level of 3.9 mg/Kg.

The detected concentrations of zinc in the samples collected from BS-37 (6.0'-7.7'), BS-38 (6.0'-7.1'), and TP-7 (1.0') were 38.3, 25.3, and 111 mg/Kg, respectively. Each of these concentrations were found

to exceed their associated NYSDEC RSCO of 20 mg/Kg. Additionally, the concentrations of zinc in samples TP-7 (1.0') was found to exceed its associated USEPA Eastern USA Background Level of 50 mg/Kg.

TCLP

The eight (8) RCRA metals were included in the TCLPs performed on six (6) soil samples and one (1) slag sample collected during the LaBella Phase II ESA. Although various metals were detected above the reported laboratory MDLs in each of these samples, none of these detections were found to exceed the established USEPA TCLP Regulatory Limits as referenced in Table 10.

Worker Health & Safety Related to Excavation of Slag-Containing Materials

In accordance with the LaBella letter to the City of Rochester dated January 24, 2002, testing was completed within the proposed marina footprint to evaluate the potential for exposure to hazardous gases and vapors as a result of disturbing subsurface slag-containing materials during trenching operations.

Three (3) test pits located within the proposed marina footprint were excavated to a depth of approximately six (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 USEPA Method TO-15 by GC/MS for Tentatively Identified Compounds (TICs) and GC/SCD Analysis for 20 sulfur compounds.

The sample results indicated that no sulfur or sulfide compounds were present above the reported laboratory MDLs, which is in the part per billion range. Hydrogen sulfide is obviously present at concentrations above the odor threshold, but below the MDL. A series of light-weight organic compounds 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 materials do not appear to 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.

Vortex Excavation Memorandum

A Memorandum dated January 15, 2003 completed by LaBella to the City of Rochester reported that petroleum-impaired soils were encountered on October 21, 2002 during the excavation for the installment of a Vortex sewer system at the Site. As such, any future intrusive work in this area may encounter petroleum-impaired soils. Figure 9 presents the current location of this Vortex sewer where the petroleum-impaired soils were encountered.

Figures

As part of the work performed, GIS figures were generated (attached) as summarized below.

- Figure 1 – Site Location Map
- Figure 2 – Borings & Cross Section Transects
- Figure 3 – Geologic Cross Section A-A'
- Figure 4 – Geologic Cross Section B-B'
- Figure 5 – Geologic Cross Section C-C'
- Figure 6 – Bedrock Elevations
- Figure 7 – Slag Bottom
- Figure 8 – Regulated Fill Bottom
- Figure 9 – Analytical

An electronic copy of each figure including the GIS shape files have been provided on the attached CD as Exhibit 1.

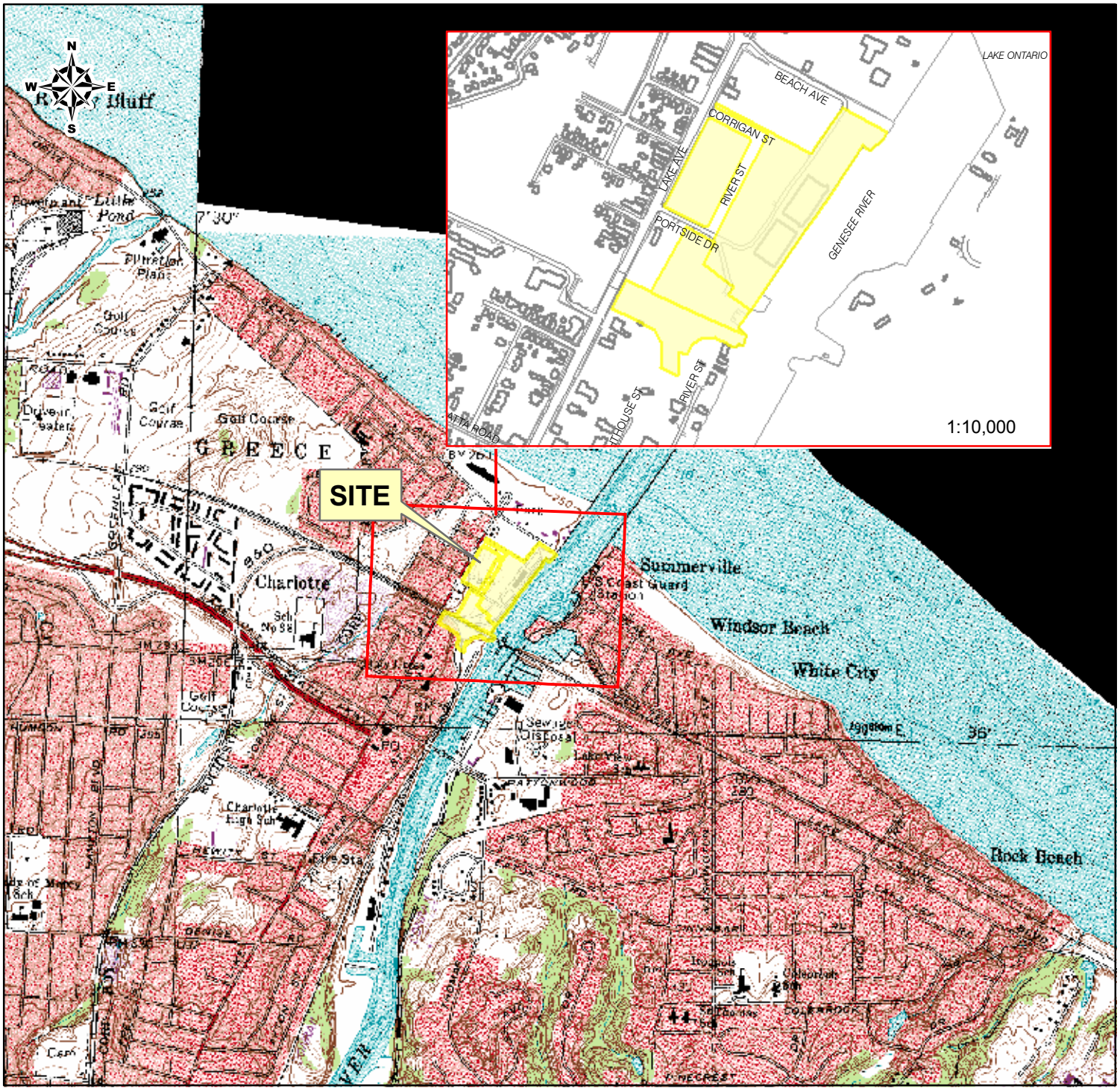
Laboratory Analytical Reports

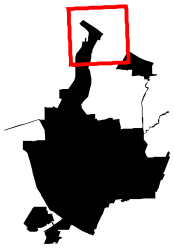
Copies of the laboratory analytical reports for soil and groundwater samples that were submitted to Mitkem are included electronically on CD as Exhibit 2.

Y:\ROCHESTER, CITY\209447 PORT MARINA DATA GAP ANALYSIS\REPORTS\FINAL DATA PACKAGE.DOC

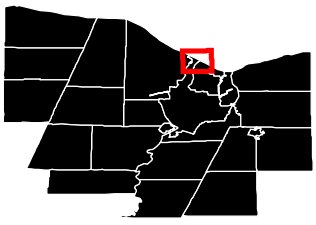
LABELLA
LaBella Associates, P.C.
300 State Street
Rochester, New York 14614

Figures

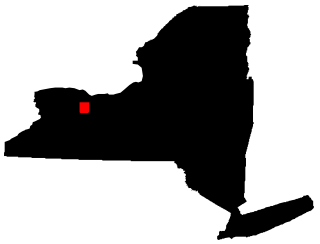




Location within City of Rochester



Location within Monroe County



Location within NY State

PROJECT/DRAWING NUMBER

209447

FIGURE 1

DRAWING TITLE

SITE LOCATION AND VICINITY MAP

1:24,000

ISSUED FOR: REVIEW

DATE: 3/13/2009

DESIGNED BY: XX

DRAWN BY: XX

REVIEWED BY: XX

PROJECT/CLIENT

BENEFICIAL USE DETERMINATION APPLICATION

PORT OF ROCHESTER
Proposed Marina Option 7

LABELLA Associates, P.C.

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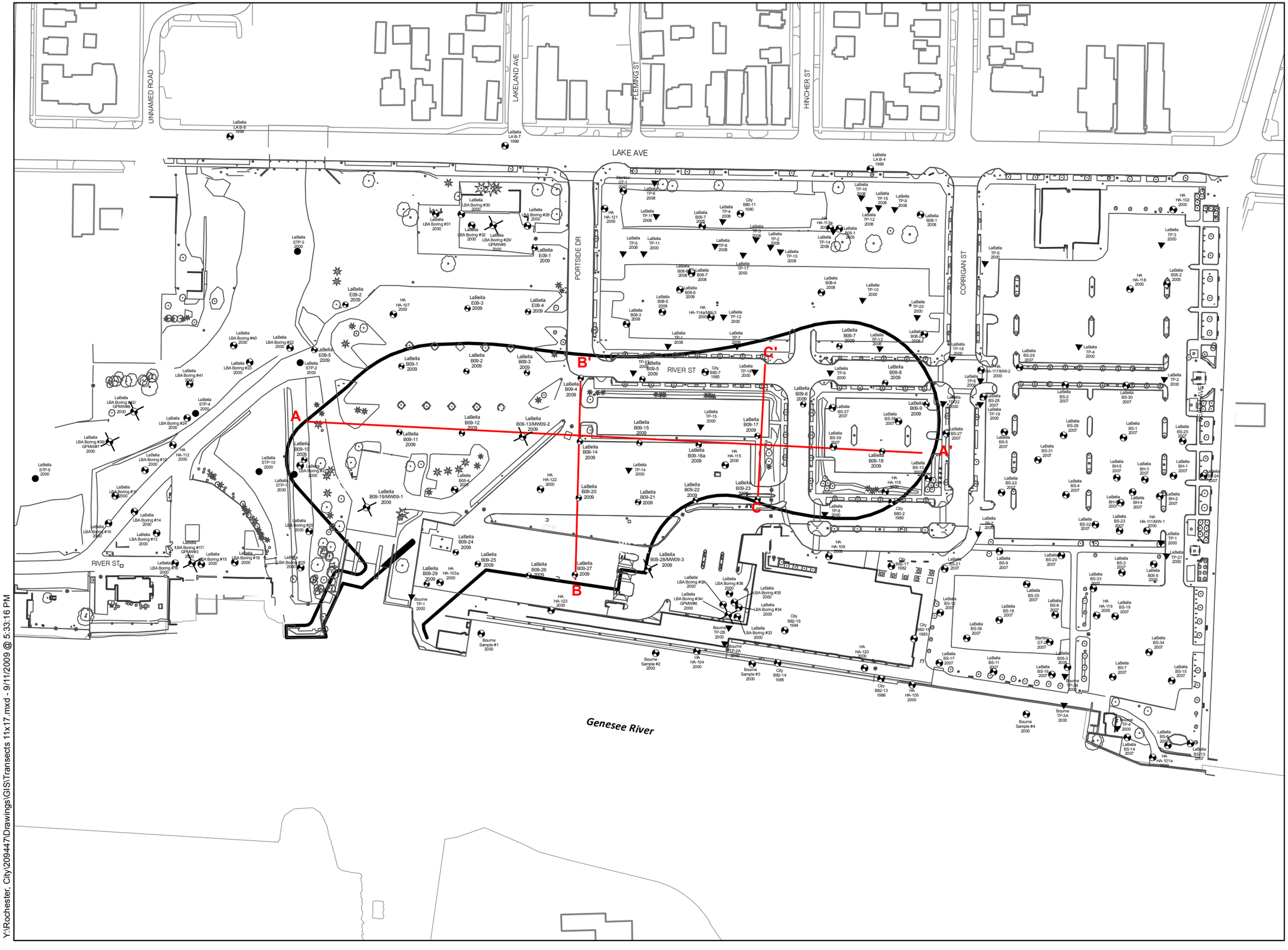

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PORT OF ROCHESTER

Proposed Marina Option 7 Data Gap Analysis

BORINGS & CROSS SECTION TRANSECTS

September 2009

Legend

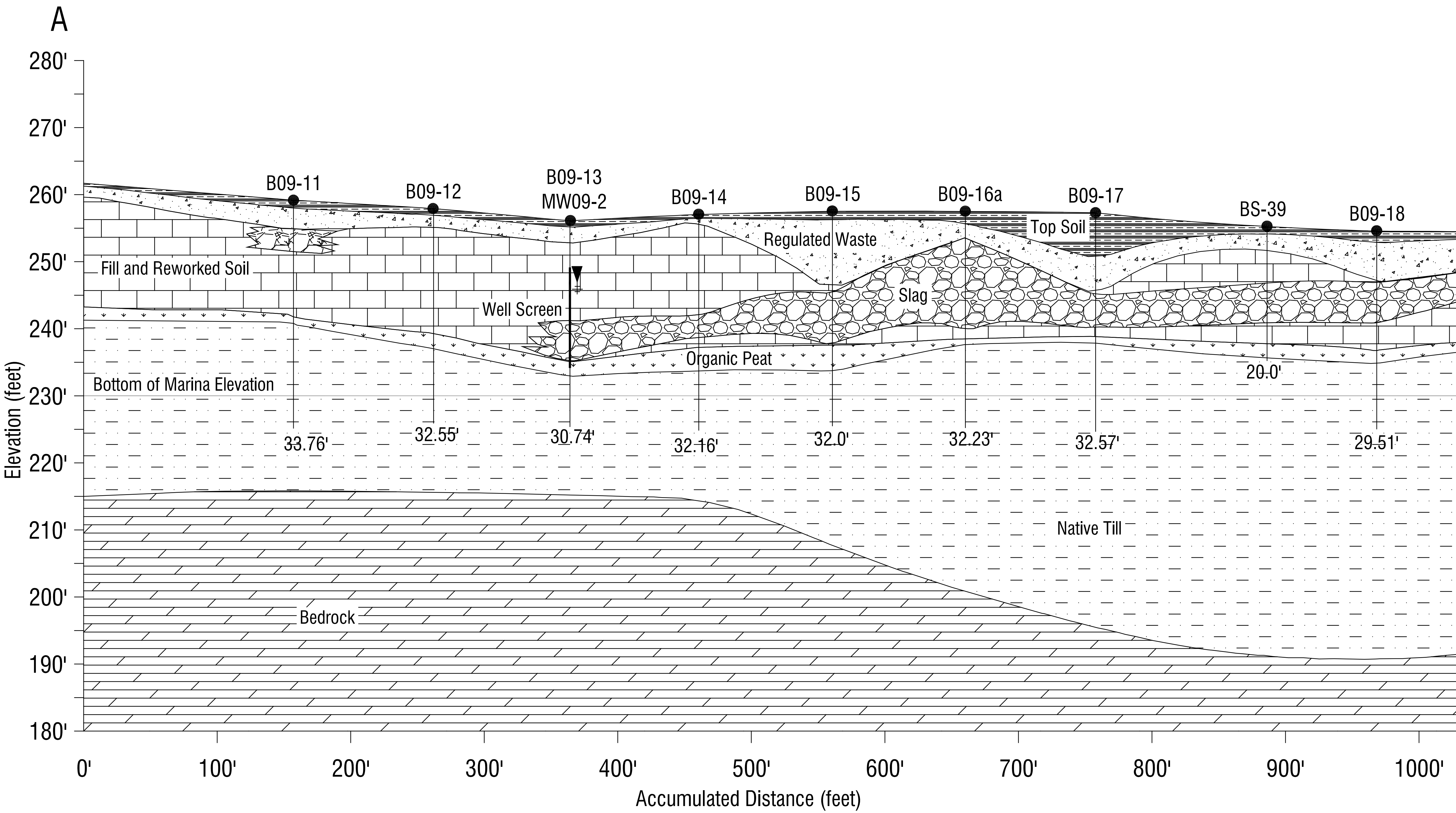
- Soil Boring
- Hand Auger Point
- Monitoring Well
- Test Pit
- Cross Section Transects
- Proposed Public Boardwalk (updated April 2009)
- Former Vortex Sewer

Sources:
(1) City of Rochester Site Survey, 2008.
(2) Passero Figure 7, updated April 2009.
(3) LaBella Port Redevelopment Mapping 2003
(4) LaBella GIS data 2005 through 2009
(5) City of Rochester GIS (buildings and street features)

0 150
1 inch = 150 feet

209447

FIGURE 2



LEGEND

- Approximate Static Groundwater Elevation
- Topsoil
- Fill & Reworked Soil
- Fill - Regulated Waste
- Fill - Slag
- Organic Peat
- Native Till
- Bedrock
- Soil Boring Location
- 30.0' Depth to Boring Bottom

NOTE:

1. Formations based on contours generated using Golden Surfer 8 software.
2. Subsurface formations inferred in areas below the terminal depth of borings and beyond the first and last point.
3. Bedrock surface based on points that do not fall near the cross section axis and therefore not shown.

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Data Gap Evaluation

Port of Rochester
Rochester, New York

DRAWING TITLE

GEOLOGIC CROSS SECTION
A-A'

ISSUED FOR: REVIEW

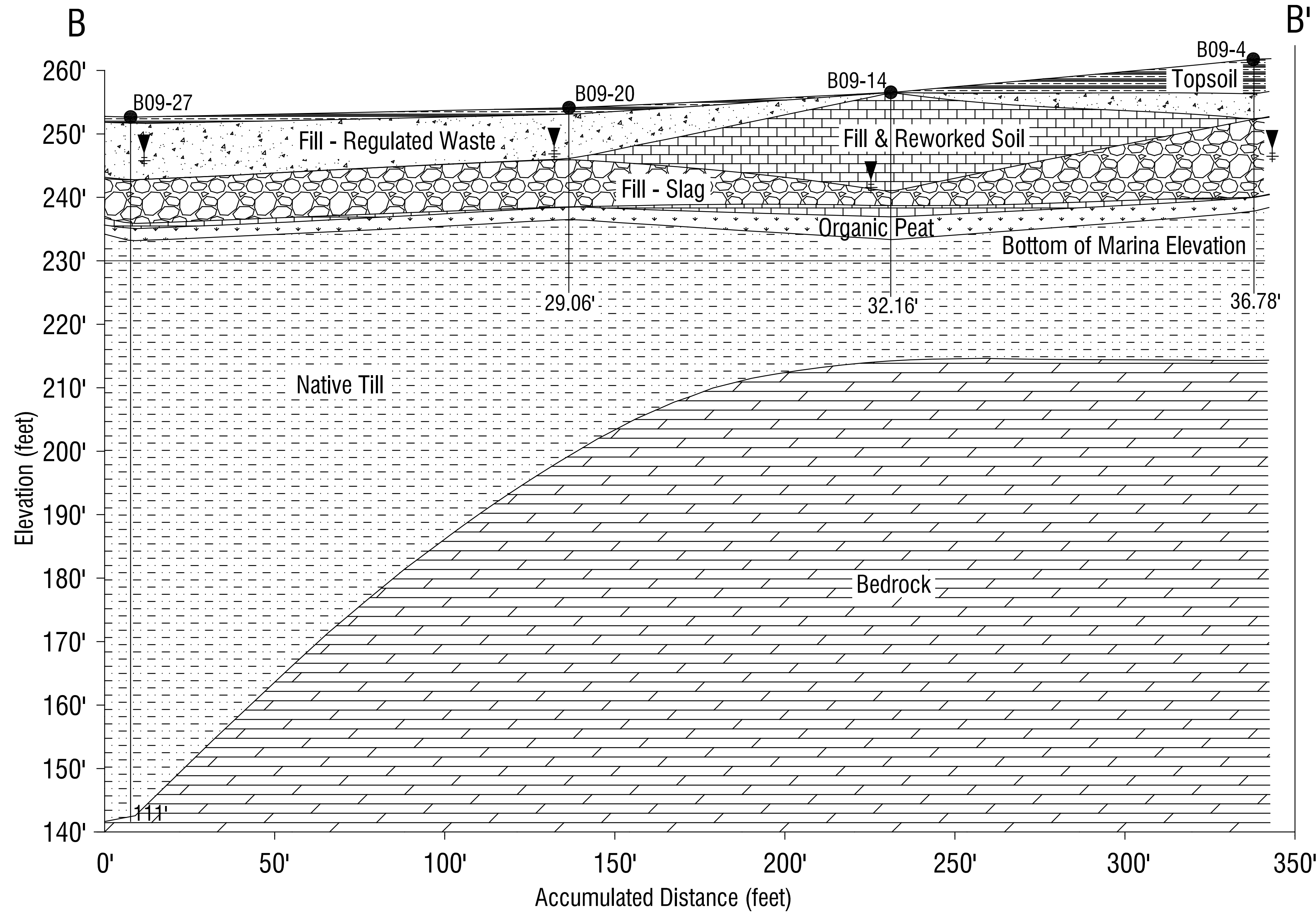
DATE: SEPTEMBER 2009

DESIGNED BY: RCN
DRAWN BY: RCN
REVIEWED BY: DEP

PROJECT/DRAWING NUMBER

209447

FIGURE 3



GENERAL GROUNDWATER FLOW DIRECTION ←

LEGEND

- Approximate Static Groundwater Elevation
- Topsoil
- Fill & Reworked Soil
- Fill - Regulated Waste
- Fill - Slag
- Organic Peat
- Native Till
- Bedrock
- ● Soil Boring Location
- 30.0' Depth to Boring Bottom

NOTE:

1. Formations based on contours generated using Golden Surfer 8 software.
2. Subsurface formations inferred in areas below the terminal depth of borings and beyond the first and last point.
3. Bedrock surface based on points that do not fall near the cross section axis and therefore not shown.

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PROJECT/CLIENT

Data Gap Evaluation

Port of Rochester
Rochester, New York

DRAWING TITLE

GEOLOGIC CROSS SECTION
B-B'

ISSUED FOR: REVIEW

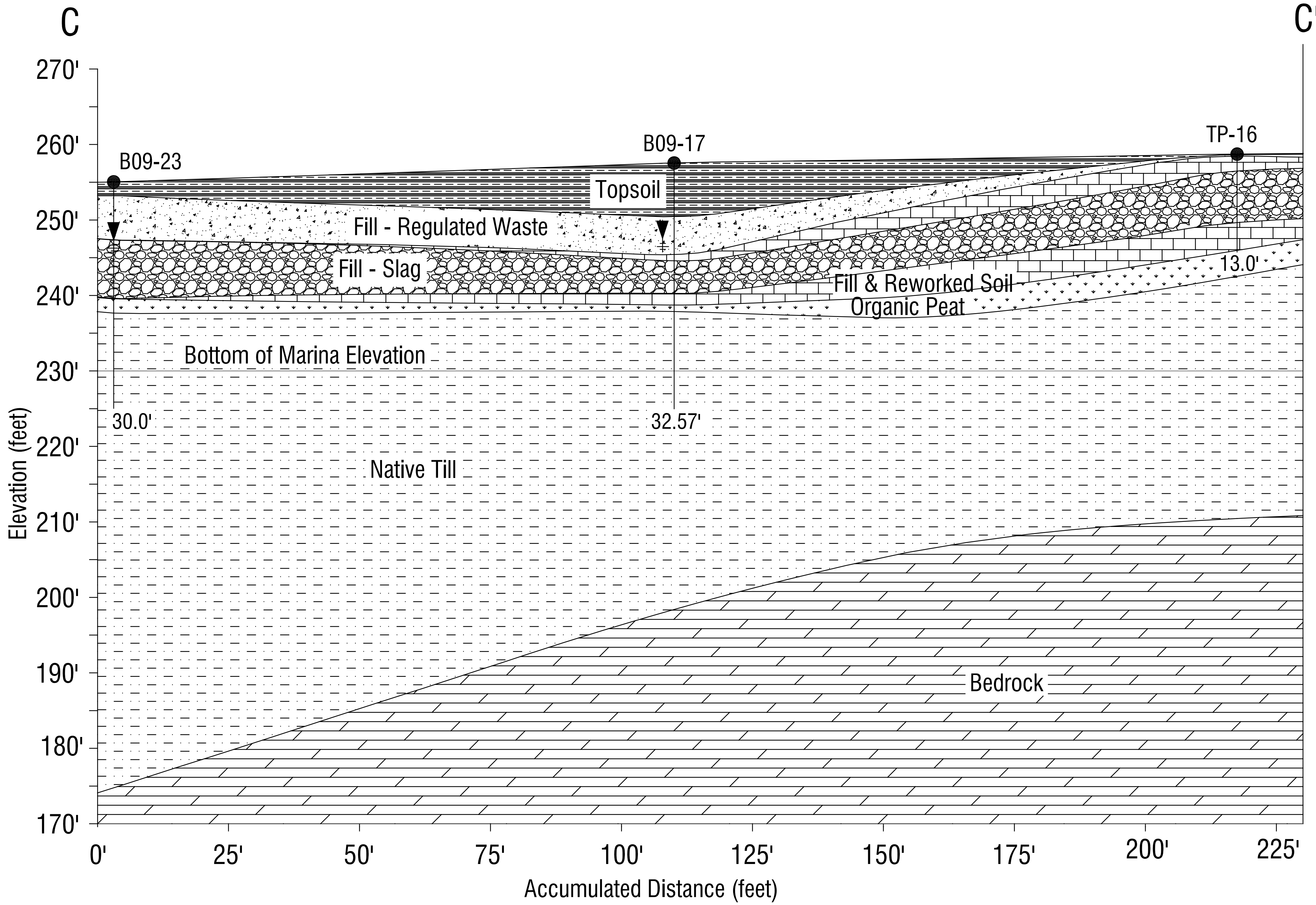
DATE: SEPTEMBER 2009

DESIGNED BY: RCN
DRAWN BY: RCN
REVIEWED BY: DEP

PROJECT/DRAWING NUMBER

209447

FIGURE 4



GENERAL GROUNDWATER FLOW DIRECTION

LEGEND

- Approximate Static Groundwater Elevation
- Topsoil
- Fill & Reworked Soil
- Fill - Regulated Waste
- Fill - Slag
- Organic Peat
- Native Till
- Bedrock
- Soil Boring Location
- 30.0' Depth to Boring Bottom

NOTE:

1. Formations based on contours generated using Golden Surfer 8 software.
2. Subsurface formations inferred in areas below the terminal depth of borings and beyond the first and last point.
3. Bedrock surface based on points that do not fall near the cross section axis and therefore not shown.

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PROJECT/CLIENT

Data Gap Evaluation

Port of Rochester
Rochester, New York

DRAWING TITLE

GEOLOGIC CROSS SECTION C-C'

ISSUED FOR: REVIEW

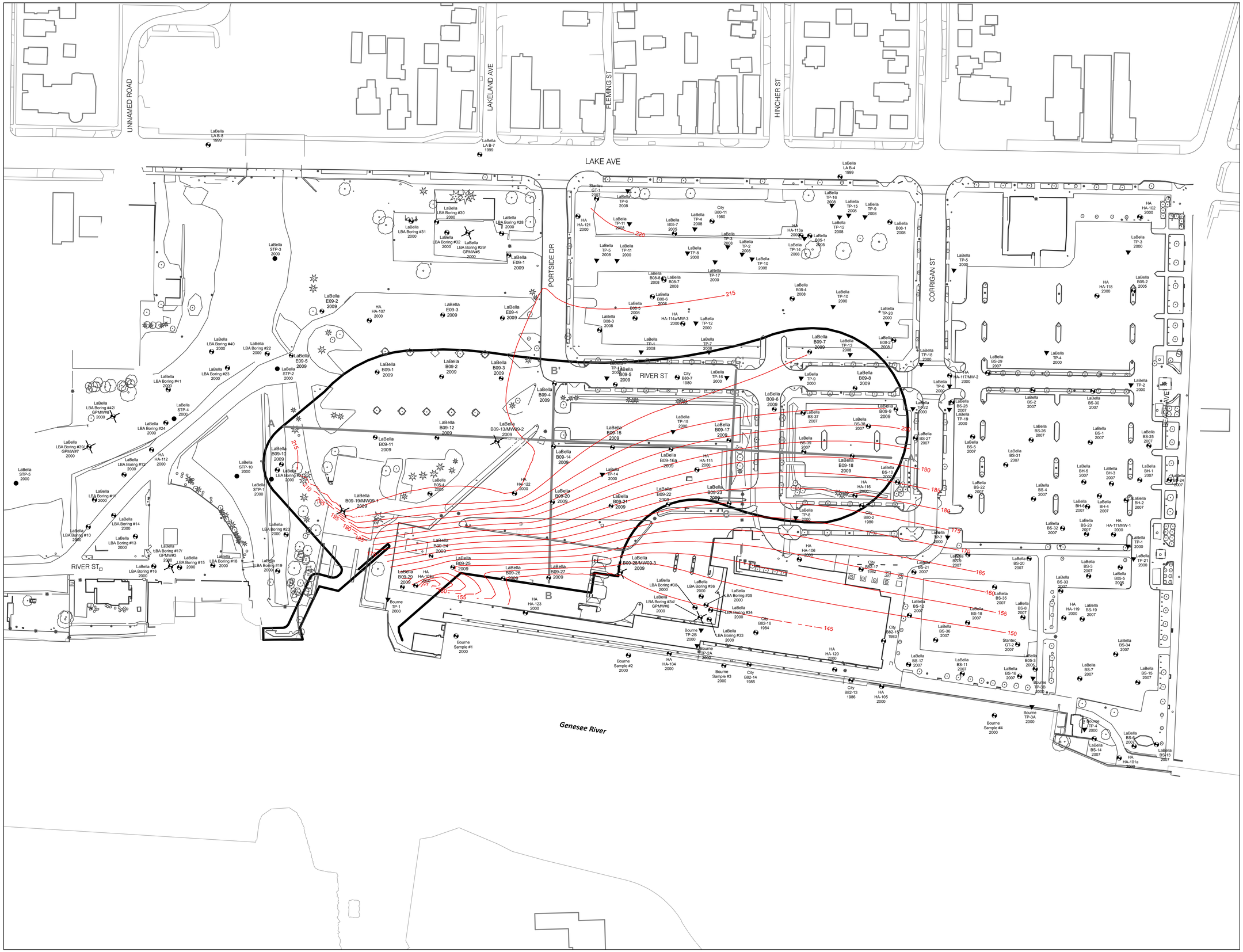
DATE: SEPTEMBER 2009

DESIGNED BY: RCN
DRAWN BY: RCN
REVIEWED BY: DEP

PROJECT/DRAWING NUMBER

209447

FIGURE 5



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PORT OF ROCHESTER

Proposed Marina Option 7
Data Gap Analysis

BEDROCK CONTOURS

September 2009

0 70
1 inch = 70 feet

Legend

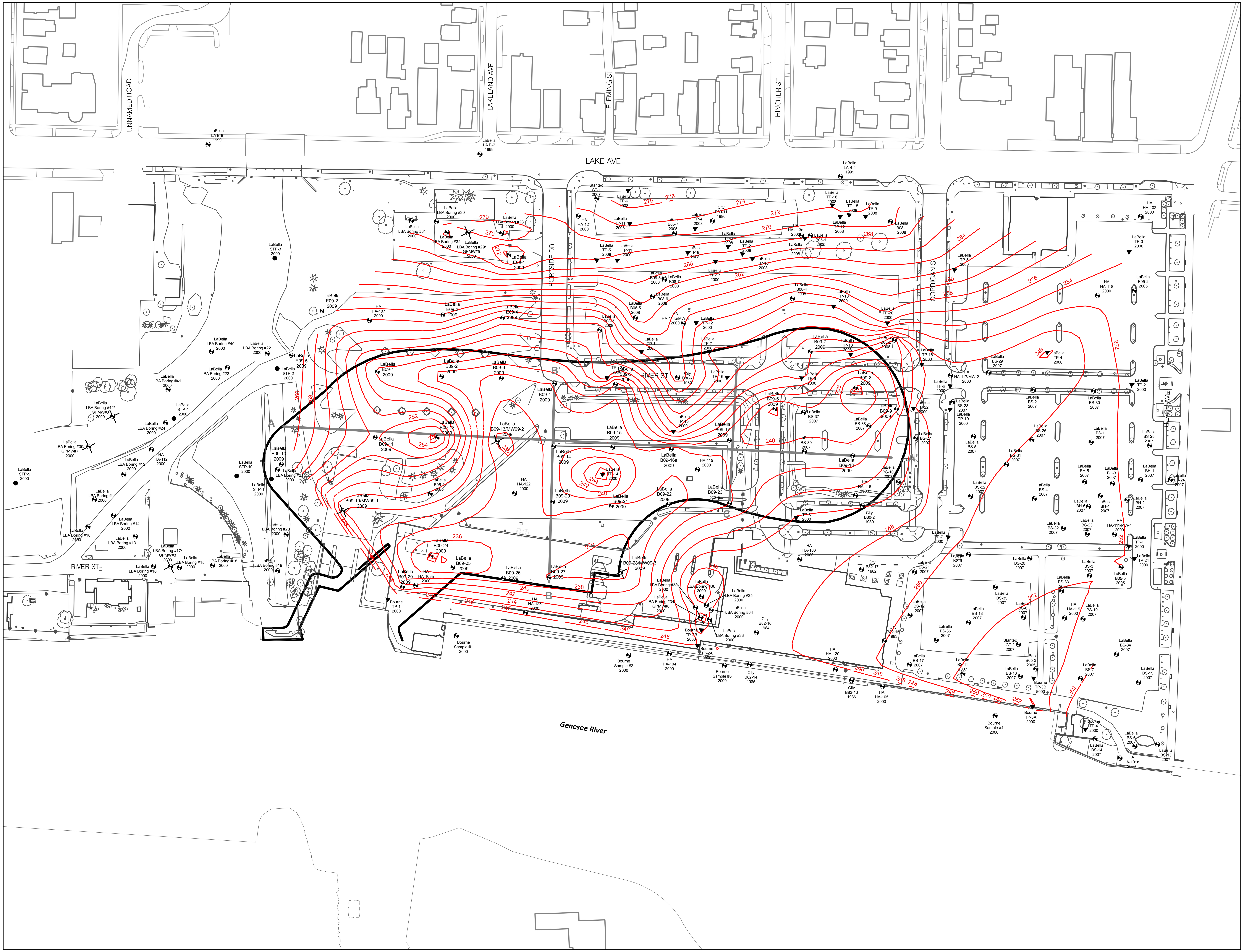
- Soil Boring
- Hand Auger Point
- Monitoring Well
- Test Pit
- Bedrock Contours August 2009
- Cross Section Transects
- Proposed Public Boardwalk (updated April 2009)

Notes:
(1) Bedrock Contours generated with Golden Surfer 8 software using the Kriging algorithm and assuming 2% anisotropy at 75 degrees.
(2) Elevation in feet, based on the City of Rochester Datum.

Sources:
(1) City of Rochester Site Survey, 2008.
(2) Passero Figure 7, updated April 2009.
(3) LaBella Port Redevelopment Mapping 2003
(4) LaBella GIS data 2005 through 2009
(5) City of Rochester GIS (buildings and street features)
(6) Haley & Aldrich Port of Rochester IMprovements and Harbor Ferry Terminal Top of Bedrock Contour Map, September 2000.

209447

FIGURE 6



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PORT OF ROCHESTER

Proposed Marina Option 7 Data Gap Analysis

BOTTOM OF RECOVERABLE SLAG CONTOURS

September 2009

0 70
1 inch = 70 feet

Legend

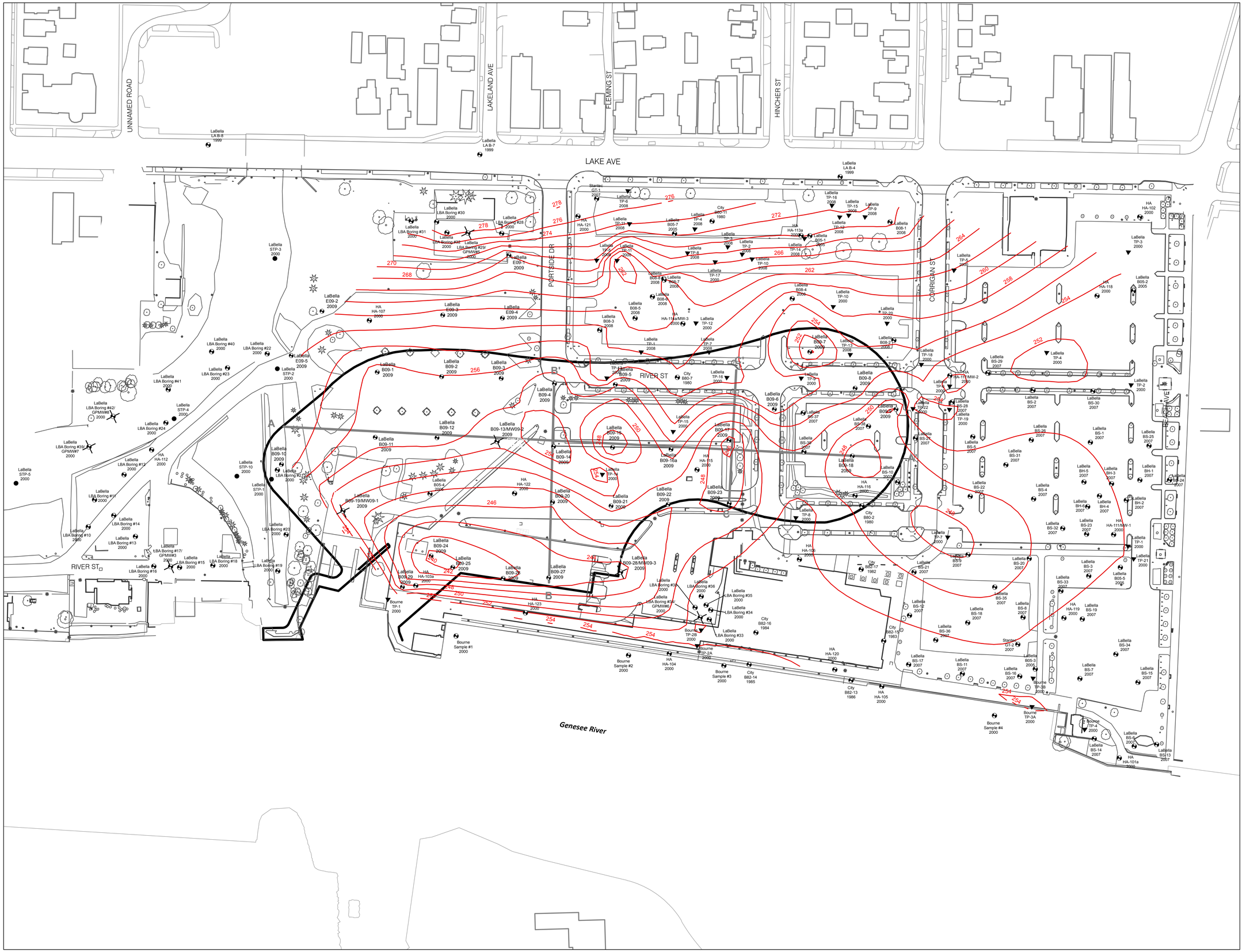
- Soil Boring
- Hand Auger Point
- Monitoring Well
- Test Pit
- Bottom of Slag Contours August 2009
- Cross Section Transects
- Proposed Public Boardwalk (updated April 2009)

Notes:
(1) Contours generated with Golden Surfer 8 software using the Natural Neighbor algorithm.
(2) Elevation in feet, based on the City of Rochester Datum.

Sources:
(1) City of Rochester Site Survey, 2008.
(2) Passero Figure 7, updated April 2009.
(3) LaBella Port Redevelopment Mapping 2003
(4) LaBella GIS data 2005 through 2009
(5) City of Rochester GIS (buildings and street features)
(6) Haley & Aldrich Port of Rochester IMprovements and Harbor Ferry Terminal Top of Bedrock Contour Map, September 2000.

209447

FIGURE 7



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PORT OF ROCHESTER

Proposed Marina Option 7
Data Gap Analysis

BOTTOM OF REGULATED SOLID WASTE CONTOURS

September 2009

0 70
1 inch = 70 feet

Legend

- Soil Boring
- Hand Auger Point
- Monitoring Well
- Test Pit
- Bottom of Regulated Solid Waste Contours August 2009
- Cross Section Transects
- Proposed Public Boardwalk (updated April 2009)

Notes:
(1) Contours generated with Golden Surfer 8 software using the Natural Neighbor algorithm.
(2) Elevation in feet, based on the City of Rochester Datum.

Sources:
(1) City of Rochester Site Survey, 2008.
(2) Passero Figure 7, updated April 2009.
(3) LaBella Port Redevelopment Mapping 2003
(4) LaBella GIS data 2005 through 2009
(5) City of Rochester GIS (buildings and street features)
(6) Haley & Aldrich Port of Rochester IMprovements and Harbor Ferry Terminal Top of Bedrock Contour Map, September 2000.

209447

FIGURE 8

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	Phase II Native		Phase II Fill (a)		Phase II Fill (b)		Phase II Slag
Constituent	7/7/2009		7/6/2009		7/6/2009		6/29/2009
VOCs ug/Kg or ppb							
Naphthalene	ND=5.5	U	4.3	BJ	1.8	BJ	Not Analyzed
Methylene chloride	ND=5.5	U	1.1	BJ	ND=6.7	U	Not Analyzed
Total VOCs	None Detected		5.4	BJ	1.8	BJ	
USEPA TAL Metal mg/Kg or ppm							
Aluminum	4,730	E	8,800	E	12,600	E	20,600	E
Antimony	ND=0.13	N,E	6.4	N,E	1.9	N,E	0.46	N,E
Arsenic	2.2	E	*12.4*	*E*	***29.4***	***E***	*8.3*	*E*
Barium	48.7	E	162	E	*312*	*E*	124	E
Beryllium	*0.61*	*E*	*2.7*	*E*	*3.5*	*E*	*2.9*	*E*
Cadmium	0.064	N,E	*3.4*	*N,E*	*3.4*	*N,E*	0.67	N,E
Calcium	35,200		33,800*		*37,300**		*166,000*	
Chromium	6.1	E	*18.4*	*E*	*32.8*	*E*	*12.1*	*E*
Cobalt	1.8	E	2.2	E	6.7	E	1.1	E
Copper	6.2	N,E	16.7*	N,E	30.2*	N,E	17.4	E
Iron	*6,820*		*273,000**		*119,000**		*51,900*	
Lead	2.1	E	*69.8*	E	231	E	15.1	E
Magnesium	*5,710*	E	*2,370**	E	*8,390**	E	*18,200*	E
Manganese	198		*3,740*		*4,070*		634	
Mercury	0.0057		0.0161		*0.10*		0.0280	
Nickel	5.0	E	7.5	E	9.9	E	12.0	E
Potassium	403	E	1,440	E	1,960	E	2,250	E
Selenium	ND=0.61	N	ND=0.77	N,E	ND=1.0	N,E	ND=0.77	N
Silver	0.1	E	0.47	E	2.2	E	ND=0.078	E
Sodium	220		610		808		1,290	
Thallium	ND=0.19	N	ND=0.23	N,E	ND=0.31	N	0.55	N
Vanadium	5.9	E	15.7	E	35.0	E	17.8	E
Zinc	11.8	N,E	*369*	*N,E*	*2,500*	*N,E*	*47.7*	*N,E*
USEPA TCLP Metal mg/L or ppm								
Arsenic	ND=0.0053	U	ND=0.0053	U	0.019	B	Not Analyed	
Barium	0.699		0.271		0.391		Not Analyed	
Cadmium	ND=0.00014	U	ND=0.00014	U	0.00094	B	Not Analyed	
Chromium	ND=0.0011	U	ND=0.001	U	ND=0.0011	U	Not Analyed	
Lead	ND=0.0022	U	ND=0.002	U	ND=0.0022	U	Not Analyed	
Mercury	ND=0.0000074	B	ND=0.0000056	U	ND=0.0000056	U	Not Analyed	
Selenium	ND=0.0066	U	0.0094	B	0.0175	B	Not Analyed	
Silver	ND=0.000068	B	0.0065	B	0.00088	B	Not Analyed	

TP-7 1.0' 9/9/2008
VOCs ug/kg
m,p-Xylene 11.4
SVOCs ug/kg
Anthracene ND
Benzo (a) anthracene ND
Benzo (a) pyrene ND
Benzo (b) fluoranthene ND
Benzo (g,h,i) perylene ND
Benzo (k) fluoranthene ND
Chrysene ND
Fluoranthene ND
Fluorene ND
Indeno (1,2,3-cd) pyrene ND
Naphthalene 11.4
Phenanthrene ND
Pyrene ND
Total SVOCs 11.4
RCRA Metals mg/kg
Aluminum 9,870
Antimony ND
Arsenic 10.9
Barium 156.0
Beryllium 1.39
Cadmium 1.830
Calcium 54,300
Chromium 14.4
Cobalt 6.3
Copper 17.9
Total Cyanide 11,000
Iron 50,600
Lead 35.9
Magnesium 13,200
Manganese 816
Mercury 0.0145
Nickel 14.3
Potassium 1,510
Selenium ND
Silver 2.4
Sodium 489
Thallium ND
Vanadium 25.5
Zinc 111

TP-15 6'-8' 2/29/2000
RCRA Metals mg/kg
Arsenic 7.12
Barium 657.0
Cadmium ND
Chromium 17.8
Lead 3.29
Mercury ND
Selenium ND
Silver ND
TCLP Metals mg/L
Arsenic ND
Barium 0.35
Cadmium ND
Chromium ND
Lead 0.045
Mercury ND
Selenium ND
Silver ND

TP-17 8' 2/29/2000
TCLP Metals mg/L
Arsenic ND
Barium 0.4
Cadmium ND
Chromium ND
Lead ND
Mercury ND
Selenium ND
Silver ND

TP-16 12' 2/20/2000
TCLP Metals mg/L
Arsenic ND
Barium 0.80
Cadmium ND
Chromium ND
Lead ND
Mercury ND
Selenium ND
Silver ND

TP-10 2/28/2000
RCRA Metals mg/kg 3'
Arsenic 51.10
Barium 22.2
Cadmium 0.604
Chromium 3.72
Lead 5.33
Mercury 0.240
Selenium ND
Silver ND
TCLP Metals mg/L 5' 13'
Arsenic 0.05 ND
Barium 0.2 0.2
Cadmium ND ND
Chromium ND ND
Lead ND ND
Mercury ND ND
Selenium ND ND
Silver ND ND

TP-9 RED SLAG 2/28/2000
RCRA Metals mg/kg
Arsenic ND
Barium 177
Cadmium ND
Chromium 3.04
Lead ND
Mercury ND
Selenium ND
Silver ND
TCLP Metals mg/L
Arsenic ND
Barium 0.3
Cadmium ND
Chromium ND
Lead ND
Mercury ND
Selenium ND
Silver ND

BS-37 6'-7.7' 11/10/2006
VOCs ug/kg
None Detected
SVOCs ug/kg
Anthracene ND
Benzo (a) anthracene 66
Benzo (a) pyrene ND
Benzo (b) fluoranthene 90
Benzo (g,h,i) perylene 39
Benzo (k) fluoranthene ND
Chrysene 61
Fluoranthene 94
Fluorene ND
Indeno (1,2,3-cd) pyrene 35
Naphthalene ND
Phenanthrene 46
Pyrene 84
Total SVOCs 515
TAL Metals mg/kg
Aluminum 54,700
Antimony ND
Arsenic 36.3
Barium 368
Beryllium 42.6
Cadmium 32.0
Calcium 251,000
Chromium 37.8
Cobalt 31.8
Copper 33.6
Total Cyanide NA
Iron 6,080
Lead 35.4
Magnesium 13,100
Manganese 4,460
Mercury ND
Nickel 32.5
Potassium 4,260
Selenium 45.3
Silver 7.8
Sodium 3,080
Thallium ND
Vanadium 52.0
Zinc 38.3

MW09-2 7/27/2009
VOCs ug/L
Toluene 5.2
4-Isopropyltoluene 20
Total VOCs 25.2
Total TICs 18.3 N,J
Total VOCs + TICs 43.5
RCRA Metals mg/L
Arsenic 17 J
Barium 1,400
Cadmium ND
Chromium 4.5 J
Lead 2.6 J
Mercury 0.42
Selenium ND
Silver ND

HA-107 0-2' 5/26/2000
RCRA Metals mg/kg
Arsenic 4.19
Barium 23.3
Cadmium ND
Chromium 8.60
Lead 26.40
Mercury ND
Selenium ND
Silver 1.8

B08-2/MW-1
TAL Metals mg/L

	10/29/2008	2/11/2009
Aluminum	128	2.78
Antimony	ND	ND
Arsenic	0.043	0.01
Barium	0.797	0.156
Beryllium	0.006	ND
Cadmium	0.008	ND
Calcium	397	139
Chromium	0.187	ND
Cobalt	0.069	ND
Copper	0.187	ND
Iron	174	9.53
Lead	0.093	ND
Magnesium	120	43.6
Manganese	4	1.17
Mercury	0.0002	ND
Nickel	0.145	ND
Potassium	41	8.43
Selenium	0.022	0.007
Silver	ND	ND
Sodium	544	830
Thallium	ND	ND
Vanadium	0.247	ND
Zinc	0.505	ND

BS-38 6'-7.1' 11/10/2006
VOCs ug/kg
Acetone 13
Carbon disulfide ND
Methylene chloride 16
m,p-Xylene ND
SVOCs ug/kg
Anthracene ND
Benzo (a) anthracene 26
Benzo (a) pyrene ND
Benzo (b) fluoranthene 30
Benzo (g,h,i) perylene 21
Benzo (k) fluoranthene ND
Chrysene 23
Fluoranthene 30
Fluorene ND
Indeno (1,2,3-cd) pyrene 17
Naphthalene ND
Phenanthrene 17
Pyrene 29
Total SVOCs 193
TAL Metals mg/kg
Aluminum 951
Antimony ND
Arsenic ND
Barium 11.6
Beryllium ND
Cadmium ND
Calcium 342,000
Chromium ND
Cobalt ND
Copper ND
Total Cyanide NA
Iron 2,980
Lead 11.4
Magnesium 6,790
Manganese 150
Mercury 0.106
Nickel ND
Potassium ND
Selenium ND
Silver ND
Sodium ND
Thallium ND
Vanadium ND
Zinc 25.3

HA-116 2-4' 6/2/2000
RCRA Metals mg/kg
Arsenic 2.8
Barium 238
Cadmium ND
Chromium 3.75
Lead ND
Mercury ND
Selenium 4.77
Silver 2.73

TP-1 0-2' 2/28/2000
SVOCs ug/kg
Anthracene 495
Benzo (a) anthracene 835
Benzo (a) pyrene 919
Benzo (b) fluoranthene 954
Benzo (g,h,i) perylene 580
Benzo (k) fluoranthene 1,470
Chrysene 856
Fluoranthene 1,900
Fluorene 365
Indeno (1,2,3-cd) pyrene 576
Naphthalene 945
Phenanthrene 1,900
Pyrene 1,530
Total SVOCs 13,325
RCRA Metals mg/kg
Arsenic 3.1
Barium 909
Cadmium ND
Chromium 5.9
Total Cyanide ND
Lead 38.6
Mercury ND
Selenium ND
Silver ND

MW09-1 7/27/2009
VOCs ug/L
Toluene ND
4-Isopropyltoluene ND
Total VOCs None Detected
Total TICs None Detected
Total VOCs + TICs None Detected
RCRA Metals mg/L
Arsenic 33
Barium 740
Cadmium 1.4 J
Chromium 85
Lead 58
Mercury 0.12 J
Selenium ND
Silver ND

Bourne TP-1 SLAG 1/11/2000
SVOCs
None Detected
RCRA Metals mg/kg
Arsenic 0.875
Barium 511
Cadmium 2.84
Chromium ND
Total Cyanide ND
Lead ND
Mercury ND
Selenium ND
Silver ND

MW09-3 7/27/2009
VOCs ug/L
Toluene 5.2
4-Isopropyltoluene 20
Total VOCs 25.2
Total TICs 18.3 N,J
Total VOCs + TICs 43.5
RCRA Metals mg/L
Arsenic 42
Barium 360
Cadmium 1.9 J
Chromium 68
Lead 95
Mercury 0.26
Selenium ND
Silver ND

MWBS-39 11/15/06
VOCs ug/L
Acetone 7.0
Carbon disulfide 1.2
Methelyen chloride 1.7
Total VOCs 8.9
Total TICs ND
Total VOCs + TICs 9.9
Pesticides ug/L
delta-BHC 0.050
4,4'-DDT 0.049
Heptachor 0.097
SVOCs ug/L
Total SVOCs ND
Total TICs 35
Total SVOCS + TICs 35
TAL Metals mg/L
Aluminum 487
Antimony ND
Arsenic 3.14
Barium 52.1
Beryllium ND
Cadmium ND
Calcium 89,400
Chromium ND
Cobalt ND
Copper ND
iron 1,120
Lead 3.30
Magnesium 7,660
Manganese 370
Mercury ND
Nickel ND
Potassium 38,500
Selenium ND
Silver ND
Sodium 403,000
Thallium ND
Vanadium ND
Zinc 27

BS-39 6.0-6.7' 11/10/2006
VOCs ug/kg
Acetone 8
Carbon disulfide 1
Methylene chloride 13
m,p-Xylene ND
SVOCs ug/kg
None Detected
TAL Metals mg/kg
Aluminum 44,400
Antimony ND
Arsenic ND
Barium 269
Beryllium 4.2
Cadmium ND
Calcium 202,000
Chromium ND
Cobalt ND
Copper ND
Total Cyanide NA
Iron 4,780
Lead ND
Magnesium 28,600
Manganese 422
Mercury ND
Nickel ND
Potassium 7,060
Selenium ND
Silver ND
Sodium ND
Thallium ND
Vanadium 9.800
Zinc ND

TP-8 2-3'G 2/28/2000
TCLP Metals mg/kg
Arsenic 52
Barium 165
Cadmium ND
Chromium 15.4
Lead 62.8
Mercury ND
Selenium 1.15
Silver ND
TCLP Metals mg/L
Arsenic ND
Barium 0.2
Cadmium ND
Chromium ND
Lead ND
Mercury ND
Selenium ND
Silver ND

	Phase I Native		Phase I Fill		Phase I Slag (a)		Phase I Slag (b)
Constituent	7/7/2009		7/2/2009		7/1/2009		7/6/2009
VOCs ug/Kg or ppb							
Naphthalene	ND=5.8	U	2.0	BJ	Not Analyzed		Not Analyzed
Methylene chloride	ND=5.8	U	ND=5.7	U	Not Analyzed		Not Analyzed
Total VOCs	None Detected		2.0	BJ			
USEPA TAL Metal mg/Kg or ppm							
Aluminum	9,480	E	1,720	E	27,300	E	23,900	E
Antimony	0.23	N,E	4.9	N,E	0.56	N,E	0.61	N,E
Arsenic	2.9	E	9.50	E	5.1	E	*7.8*	*E*
Barium	46.7	E	34.6	E	171	E	120	E
Beryllium	*0.46*	*E*	*0.31*	*E*	*4.6*	*E*	*2.9*	*E*
Cadmium	0.14	N,E	*3.7*	*N,E*	ND=0.014	N,E	0.048	N,E
Calcium	3,450		2,790*		251,000*		243,000	
Chromium	*13.0*	*E*	*11.1*	*E*	5.7	E	5.7	E
Cobalt	7.0	E	0.55	E	ND=0.040	E	ND=0.040	E
Copper	6.4	N,E	*168**	*N,E*	3.3*	E	7.7	E
Iron	*11,800*		*177,000**		*3,610**		*7,170*	
Lead	7.3	E	145	E	3.3	E	4.9	E
Magnesium	3,070	E	100*	E	26,100*	E	39,900	E
Manganese	137		43.1		256		312	
Mercury	0.0160		0.068		ND=0.0057	U	0.0090	
Nickel	*15.9*	*E*	11.8	E	4.1	E	5.6	E
Potassium	478	E	386	E	2,290	E	2,500	E
Selenium	0.99	N	ND=0.76	N,E	1.1	N	1.3	N
Silver	0.3	E	ND=0.077	E	ND=0.090	E	ND=0.091	E
Sodium	66.6		112		1,230		1,160	
Thallium	ND=0.25	N	ND=0.24	N,E	2.3	N	1.8	N
Vanadium	15.2	E	12.1	E	6.3	E	12.1	E
Zinc	*33.3*	*N,E*	13.9	N,E	3.1	N,E	7.1	N,E
USEPA TCLP Metal mg/L or ppm								
Arsenic	ND=0.0053	U	ND=0.0053	U	Not Analyzed		Not Analyzed	
Barium	0.435		0.336		Not Analyzed		Not Analyzed	
Cadmium	0.00025	B	0.0012	B	Not Analyzed		Not Analyzed	
Chromium	ND=0.0011	U	ND=0.0011	U	Not Analyzed		Not Analyzed	
Lead	0.0026	B	ND=0.0022	U	Not Analyzed		Not Analyzed	
Mercury	ND=0.0000056	U	ND=0.0056	U	Not Analyzed		Not Analyzed	
Selenium	0.0109	B	0.0115	B	Not Analyzed		Not Analyzed	
Silver	0.000650	B	0.0013	B	Not Analyzed		Not Analyzed	

Notes:
B - Denotes that the reported value was obtained from an instrument reading that was less than the sample quantitation limit.
J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero. ND 5.7 U - Denotes the compound was not detected above the reported laboratory detection limit shown.
For VOCs, Pesticides, and TAL Metals in Groundwater:
Bold type denotest that the compound was found to exceed its associated NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standard.
For SVOCs in Soil:
Bold type denotest that the compound was reported to exceed its associated NYSDEC TAGM 4046 SCO to Protect Groundwater Quality with a Correction Factor of 40% (Cf40)
Italicized type denotes that the compound was reported to exceed its associated NYSDEC TAGM 4046 Recommend Soil Cleanup Objective.
For TAL Metals in Soil:
Bold Type denotes that the detected value exceeds its associated 6 NYCRR Part 375-6.8(b) SCO - Protection of Public Health - Commercial Use.
Italicized type denotes that the detected value exceeds its associated NYSDEC TAGM #4046 Recommended Soil Cleanup Objective.
Red type denotes that the compound exceeds its associated Eastern USA Background Level.

Legend
- Soil Boring
- Hand Auger Point
- Monitoring Well
- Test Pit
- Data Gap Boring: Phase I Composite
- DataGap Boring: Phase II Composite
- Data Gap Borings for Phase I Composite Samples
- Data Gap Borings for Phase II Composite Samples
- Proposed Public Boardwalk (updated April 2009)

Sources:
(1) City of Rochester Site Survey, 2008.
(2) Passero Figure 7, updated April 2009.
(3) LaBella Port Redevelopment Mapping 2003
(4) LaBella GIS data 2005 through 2009
(5) City of Rochester GIS (buildings and street features)
(6) Haley & Aldrich Port of Rochester IMprovements and Harbor Ferry Terminal Top of Bedrock Contour Map, September 2000.

0 70
1 inch = 70 feet

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PORT OF ROCHESTER

Proposed Marina Option 7 Data Gap Analysis

ANALYTICAL DATA SUMMARY

September 2009

209447

FIGURE 9

LABELLA
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Rochester, New York 14614

Tables

Table 1

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Details of Completed Soil Borings

Location	Surface Elevation (ft)	Bottom of Boring Elevation (ft)	Total Depth (ft)	Depth to Top of Regulated Fill Materials - Without Slag (ft)	Thickness of Regulated Fill Materials - Without Slag (ft)	Depth to Bottom of Regulated Fill Materials - Without Slag (ft)	Depth to Top of Slag (ft)	Thickness of Slag (ft)	Depth to Bottom of Slag (ft)	Total Depth of all Regulated Fill Materials (including Slag) (ft)	Boring Type
B09-01	262.74	216.54	46.20	3.20	4.80	8.00	8.00	10.00	18.00	18.00	Bedrock
B09-02	261.82	225.82	36.00	1.00	5.00	6.00	6.00	15.50	21.50	21.50	Marina Basin
B09-03	260.32	224.32	36.00	1.00	4.20	5.20	5.20	16.30	21.50	21.50	Marina Basin
B09-04	261.78	224.78	37.00	5.50	4.00	9.50	9.50	12.30	21.80	21.80	Marina Basin
B09-05	260.77	213.27	47.50	5.00	3.00	8.00	8.00	14.00	22.00	22.00	Bedrock
B09-06	257.65	225.65	32.00	None	None	None	13.80	5.90	19.70	19.70	Marina Basin
B09-07	256.89	225.89	31.00	2.20	5.80	8.00	8.00	3.30	11.30	11.30	Marina Basin
B09-08	256.00	225.00	31.00	None	None	None	5.80	15.50	21.30	21.30	Marina Basin
B09-09	255.25	205.25	50.00	0.60	7.40	8.00	8.00	6.30	14.30	14.30	Bedrock
B09-10	260.07	213.37	46.70	Surface	2.00	2.00	None	None	None	2.00	Bedrock
B09-11	258.76	224.76	34.00	1.00	3.00	4.00	4.00	2.90	6.90	6.90	Marina Basin
B09-12	257.55	225.55	32.00	1.00	1.50	2.50	None	None	None	2.50	Marina Basin
B09-13	255.74	224.74	31.00	1.00	2.30	3.30	15.60	5.40	21.00	21.00	Marina Basin
B09-14	257.16	225.16	32.00	None	None	None	15.60	2.20	17.80	17.80	Marina Basin
B09-15	257.45	225.45	32.00	1.00	11.40	12.40	12.40	7.30	19.70	19.70	Marina Basin
B09-16	257.23	225.23	32.00	2.00	2.00	4.00	4.00	14.90	18.90	18.90	Marina Basin
B09-17	257.57	225.57	32.00	7.80	5.40	13.20	13.20	4.10	17.30	17.30	Marina Basin
B09-18	254.51	224.51	30.00	1.80	5.90	7.70	7.70	6.00	13.70	13.70	Marina Basin
B09-19	253.20	216.20	37.00	1.00	3.00	4.00	4.00	7.80	11.80	11.80	Bedrock
B09-20	254.06	224.06	30.00	1.00	7.00	8.00	8.00	7.50	15.50	15.50	Marina Basin
B09-21	253.98	223.98	30.00	1.50	1.70	3.20	3.70	13.40	17.10	17.10	Marina Basin
B09-22	254.12	224.12	30.00	3.00	3.00	6.00	6.00	11.00	17.00	17.00	Marina Basin
B09-23	255.00	225.00	30.00	1.80	5.90	7.70	7.70	7.80	15.50	15.50	Marina Basin
B09-24	253.07	225.07	28.00	1.00	13.20	14.20	14.20	5.80	20.00	20.00	Marina Basin
B09-25	252.82	153.02	99.80	3.60	10.00	13.60	13.60	5.00	18.60	18.60	Bedrock
B09-26	252.73	144.73	108.00	1.00	10.50	11.50	11.50	4.50	16.00	16.00	Bedrock
B09-27	252.94	141.94	111.00	1.00	8.90	9.90	9.90	6.90	16.80	16.80	Bedrock
B09-28	252.04	145.04	107.00	2.20	7.20	9.40	9.40	8.10	17.50	17.80	Bedrock
B09-29	254.28	147.68	106.60	4.20	5.00	9.20	9.20	6.10	15.30	15.30	Bedrock
E09-01	276.52	246.52	30.00	2.00	6.30	8.30	None	None	None	8.30	Engineering
E09-02	265.98	235.98	30.00	1.00	3.00	4.00	4.00	4.00	8.00	8.00	Engineering
E09-03	266.01	236.01	30.00	1.20	4.00	5.20	5.20	2.80	8.00	8.00	Engineering
E09-04	264.88	234.88	30.00	1.00	3.00	4.00	4.00	10.00	14.00	14.00	Engineering
E09-05	262.28	232.28	30.00	1.00	1.00	2.00	None	None	None	2.00	Engineering

Table 2

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Volatile Organic Compounds (VOCs)
Test Results in micrograms per Kilogram (µg/Kg) or parts per billion (ppb)

Constituent	Soil Sample Identification												NYSDEC TAGM #4046: Soil Cleanup Objectives to Protect Groundwater Quality Cf_{40}	NYSDEC TAGM #4046: Recommended Soil Cleanup Objectives	Part 375 Restricted Use Soil Cleanup Objectives (SCOs) - Protection of Public Health - Commercial Use[1]
	Phase I Fill		Phase II Fill (a)		Phase II Fill (b)		Phase I Native		Phase II Native		Trip Blank				
	7/2/2009		7/6/2009		7/6/2009		7/7/2009		7/7/2009		7/7/2009				
Naphthalene	2.0	B,J	4.3	B,J	1.8	B,J	ND<5.8	U	ND<5.5	U	ND<5.0	U	5,200	13,000	500,000[2]
Methylene chloride	ND<5.7	U	1.1	B,J	ND<6.7	U	ND<5.8	U	ND<5.5	U	3.0	B,J	40	100	500,000[2]
Total VOCs	2.0	B,J	5.4	B,J	1.8	B,J	None Detected		None Detected		3.0	B,J	<4,000	<10,000	Not Applicable

Notes:

VOC analysis by United States Environmental Protection Agency (USEPA) Method 8260B
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
(2) SCOs for Commerical Use were capped at a maximum value of 500,000 ppb
B - Denotes that the reported value was obtained from an instrument reading that was less than the sample quantitation limit.
J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.
ND<5.7 U - Denotes the compound was not detected above the reported laboratory detection limit shown.

Table 3

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Metals
Test Results in milligrams per Kilogram (mg/Kg) or parts per million (ppm)

USEPA TAL Metal	Soil Sample ID & Date Sampled														Part 375 Restricted Use Soil Cleanup Objectives (SCOs) - Protection of Public Health - Commercial Use[1]	NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives	USEPA Eastern USA Background Levels
	Phase I Fill		Phase II Fill (a)		Phase II Fill (b)		Phase I Slag (a)		Phase I Slag (b)		Phase II Slag		Phase I Native		Phase II Native		
	7/2/2009		7/6/2009		7/6/2009		7/1/2009		7/6/2009		6/29/2009		7/7/2009		7/7/2009		
Aluminum	1,720	E	8,800	E	12,600	E	27,300	E	23,900	E	20,600	E	9,480	E	4,730	E	NA	SB	33,000
Antimony	4.9	N,E	6.4	N,E	1.9	N,E	0.56	N,E	0.61	N,E	0.46	N,E	0.23	N,E	ND<0.13	N,E	NA	SB	NA
Arsenic	9.50	E	*12.4*	*E*	***29.4***	***E***	5.1	E	*7.8*	*E*	*8.3*	*E*	2.9	E	2.2	E	16	7.5 or SB	3.0-12
Barium	34.6	E	162	E	*312*	*E*	171	E	120	E	124	E	46.7	E	48.7	E	400	300 or SB	15-600
Beryllium	*0.31*	*E*	*2.7*	*E*	*3.5*	*E*	*4.6*	*E*	*2.9*	*E*	*2.9*	*E*	*0.46*	*E*	*0.61*	*E*	590	0.16 or SB	0-1.75
Cadmium	*3.7*	*N,E*	*5.4*	*N,E*	*3.4*	*N,E*	ND<0.014	N,E	0.048	N,E	0.67	N,E	0.14	N,E	0.064	N,E	9.3	1 or SB	0.1-1
Calcium	2,790*		33,800*		37,300*		251,000*		243,000		166,000		3,450		35,200		NA	SB	130-35,000
Chromium	*11.1*	*E*	*18.4*	*E*	*32.8*	*E*	3.1	E	5.7	E	*12.1*	*E*	*13.0*	*E*	6.1	E	400	10 or SB	1.5-40
Cobalt	0.55	E	2.2	E	6.7	E	ND<0.040	E	ND<0.040	E	1.1	E	7.0	E	1.8	E	NA	30 or SB	25-60
Copper	*108**	*N,E*	16.7*	N,E	30.2*	N,E	3.3*	E	7.7	E	17.4	E	6.4	N,E	6.2	N,E	270	25 or SB	1-50
Iron	*177,000**		*273,000**		*119,000**		*3,610**		*7,170*		*51,900*		*11,800*		*6,820*		NA	2,000 or SB	2,000-550,000
Lead	145	E	69.8	E	231	E	3.3	E	4.9	E	15.1	E	7.3	E	2.1	E	1,000	200-500	200-500
Magnesium	100*	E	2,370*	E	8,390*	E	26,100*	E	39,800	E	18,200	E	3,070	E	5,710	E	NA	SB	100-5,000
Manganese	43.1		3,740		4,070		256		312		634		137		198		10,000	SB	50-1,000
Mercury	0.068		0.0161		*0.10*		ND<0.0057	U	0.0090		0.0280		0.0160		0.0057		2.8	0.1	0.001-0.2
Nickel	11.8	E	7.5	E	9.9	E	4.1	E	5.6	E	12.0	E	*15.9*	*E*	5.0	E	310.0	13 or SB	0.5-25
Potassium	386	E	1,440	E	1,960	E	2,290	E	2,500	E	2,250	E	478	E	403	E	NA	SB	8,500-43,000
Selenium	ND<0.76	N,E	ND<0.77	N,E	ND<1.0	N,E	1.1	N	1.3	N	ND<0.77	N	0.99	N	ND<0.61	N	1,500	2 or SB	0.1-3.9
Silver	ND<0.077	E	0.47	E	2.2	E	ND<0.090	E	ND<0.091	E	ND<0.078	E	0.3	E	0.1	E	1,500	SB	NA
Sodium	112		610		808		1,230		1,160		1,290		66.6		220		NA	SB	6,000-8,000
Thallium	ND<0.24	N,E	ND<0.23	N,E	ND<0.31	N	2.3	N	1.8	N	0.55	N	ND<0.25	N	ND<0.19	N	NA	SB	NA
Vanadium	12.1	E	15.7	E	35.0	E	6.3	E	12.1	E	17.8	E	15.2	E	5.9	E	NA	150 or SB	1-300
Zinc	13.9	N,E	*369*	*N,E*	*2,500*	*N,E*	3.1	N,E	7.3	N,E	*47.7*	*N,E*	*33.3*	*N,E*	11.8	N,E	10,000	20 or SB	9-50

Notes:

TAL Metals analysis by United States Environmental Protection Agency (USEPA) Methods 6010 and 7471 (Mercury)
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
Bold Type denotes that the detected value exceeds its associated 6 NYCRR Part 375-6.8(b) SCO - Protection of Public Health - Commercial Use.
Italicized type denotes that the detected value exceeds its associated NYSDEC TAGM #4046 Recommended Soil Cleanup Objective.
Highlighted type denotes that the compound exceeds its associated Eastern USA Background Level.
NA denotes value not available.
SB denotes to defer to the Eastern USA Background Level for the given metal.
N denotes the inorganic analysis is associated with a spike sample not within control limits.
E denotes the reported value is estimated because of the presence of an interference, as determined by serial dilution analysis.
* denotes the inorganic duplicate analysis was not within the established QC control limit as specified by the laboratory.

Table 4

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Toxicity Characteristic Leaching Procedure (TCLP) on Metals
Test Results in milligrams per Liter (mg/L) or parts per million (ppm)

USEPA TCLP Metal	Soil Sample ID					USEPA TCLP Regulatory Limits
	Phase I Fill	Phase II Fill (a)	Phase II Fill (b)	Phase I Native	Phase II Native	
	7/2/2009	7/6/2009	7/6/2009	7/7/2009	7/7/2009	
Arsenic	ND<0.0053 U	ND<0.0053 U	0.019 B	ND<0.0053 U	ND<0.0053 U	5.0
Barium	0.336	0.271	0.391	0.435	0.699	100
Cadmium	0.0012 B	ND<0.00014 U	0.00094 B	0.00025 B	ND<0.00014 U	1.0
Chromium	ND<0.0011 U	ND<0.001 U	ND<0.0011 U	ND<0.0011 U	ND<0.0011 U	5.0
Lead	ND<0.0022 U	ND<0.002 U	ND<0.0022 U	0.0026 B	ND<0.0022 U	5.0
Mercury	ND<0.0056 U	ND<0.0000056 U	ND<0.000056 U	ND<0.000056 U	ND<0.000074 B	0.2
Selenium	0.0115 B	0.0094 B	0.0175 B	0.0109 B	ND<0.0066 U	1.0
Silver	0.0013 B	0.0065 B	0.00088 B	0.000650 B	ND<0.00068 B	5.0

Notes:

TCLP Metals analysis by United States Environmental Protection Agency (USEPA) Methods 1311.
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
ND denotes compound not detected above the laboratory method detection limit shown.
NA denotes value not available.
SB denotes to defer to the Eastern USA Background Level for the given metal.
B denotes that a "trace" concentration was detected below the reporting limit and equal to or above the detection limit.

Table 5

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Volatile Organic Compounds (VOCs) in Groundwater
Test Results in micrograms per Liter (µg/L) or parts per billion (ppb)

Constituent	Monitoring Well Identification				NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standards
	MW09-1	MW09-2	MW09-3	Trip Blank	
	7/27/2009	7/27/2009	7/27/2009	7/27/2009	
Toluene	ND<5.0 U	**5.2**	ND<5.0 U	ND<5.0 U	5
4-Isopropyltoluene	ND<5.0 U	**20**	ND<5.0 U	ND<5.0 U	5
Total VOCs	None Detected	25.2	None Detected	None Detected	NA
Total TICs	None Detected	18.3 N,J	None Detected	None Detected	NA
Total VOCs + TICs	None Detected	43.5	None Detected	None Detected	NA

Notes:

VOC analysis by United States Environmental Protection Agency (USEPA) Method 8260B

Bold type denotest that the compound was found to exceed its associated NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standard.

NA - Denotes not available.

ND<5.0 U - Denotes the compound was not detected above the laboratory detection limit shown.

N - Denotes presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used in combination with the J flag. It is applied to all TIC results.

J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

Table 6

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Metals in Groundwater
Test Results in milligrams per Liter (mg/L) or parts per billion (ppb)

USEPA 8 RCRA Metals	Soil Sample ID & Date Sampled						NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standards
	MW09-1		MW09-2		MW09-3		
	7/27/2009		7/27/2009		7/27/2009		
Arsenic	**33**		17	J	**42**		25
Barium	740		**1,400**		360		1,000
Cadmium	1.4	J	ND<5.0	U	1.9	J	5
Chromium	**85**		4.5	J	**68**		50
Lead	**58**		2.6	J	**95**		25
Mercury	0.12	J	0.42		0.26		0.7
Selenium	ND<30	U	ND<30	U	ND<30	U	10
Silver	ND<30	U	ND<30	U	ND<30	U	50

Notes:

TAL Metals analysis by United States Environmental Protection Agency (USEPA) Methods 6010 and 7471 (Mercury)
Bold type denotest that the compound was found to exceed its associated NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standard.
ND<30 U - Denotes the compound was not detected above the laboratory detection limit shown.
J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

Table 7

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Historical Data Table
Summary of Detected Volatile Organic Compounds (VOCs) in Soils
Test Results in micrograms per Kilogram (µg/Kg) or parts per billion (ppb)

Constituent	Sample ID				NYSDEC TAGM #4046: Soil Cleanup Objectives to Protect Groundwater Quality Cf_{40}	NYSDEC TAGM #4046: Recommended Soil Cleanup Objectives	Part 375 Restricted Use Soil Cleanup Objectives (SCOs) - Protection of Public Health - Commercial Use[1]
	BS-37 (6.0'-7.7')	BS-38 (6.0'-7.1')	BS-39 (6.0'-6.7')	TP-7 (1.0')			
	Remedial Investigation Proposed Port Underground Garage	Remedial Investigation Proposed Port Underground Garage	Remedial Investigation Proposed Port Underground Garage	LaBella PSCAI Report			
	11/10/2006	11/10/2006	11/10/2006	9/9/2008			
Acetone	ND<6 U	13 J	8 J	ND<40.1 U	80	200	500,000[2]
Carbon disulfide	ND<6 U	ND<5 U	1 J	ND<8.02 U	1,080	2,700	Not Listed
Methylene chloride	ND<6 U	16	13	ND<20.1 U	40	100	500,000[2]
m,p-Xylene	ND<6 U	ND<5 U	ND<5 U	11.4	480	1,200	500,000[2]

Notes:

VOC analysis by United States Environmental Protection Agency (USEPA) Method 8260B
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
(2) SCOs for Commerical Use were capped at a maximum value of 500,000 ppb

Table 8

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Historical Data Table
Summary of Detected Semivolatile Organic Compounds (SVOCs) in Soils
Test Results in micrograms per Kilogram (µg/Kg) or parts per billion (ppb)

Constituent	Soil Sample Identification						NYSDEC TAGM #4046: Soil Cleanup Objectives to Protect Groundwater Quality Cf_{40}	NYSDEC TAGM #4046: Recommended Soil Cleanup Objectives	Part 375 Restricted Use Soil Cleanup Objectives (SCOs) - Protection of Public Health - Commercial Use[1]
	TP-1 (0-2')	TP-1 (0-2')	BS-37 (6.0'-7.7')	BS-38 (6.0'-7.1')	BS-39 (6.0'-6.7')	TP-7 (1.0')			
	Bourne Test Pit	LaBella Phase II ESA	Remedial Investigation Proposed Port Underground Garage	Remedial Investigation Proposed Port Underground Garage	Remedial Investigation Proposed Port Underground Garage	LaBella PSCAI Report			
	1/11/2000	2/28/2000	11/10/2006	11/10/2006	11/10/2006	9/9/2008			
Anthracene	ND<305 U	495	ND<350 U	ND<350 U	ND<340 U	ND<372 U	20,000	50,000	500,000
Benzo (a) anthracene	ND<356 U	***835***	66 J	26 J	ND<340 U	ND<372 U	89.6	224	5,600
Benzo (a) pyrene	ND<356 U	***919***	ND<350 U	ND<350 U	ND<340 U	ND<372 U	24.4	61	1,000
Benzo (b) fluoranthene	ND<356 U	**954**	90 J	30 J	ND<340 U	ND<372 U	440	1,100	5,600
Benzo (g,h,i) perylene	ND<356 U	580	39 J	21 J	ND<340 U	ND<372 U	20,000	50,000	500,000
Benzo (k) fluoranthene	ND<356 U	***1,470***	ND<350 U	ND<350 U	ND<340 U	ND<372 U	440	1,100	56,000
Chrysene	ND<356 U	***856***	61 J	23 J	ND<340 U	ND<372 U	160	400	56,000
Fluoranthene	ND<356 U	1,900	94 J	30 J	ND<340 U	ND<372 U	20,000	50,000	500,000
Fluorene	ND<356 U	365	ND<350 U	ND<350 U	ND<340 U	ND<372 U	20,000	50,000	500,000
Indeno (1,2,3-cd) pyrene	ND<305 U	576	35 J	17 J	ND<340 U	ND<372 U	1,280	3,200	5,600
Naphthalene	ND<305 U	945	ND<350 U	ND<350 U	ND<340 U	11.4	5,200	13,000	500,000
Phenanthrene	ND<305 U	1,900	46 J	17 J	ND<340 U	ND<372 U	20,000	50,000	500,000
Pyrene	ND<305 U	1,530	84 J	29 J	ND<340 U	ND<372 U	20,000	50,000	500,000
Total SVOCs	None Detected	13,325	515	193	None Detected	11.4	*Not Applicable*	*500,000*	*Not Applicable*

Notes:

SVOC analysis by United States Environmental Protection Agency (USEPA) Method 8270C.
Bold type denotest that the compound was reported to exceed its associated NYSDEC TAGM 4046 SCO to Protect Groundwat
Quality with a Correction Factor of 40% (Cf40
Italicized type denotes that the compound was reported to exceed its associated NYSDEC TAGM 4046 Recommend Soil Cleanup Objecti
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
(2) SCOs for Commerical Use were capped at a maximum value of 500,000 ppb
ND<372 U - Denotes the compound was not detected above the reported laboratory detection limit shown.

Table 9

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Metals in Soils
Test Results in milligrams per Kilogram (mg/Kg) or parts per million (ppm)

USEPA TAL Metal	TP-1 (Slag Waste)	TP-1 (0-2')	TP-8 (2-3')	TP-9 (Red Slag)	TP-10 (3')	TP-15 (6-8')	HA-107 (0-2')	HA-116 (2-4')	BS-37 (6.0'-7.7')	BS-38 (6.0'-7.1')	BS-39 (6.0'-6.7')	TP-7 (1.0')	Part 375 Restricted Use Soil Cleanup Objectives (SCOs) Protection of Public Health - Commercial Use[1]	NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives	USEPA Eastern USA Background Levels
	Bourne Test Pit	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	Haley-Aldrich Borings	Haley-Aldrich Borings	Remedial Investigation Proposed Port Underground Garage	Remedial Investigation Proposed Port Underground Garage	Remedial Investigation Proposed Port Underground Garage	LaBella PSCAI Report			
	1/11/2000	2/28/2000	2/28/2000	2/28/2000	2/29/2000	2/29/2000	5/26/2000	6/2/2000	11/10/2006	11/10/2006	11/10/2006	9/9/2008			
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA	54,700 E	951	44,400 E	9,870	NA	SB	33,000
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	ND<147 U	ND<135 U	ND<151 U	ND<6.62 U	NA	SB	NA
Arsenic	0.875	3.1	***52***	ND<4.9 U	***51.10***	7.12	4.19	2.8	**36.3 N**	ND<18.0 U	ND<20.1 U	10.9	16	7.5 or SB	3.0-12
Barium	***511***	***909***	165	177	22.2	***657.0***	23.3	238	368 E	11.6 E	269 E	156.0	400	300 or SB	15-600
Beryllium	NA	NA	NA	NA	NA	NA	NA	NA	42.6 N,E	ND<1.8 U	4.2 E	*1.39*	590	0.16 or SB	0-1.75
Cadmium	*2.84*	ND<0.483 U	ND<0.584 U	ND<0.49 U	0.604	ND<0.382 U	ND<0.599 U	ND<0.39 U	***32.0 N,E***	ND<1.8 U	ND<2.0 U	*1.830*	9.3	1 or SB	0.1-1
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	251,000 E	342,000 E	202,000	54,300	NA	SB	130-35,000
Chromium	ND<1.96 U	5.9	*15.4*	3.04	3.72	*17.8*	8.60	3.75	*37.8 N,E*	ND<4.5 U	ND<5.0 U	*14.4*	400	10 or SB	1.5-40
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA	*31.8 N,E*	ND<4.5 U	ND<5.0 U	6.3	NA	30 or SB	25-60
Copper	NA	NA	NA	NA	NA	NA	NA	NA	*33.6 N*	ND<9.0 U	ND<10.1 U	17.9	270	25 or SB	1-50
Total Cyanide	ND<1.0 U	ND<1.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	**11,000**	27	**	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	*6,080 N,E*	*2,980 N,E*	*4,780 N,E*	*50,600*	NA	2,000 or SB	2,000-550,000
Lead	ND<9.8 U	38.6	62.8	ND<0.49 U	5.33	3.29	26.40	ND<0.389 U	35.4 N	11.4 N,E	ND<10.1 U	35.9	1,000	200-500	200-500
Magnesium	NA	NA	NA	NA	NA	NA	NA	NA	13,100 E	6,790 E	28,600 E	13,200	NA	SB	100-5,000
Manganese	NA	NA	NA	NA	NA	NA	NA	NA	4,460 E	150 E	422 E	816	10,000	SB	50-1,000
Mercury	ND<0.069 U	ND<0.074 U	ND<0.079 U	ND<0.098 U	*0.240*	ND<0.059 U	ND<0.066 U	ND<0.053 U	ND<0.020 U	*0.106*	ND<0.016 U	0.0145	2.8	0.1	0.001-0.2
Nickel	NA	NA	NA	NA	NA	NA	NA	NA	*32.5 N*	ND<4.5 U	ND<5.0 U	*14.3*	310	13 or SB	0.5-25
Potassium	NA	NA	NA	NA	NA	NA	NA	NA	4,260 N	ND<271 U	7,060 N,E	1,510	NA	SB	8,500-43,000
Selenium	ND<0.98 U	ND<4.83 U	1.15	ND<4.9 U	ND<5.03 U	ND<3.82 U	ND<0.375 U	*4.77*	*45.3 N*	ND<36.1 U	ND<40.2 U	ND<0.552 U	1,500	2 or SB	0.1-3.9
Silver	ND<0.98 U	ND<1.93 U	ND<2.34 U	ND<1.96 U	ND<2.01 U	ND<1.53 U	1.8	2.73	7.8 N	ND<4.5 U	ND<5.0 U	2.4	1,500	SB	NA
Sodium	NA	NA	NA	NA	NA	NA	NA	NA	3,080 N	ND<1,260 U	ND<1,410 U	489	NA	SB	6,000-8,000
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	ND<58.6 U	ND<54.1 U	ND<60.4 U	ND<0.662 U	NA	SB	NA
Vanadium	NA	NA	NA	NA	NA	NA	NA	NA	52.0 N,E	ND<4.5 U	9.800 N,E	25.5	NA	150 or SB	1-300
Zinc	NA	NA	NA	NA	NA	NA	NA	NA	*38.3 N*	*25.3 N*	ND<10.1 U	*111*	10,000	20 or SB	9-50

Notes:

TAL Metals analysis by United States Environmental Protection Agency (USEPA) Methods 6010 and 7471 (Mercury)
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
Bold Type denotes that the detected value exceeds its associated 6 NYCRR Part 375-6.8(b) SCO - Protection of Public Health - Commercial Use.
Italicized type denotes that the detected value exceeds its associated NYSDEC TAGM #4046 Recommended Soil Cleanup Objectiv
Highlighted type denotes that the compound exceeds its associated Eastern USA Background Leve
NA denotes value not available.
SB denotes to defer to the Eastern USA Background Level for the given metal.
** Denotes that 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.

Table 10

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Toxicity Characteristic Leaching Procedure (TCLP) on Metals in Soil
Test Results in milligrams per Kilogram (mg/Kg) or parts per million (ppm)

USEPA TCLP Metal	Soil Sample ID							NYSDEC TAGM #4046 Recommended Soil Cleanup Objectives	Eastern USA Background Levels	USEPA TCLP Regulatory Limits
	TP-8 (2-3')	TP-9 (Red Slag)	TP-10 (5')	TP-10 (13')	TP-15 (6-8')	TP-16 (12')	TP-17 (8')			
	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA	LaBella Phase II ESA			
	2/28/2000	2/28/2000	2/28/2000	2/28/2000	2/29/2000	2/20/2000	2/29/2000			
Arsenic	ND<0.025 U	ND<0.025 U	0.05	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	7.5 or SB	3.0-12	5
Barium	0.2	0.3	0.2	0.2	0.35	0.80	0.4	300 or SB	15-600	100
Cadmium	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	1 or SB	0.1-1	1
Chromium	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	10 or SB	1.5-40	5
Lead	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	0.045	ND<0.025 U	ND<0.025 U	200-500	200-500	5
Mercury	ND<0.002 U	ND<0.002 U	ND<0.002 U	ND<0.002 U	ND<0.002 U	ND<0.002 U	ND<0.002 U	0.1	0.001-0.2	0.2
Selenium	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	ND<0.025 U	2 or SB	0.1-3.9	1
Silver	ND<0.1 U	ND<0.1 U	ND<0.1 U	ND<0.1 U	ND<0.1 U	ND<0.1 U	ND<0.1 U	SB	NA	5

Notes:

TCLP Metals analysis by United States Environmental Protection Agency (USEPA) Methods 1311.
(1) Final Restricted Use SCOs as presented in 6 NYCRR Part 375-6.8(b) - Protection of Public Health - Commercial Use.
Bold Type denotes that the detected value exceeds its associated NYSDEC TAGM #4046 Recommended Soil Cleanup Objective.
Underlined Type denotes that the compound exceeds its associated Eastern USA Background Level.
Highlighted type denotes that the compound exceeds its associated USEPA TCLP Regulatory Limit.
ND<0.002 U - Denotes compound not detected above the laboratory method detection limit shown.
NA - Denotes value not available.
SB - Denotes to defer to the Eastern USA Background Level for the given metal.

Table 11

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Volatile Organic Compounds (VOCs) in Groundwater
Test Results in micrograms per Liter (µg/L) or parts per billion (ppb)

Constituent	Monitoring Well Identification		NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standards
	MW-BS39		
	11/15/2006		
Acetone	7.0	J	50
Carbon disulfide	1.2	J	50
Methylene chloride	1.7	B,J	50
Total VOCs	9.9		NA
Total TICs	None Detected		NA
Total VOCs + TICs	9.9		NA

Notes:

VOC analysis by United States Environmental Protection Agency (USEPA) Method 8260B

J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

B - Denotes that the analyte was found in the associated blank, as well as in the sample.

Table 12

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Semi Volatile Organic Compounds (SVOCs) in Groundwater
Test Results in micrograms per Liter (µg/L) or parts per billion (ppb)

Constituent	Sample ID & Date Sampled		NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standards
	MW-BS39		
	11/15/2006		
Total VOCs	None Detected		NA
Total TICs	35	B,J	NA
Total VOCs + TICs	35		NA

Notes:

SVOC analysis by United States Environmental Protection Agency (USEPA) Method 8270C.

J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

B - Denotes that the analyte was found in the associated blank, as well as in the sample.

Table 13

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Pesticides in Groundwater
Test Results in micrograms per Liter (µg/L) or parts per billion (ppb)

Constituent	Sample ID & Date Sampled	NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standards
	MW-BS39	
	11/15/2006	
delta-BHC	**0.050**	0.04
4,4'-DDT	0.049 J	0.20
Heptachlor	**0.097**	0.04

Notes:

Pesticides analysis by United States Environmental Protection Agency (USEPA) Method 8081B.
Bold type denotes that the compound was found to exceed its associated NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standard.
J - Denotes an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria, but the result is less than the Contract Required Quantitation Limit (CRQL), but greater than zero.

Table 14

Port Marina Predevelopment Site Conditions Gap Investigation
Port of Rochester
Rochester, New York

Summary of Detected Metals in Groundwater
Test Results in milligrams per Liter (mg/L) or parts per billion (ppb)

USEPA TAL Metals	Sample ID & Date Sampled		NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standards
	MW-BS39		
	11/15/2006		
Aluminum	487		Not Available
Antimony	ND<20.0	U	3
Arsenic	3.14		25
Barium	52.1		1,000
Beryllium	ND<2.0	U	1,100
Cadmium	ND<1.0	U	5
Calcium	89,400		Not Available
Chromium	ND<4.0	U	50
Cobalt	ND<4.0	U	Not Available
Copper	ND<10.0	U	200
Iron	**1,120**		300
Lead	3.30		25
Magnesium	7,660		35,000
Manganese	**370**		300
Mercury	ND<0.200	U	0.7
Nickel	ND<10.0	U	100
Potassium	38,500		Not Available
Selenium	ND<15.0	U	10
Silver	ND<3.0	U	50
Sodium	**403,000**		20,000
Thallium	ND<20.0	U	0.5
Vanadium	ND<5.0	U	Not Available
Zinc	27		2,000

Notes:

TAL Metals analysis by United States Environmental Protection Agency (USEPA) Methods 6010 and 7471 (Mercury)

Bold type denotest that the compound was found to exceed its associated NYSDEC T.O.G.S. 1.1.1 Ambient Water Quality Standard.

ND<5.0 U - Denotes the compound was not detected above the laboratory detection limit shown.

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

Appendix 1

Soil Boring Logs

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-1
SHEET 1 of 3
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 262.74' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/6/09 END DATE 7/6/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 262.74' Bottom Elevation: 217.00' Total Depth: 45.74')	PID READINGS	NOTES
1	39 15 10 11		1'-2'		0.9'	0.0'	Asphalt	0.0	
2						0.7'	Brown, mc SAND, little Gravel, moist, no odor		
3	6 6 9 32		2'-4'		1.0'	2.0'	As above, moist, no odor	0.0	
4							**FILL MATERIALS**		
						3.2'	Brown, mc SAND, (foundry sand), some cinders and coals, moist, no odor		
5	18 12 7 7		4'-6'		1.2'	4.0'	As above, moist, no odor	0.0	
6						5.9'	As above, some blue slag, moist, no odor		
7	12 9 9 10		6'-8'		1.3'	6.0'	As above, wet @ ~6.5' bgs, sulfur odor	0.0	
8							**BLUE SLAG**		
9	6 4 13 7		8'-'10'		0.7'	8.0'	Blue Slag, some cinders, coals, and foundry sand, wet, sulfur odor	0.4	
10									
11	3 3 3 2		10'-12'		0.5'	10.0'	Blue slag, saturated, sulfur odor	6.3	
12									
13	3 2 6 5		12'-14'		0.9'	12.0'	As above, saturated, no odor	2.8	
14									
15	7 11 14 10		14'-16'		1.1'	14.0'	As above, saturated, no odor	0.0	
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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-1 SHEET 2 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

RILLER Neal Short GROUND SURFACE ELEVATION 262.74' DATUM NAVD88

ABELLA REPRESENTATIVE: E. Dumrese START DATE 7/6/09 END DATE 7/6/09

/PE OF DRILL RIG:

JGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

OCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 262.74' Bottom Elevation: 217.00' Total Depth: 45.74'	PID READINGS	NOTES
17	17 10 7 5		16'-18'		1.0'	16.0'	As above, saturated, no odor **NATIVE SOIL**	0.0	
18 19	2 18 5 7		18'-20'		1.1'	18.0' 19.2'	Dark grey to black, SILT, some Clay, saturated, burnt wood odor Rotten wood, burnt, saturated, burnt odor	0.0	
20 21	3 3 5 7		20'-22'		1.0'	20.0'	Brown, peat moss, some organic matter/roots, saturated, no odor	0.0	
22 23 24	7 8 7 12		22'-24'		1.3'	22.0' 23.4'	As above, saturated, no odor Grey, SILT, some Clay and Gravel, wet, no odor	0.0	
5 26	NA NA 9 11		25'-27'		0.9'	25.0'	STANDARD SAMPLING BEGINS 25.0' - 46.2' Light brown, SILT, some mf Sand and Gravel, wet, no odor	0.0	
7 8	12 12 NA NA							NA	
29)	NA NA NA NA						**GLACIAL TILL**	NA	
31	8 8 13 6		30'-32'		1.4'	30.0'	Light grey, SILT and mc SAND, some Gravel, saturated, no odor	0.0	

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-1
SHEET 3 of 3
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 262.74' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/6/09 END DATE 7/6/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 262.74' Bottom Elevation: 217.00' Total Depth: 45.74')	PID READINGS	NOTES
32	NA							NA	
	NA								
	NA								
33	NA								
34	NA							NA	
	NA								
	NA								
35	NA								
36	12		35'-37'		0.7'	35.0'	As above, saturated, no odor	0.0	
	14								
	12								
37	22								
38	NA							NA	
	NA								
	NA								
39	NA								
40	NA		40-42'		1.6'	40.0'	As above, saturated, no odor	0.0	
	NA								
	24								
41	34								
42	36							NA	
	28								
	NA								
43	NA								
44	NA							NA	
	NA								
	NA								
45	NA								
46	38		45'-46'		0.7'	45.0'	As above, saturated, no odor	0.0	
	100/4						*Bedrock Refusal @ ~46.2' BGS*		

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

NOTES:
Bottom of boring @ 46.2' bgs
4.8' of fill materials (3.2'-8.0')
10.0' of blue slag (8.0'-18.0')
Native soil encountered @ 20.0' bgs
Groundwater @ ~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 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-2 SHEET 1 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 262.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 261.82' Bottom Elevation: 225.00' Total Depth: 36.82'	PID READINGS	NOTES
1	NA NA 5 7		1'-2'		0.8'	0.0' 1.0'	Asphalt (Augered to 1.0' bgs) **FILL MATERIALS** Black to grey, SILT, some mc Sand and Gravel, little cinders and coals, moist, r odor	0.0	
3	5 8 14 20		2'-4'		1.2'	2.0' 3.2'	As above, moist, no odor As above, little blue slag, moist, no odor	1.0	
5	5 10 16 18		4'-6'		1.0'	4.0' 5.7'	Reddish to brown, mc SAND (foundry sand), some cinders, moist, no odor Brown, mc SAND, little Silt, wet @ ~ 5.7' bgs, no odor	1.6	
7	7 6 7 7		6'-8'		0.3'	6.0'	**BLUE SLAG** Blue slag, wet, sulfur odor	0.0	
9	5 6 7 7		8-'10'		0.5'	8.0'	As above, wet, sulfur odor	0.0	
11	3 7 12 6		10'-12'		0.6'	10.0'	As above, saturated, sulfur odor	0.0	
13	5 6 5 3		12'-14'		0.7'	12.0'	As above, saturated, sulfur odor	0.0	
15	6 4 2 2		14'-16'		0.3'	14.0'	As above, saturated, sulfur odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-2 SHEET 2 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 262.82' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 261.82' Bottom Elevation: 225.00' Total Depth: 36.82'	PID READINGS	NOTES
17	7 12 14 15		16'-18'		0.7'	16.0'	As above, saturated, sulfur odor	0.0	
18 19	44 29 24 9		18'-20'		1.3'	18.0'	As above, saturated, sulfur odor	0.0	
20 21	12 6 6 7		20'-22'		1.5'	20.0' 21.5'	As above, saturated, sulfur odor **NATIVE SOIL** Brown, peat moss, some organic matter/roots, saturated, no odor	0.0	
22 23	5 6 6 5		22'-24'		2.0'	22.0'	As above, saturated, slight sulfur odor	0.0	
24 25	3 3 3 5		24'-26'		0.5'	24.0'	Brown, SILT and mc SAND, trace Clay, saturated, slight sulfur odor	0.0	
26 27	NA NA NA NA						STANDARD SAMPLING BEGINS 26.0' - 36.0'	NA	
28 29	NA NA 2 4		29'-31'		1.0'	29.0'	**GLACIAL TILL** Light brown, SILT, some mf Sand and angular Gravel, wet, no odor	0.0	
30 31	8 8 NA NA							NA	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-2 SHEET 3 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 262.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 261.82' Bottom Elevation: 225.00' Total Depth: 36.82'	PID READINGS	NOTES
33	NA NA NA NA							NA	
34	37 42 50 54/0.2		34'-36'		1.5'	34.0'	As above, very dense, saturated, no odor	0.0	
36							*Bottom @ 36.0' bgs*		
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									

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

NOTES:
Bottom of boring @ 36.0' bgs
5.0' of fill materials (1.0'-6.0')
15.5' of blue slag (6.0'-21.5')
Native soil encountered @ 21.5' bgs
Groundwater @ ~5.7' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-3 SHEET 1 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 260.32' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE					DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 260.32' Bottom Elevation: 225.00' Total Depth: 35.32'	PID READINGS	NOTES
	BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)				
1	NA NA 2 3		1'-2'		0.8'	0.0' 1.0'	Asphalt (Augered to 1.0' bgs) **FILL MATERIALS** Dark brown, SILT, some mf Sand, little cinders and coals, moist, no odor	0.0	
2 3	5 10 24 35		2'-4'		1.7'	2.0'	As above, some foundry sand, moist, no odor	0.0	
4 5	27 17 29 22		4'-6'		1.2'	4.0' 5.2'	As above, moist, no odor **BLUE SLAG** Blue slag, moist, sulfur odor	11.3	
6 7	11 18 11 8		6'-8'		1.1'	6.0'	As above, wet @~6.5' bgs, sulur odor	0.0	
8 9	6 10 12 7		8-'10'		0.9'	8.0'	As above, saturated, sulfur odor	17.5	
10 11	4 4 4 7		10'-12'		0.6'	10.0'	As above, saturated, sulfur odor	0.0	
12 13	6 5 4 8		12'-14'		0.5'	12.0'	As above, saturated, sulfur odor	0.0	
14 15	11 8 20		14'-16'		0.9'	14.0'	As above, saturated, sulfur odor	0.0	
16	20								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-3** SHEET 2 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 260.32' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 260.32' Bottom Elevation: 225.00' Total Depth: 35.32'	PID READINGS	NOTES
17	12 11		16'-18'		1.0'	16.0'	As above, saturated, sulfur odor	2.7	
18	14 15								
19	13 14		18'-20'		1.5'	18.0'	As above, saturated, sulfur odor	1.1	
20	15 20								
21	4 4		20'-22'		1.3'	20.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.0	
22	3 3					21.5'	Brown, peat moss, some organic matter/roots, saturated, no odor		
23	5 6		22'-24'		2.0'	22.0'	As above, saturated, slight sulfur odor	42.0	
24	6 5								
25	4 4		24-26'		1.5'	24.0'	As above, saturated, no odor	0.0	
26	4 NA						STANDARD SAMPLING BEGINS 26.0' - 36.0'		
27	NA NA							NA	
28	NA NA								
29	NA NA		29'-31'		1.7'	29.0'	Grey, SILT, little Clay and f Sand, saturated, no odor	0.0	
30	1 2								
31	2 3							NA	
	NA NA								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-3 SHEET 3 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 260.32' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 260.32' Bottom Elevation: 225.00' Total Depth: 35.32'	PID READINGS	NOTES
33	NA NA NA							NA	
34	NA						**GLACIAL TILL**		
35	1 1 15		34'-36'		1.5'	34.0'	Light brown, SILT, some mc Sand, little angular Gravel, saturated, no odor	0.0	
36	20								
37							*Bottom @ 36.0' bgs*		
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 36.0' bgs

4.2' of fill materials (1.0'-5.2')

16.3' of blue slag (5.2'-21.5')

Native soil encountered @ 21.5' bgs

Groundwater @ ~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 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-4** SHEET 1 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 261.78' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/25/09 END DATE 6/25/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 261.78' Bottom Elevation: 225.00' Total Depth: 36.78'	PID READINGS	NOTES
1	NA NA 9 10		1'-2'		0.7'	0.0' 1.0'	Asphalt - Not sampled (augered to 1.0' bgs) Brown to grey, mc SAND, SILT, and GRAVEL, moist, no odor	0.0	
2 3	6 10 12 31		2'-4'		1.3'	2.0'	As above, moist, no odor	0.0	
4 5	9 14 10 10		4'-6'		1.0'	4.0' 5.5'	As above, moist, no odor **FILL MATERIALS** As above, some cinders, coals, and bricks, moist, no odor	0.0	
6 7	16 15 8 8		6'-8'		1.2'	6.0' 7.0'	As above, moist, no odor As above, wet @ 7.0' bgs, no odor	0.0	
8 9 10	4 7 8 8		8-'10'		0.9'	8.0' 9.5'	As above, wet, no odor **BLUE SLAG** Blue slag, wet, slight sulfur odor	0.0	
11 12	4 5 6 5		10'-12'		0.4'	10.0'	As above, wet, sulfur odor	0.0	
13 14	4 5 6 6		12'-14'		0.5'	12.0'	As above, wet, sulfur odor	0.0	
15 16	25 5 7 7		14'-16'		0.3'	14.0'	As above, saturated, sulfur odor	0.0	

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.

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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-4
SHEET 2 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 261.78' DATUM
START DATE 6/25/09 END DATE 6/25/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 261.78' Bottom Elevation: 225.00' Total Depth: 36.78')	PID READINGS	NOTES
17	17 10 7 5		16'-18'		0.8'	16.0'	As above, saturated, no odor	0.0	
19	9 5 7 20		18'-20'		0.4'	18.0'	As above, saturated, no odor	0.0	
21	16 6 8 8		20'-22'		0.6'	20.0'	As above, saturated, no odor NATIVE SOIL	0.0	
23	2 4 4 5		22'-24'		1..3'	21.8' 22.0'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor As above, some grey mc Sand, saturated, slight sulfur odor	0.0	
25	2 3 3 5		24'-26'		0.4'	24.0'	As above, saturated, no odor	0.0	
27	NA NA NA NA						STANDARD SAMPLING BEGINS 26.0' - 37.0'	NA	
29	NA NA NA NA							NA	
31	3 4 4 4		30'-32'		1.0'	30.0'	Greyish to brown, SILT, little mf Sand and Clay, saturated, no odor	0.0	

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

NOTES:

ENERAL 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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Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-4
SHEET 3 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 261.78' DATUM
START DATE 6/25/09 END DATE 6/25/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 261.78' Bottom Elevation: 225.00' Total Depth: 36.78')	PID READINGS	NOTES
33	NA NA NA NA							NA	
34	NA NA								
35	NA NA 2 2		35'-37'		0.9'	35.0'	Light brown, SILT, little mf Sand, saturated, no odor	0.0	
36	2 2								
37	2 2						*Bottom @ 37.0' bgs*	NA	
38									
39								NA	
40									
41								NA	
42									
43								NA	
44									
45								NA	
46									
47								NA	

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

NOTES:
Bottom of boring @ 37.0' bgs
4.0' of fill materials (5.5'-9.5')
12.3' of blue slag (9.5'-21.8')
Native soil encountered @ 21.8' bgs
Groundwater @ ~7.0' 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.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-5
SHEET 1 of 3
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 255.25' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/25/09 END DATE 6/25/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 260.77' Bottom Elevation: 213.00' Total Depth: 47.77')	PID READINGS	NOTES
1	NA NA 10 10		1'-2'		0.8'	0.0' 1.0'	Asphalt - Not sampled (auguered to 1.0' bgs) RE-WORKED NATIVE Light brown, mc SAND and GRAVEL, dry no odor	0.0	
3	7 7 8 9		2'-4'		1.5'	2.0' 3.5'	As above, dry, no odor Grey to dark brown, SILT, little mf Sand, moist, no odor	0.0	
5	2 4 4 7		4'-6'		1.3'	4.0' 5.0'	As above, moist, no odor FILL MATERIALS Dark brown, SILT, some mf Sand and coals, cinders, ash, bricks, and blue slag	0.0	
7	8 10 4 4		6'-8'		1.0'	6.0' 7.5'	Red, crushed sandstone, moist, no odor Light brown, SILT, some mf Sand, moist, no odor	0.0	
9	2 3 4 5		8-'10'		0.3'	8.0'	SLAG Grey slag, wet @ ~8.0' bgs, slight sulfur odor	0.0	
11	3 1 2 1		10'-12'		0.5'	10.0'	Light brown to brown, SILT, some mc Sand and Gravel, saturated, no odor	0.0	
13	3 4 6 8		12'-14'		0.5'	12.0'	Blue slag, saturated, sulfur odor	0.0	
15	11 4 4 7		14'-16'		1.2'	14.0'	Mixed blue slag and dark brown, SILT and mf SAND, some gravel, saturated, n odor	0.0	

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.

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Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-5
SHEET 2 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 260.77' DATUM
START DATE 6/25/09 END DATE 6/25/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 260.77' Bottom Elevation: 213.00' Total Depth: 47.77')	PID READINGS	NOTES
17	3, 13, 12, 14		16'-18'		0.8'	16.0'	Blue slag, some brown, mc Sand, saturated, sulfur odor	0.0	
19	10, 13, 3, 11		18'-20'		0.7'	18.0'	As above, saturated, sulfur odor	0.0	
21	11, 14, 23, 10		20'-22'		1.0'	20.0'	As above, saturated, sulfur odor NATIVE SOIL	0.0	
23	6, 5, 7, 8		22'-24'		1.1'	22.0'	Grey, SILT, little mf Sand, saturated, slight sulfur odor	0.0	
						23.5'	Brown, peat moss, some organic matter/roots, saturated, slight sulfur odor		
25	4, 4, 4, 5		24'-26'		0.8'	24.0'	As above, saturated, no odor	0.0	
						25.0'	Grey to brown, SILT, some f Sand, saturated, no odor		
27	5, 6, 5, 6		26'-28'		1.3'	26.0'	As above, saturated, no odor	0.0	
29	NA, NA, NA, NA						STANDARD SAMPLING BEGINS 28.0' - 47.5'	NA	
31	2, 3, 4, 6		30'-32'		1.6'	30.0'	Grey, SILT, little Clay and f Sand, saturated, no odor	0.0	

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.

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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-5
SHEET 3 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 260.77' DATUM
START DATE 6/25/09 END DATE 6/25/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 260.77' Bottom Elevation: 213.00' Total Depth: 47.77')	PID READINGS	NOTES
33	NA							NA	
	NA								
	NA								
34	NA								
	NA							0.0	
35	NA			35'-37'	1.6'	35.0'	Light brown, SILT, little f Sand, saturated, no odor		
	1								
36	1								
	3							NA	
37	4								
	NA								
38	NA								
	NA							NA	
39	NA								
	NA								
40	NA						GLACIAL TILL		
	WR					40.0'	Light brown, SILT, little f Sand and Gravel, saturated, no odor	0.0	
41	WH		40'-42'		1.2'				
	1								
42	1								
	NA							NA	
43	NA								
	NA								
44	NA								
	NA								
45	NA		45'-47'		0.3'				
	12					45.0'	Black shale pieces, saturated, no odor	0.0	
46	21								
	22								
47	28		47'-47.5'		0.5'				
	50/.5					47.0'	As above, wet, no odor	0.0	
						47.5'	Red, weathered sandstone (bedrock) @ ~47.5' bgs		

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

NOTES:
Bottom of boring (bedrock) @ ~47.5' bgs
3.0' of fill materials (5.0'-8.0')
14.0' of blue slag (8.0'-22.0')
Native soil @ 22.0' bgs

WH = Weight of Hammer
WR = Weight of Rods

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-6** SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 257.65' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/24/09 END DATE 6/24/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 255.25' Bottom Elevation: 203.00' Total Depth: 52.25'	PID READINGS	NOTES
1	NA NA		0'-2'		0.8'	0.0'	Asphalt - Not sampled (augered to 1.0' bgs)	0.0	
2	14 19					1.0'	Light brown, m SAND and c GRAVEL, dry, no odor		
3	13 14		2'-4'		1.5'	2.0'	As above, moist, no odor	0.0	
4	8 6								
5	2 5		4'-6'		0.5'	4.0'	As above, wet @~8.5' bgs, no odor	0.0	
6	4 4								
7	3 3		6'-8'		0.6'	6.0'	As above, wet, no odor	0.0	
8	3 2								
9	2 2		8'-10'		0.2'	8.0'	As above, saturated, no odor	0.0	
10	1 2								
11	2 2		10'-12'		0.1'	10.0'	As above, saturated, no odor	0.0	
12	2 2								
13	5 3		12'-14'		0.6'	12.0'	As above, saturated, no odor **BLUE SLAG**	0.0	
14	5 3					13.8'	Blue slag, saturated, sulfur odor		
15	5 8		14'-16'		0.6'	14.0'	As above, saturated, sulfur odor	0.0	
16	8								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-6** SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 257.65' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/24/09 END DATE 6/24/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 255.25' Bottom Elevation: 203.00' Total Depth: 52.25'	PID READINGS	NOTES
17	9 3 4		16'-18'		0.9'	16.0'	As above, saturated, sulfur odor	0.0	
18	9								
19	5 5 3		18'-20'		1.0'	18.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.0	
20	3					19.7'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
21	5 2 3		20'-22'		1.2'	20.0'	As above, saturated, slight sulfur odor	0.0	
22	3								
23	2 2 3		22'-24'		2.0'	22.0'	As above, some dark brown, SILT, saturated, no odor	0.0	
24	3					23.0'	Dark brown, SILT, trace Clay, saturated, no odor		
25	NA NA 2		25'-27'		1.9'		STANDARD SAMPLING BEGINS 24.0' - 32.0'	0.0	
26	2					25.0'	As above, saturated, no odor		
27	2 NA							NA	
28	NA								
29	NA NA							NA	
30	NA								
31	WHH 1 3		30'-32'		1.9'	30.0'	Dark brown, SILT, little Clay, saturated, no odor	0.0	
	4					31.5' 31.8'	Wood fragments Dark brown, SILT, little Clay, saturated, no odor	0.0	

LEGEND

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

NOTES:

Bottom of boring @ 32.0' bgs
5.9' of Blue Slag (13.8'-19.7' bgs)
Native soil encountered @ 19.7' bgs

WH = Weight of Hammer
Groundwater @ ~5.5' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-7** SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 256.89' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/24/09 END DATE 6/24/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 256.89' Bottom Elevation: 225.00' Total Depth: 31.89'	PID READINGS	NOTES
1	1 3 11 6		0'-2'		1.5'	0.0' 0.3' 1.3' 1.5'	Topsoil - Grass, roots - not sampled Brown, SILT, some mf Sand, moist, no odor Some black asphalt pieces Light brown, SILT, some mf Sand, moist, no odor	0.0	
3	15 9 9 8		2'-4'		0.7'	2.0' 2.2'	As above, moist, no odor **FILL MATERIALS** Brown, SILT, little mf Sand and blue slag, coals, cinders, and brick, moist, no od **BLUE SLAG**	0.0	
5	6 6 5 6		4'-6'		0.2'	4.0'	Blue slag, moist, sulfur odor	0.0	
7	4 2 2 4		6'-8'		0.5'	6.0'	Brown, SILT and mc SAND, some blue slag, coals and cinders, moist, no odor	0.0	
9	10 9 13 10		8'-10'		0.0'	8.0'	No Recovery	NA	
11	9 7 2 2		10'-12'		1.3'	10.0' 11.3'	Blue Slag, saturated @~10.0' bgs, no odor **NATIVE SOIL** Dark brown, SILT, some organic matter, little f Sand, wet, no odor	0.0	
13	4 4 5 4		12'-14'		2.0'	12.0' 13.2'	Grey, SILT and mf SAND, little Gravel, saturated, no odor Grey to red, mc SAND, some brown, SILT, saturated, no odor	0.0	
15	1 3 3 4		14'-16'		1.2'	14.0'	Light brown, SILT, some mf Sand, saturated, no odor, some iron staining	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-7** SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 256.89' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/24/09 END DATE 6/24/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 256.89' Bottom Elevation: 225.00' Total Depth: 31.89'	PID READINGS	NOTES
17	NA NA NA NA						STANDARD SAMPLING BEGINS 16.0' - 31.0'	NA	
19	NA NA 19 20		19'-21'		1.2'	19.0'	As above, saturated, no odor	0.0	
21	50/.4 NA NA							NA	
23	NA NA NA NA							NA	
25	11 4 50/.2		24'-26'		2.0'	24.0'	Light grey to brown, SILT, some mf Sand and Gravel, wet, no odor	0.0	
27	NA NA NA NA							NA	
29	NA NA 8 36		29'-31'		2.0'	29.0'	As above, wet, no odor	0.0	
31	50/.4						*Bottom @ 31.0' bgs*	0.0	

LEGEND

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

NOTES:

1.8' of Fill Materials including Blue Slag (2.2'-4.0' bgs)
7.3' of Blue Slag (4.0'-11.3' bgs)
Native Soil @~11.3' bgs
Groundwater @~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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-8** SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 256.00' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/24/09 END DATE 6/24/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 256.00' Bottom Elevation: 225.00' Total Depth: 31.00'	PID READINGS	NOTES
1	NA NA 19 15		0'-2'		0.9'	0.0' 1.0'	Asphalt - not sampled (auguered to 1.0' bgs) Brown, mc SAND and GRAVEL, dry, no odor	0.0	
3	17 11 6 6		2'-4'		1.5'	2.0' 3.3'	As above, dry, no odor Light brown, SILT, some mf Sand, moist, no odor, trace brick	0.0	
5	3 2 72 50/.1		4'-6'		0.9'	4.0' 5.8'	As above, wet @~5.5' bgs **BLUE SLAG** Blue slag, wet, sulfur odor	0.0	
7	7 14 11 7		6'-8'		1.5'	6.0'	Blue slag and light brown, mf SAND, wet, sulfur odor	0.0	
9	5 11 16 15		8'-10'		1.5'	8.0'	As above, some white ash, saturated, sulfur odor	0.0	
11	10 24 25 30		10'-12'		1.4'	10.0' 11.7'	As above, saturated, sulfur odor Blue slag, saturated, sulfur odor	0.0	
13	12 18 5 6		12'-14'		1.0'	12.0'	As above, saturated, sulfur odor	0.0	
15	3 3 3 3		14'-16'		0.0'	14.0'	No Recovery	NA	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-8** SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 256.00' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/24/09 END DATE 6/24/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 256.00' Bottom Elevation: 225.00' Total Depth: 31.00'	PID READINGS	NOTES
17	3 5 2 3		16'-18'		0.3'	16.0'	As above, saturated, sulfur odor	0.0	
19	7 3 7 6		18'-20'		0.7'	18.0' 19.3'	As above, saturated, sulfur odor Wood fragments, saturated, sulfur odor	0.0	
21	6 3 3 4		20'-22'		1.2'	20.0' 21.3'	As above, saturated, sulfur odor **NATIVE SOIL** Brown, peat moss, some organic matter/roots, saturated, sulfur odor	0.0	
23	23 2 3 3		22'-24'		1.8'	22.0'	Dark brown, SILT, little mf Sand, trace Clay, saturated, no odor	0.0	
25	2 3 2 4		24'-26'		2.0'	24.0'	As above, saturated, no odor	0.0	
27	NA NA NA NA						STANDARD SAMPLING BEGINS 26.0' - 31.0'	NA	
29	NA NA 1 3		29'-31'		2.0'	29.0'	Dark brown, SILT, trace f Sand and Clay, saturated, no odor	0.0	
31	3 4						*Bottom @ 31.0' bgs*	0.0	

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

NOTES:
15.5' of Blue Slag (5.8'-21.3' bgs)
Native Soil @~21.3' bgs
Groundwater @~5.5' 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.

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300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-9
SHEET 1 of 3
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese
BORING LOCATION
GROUND SURFACE ELEVATION 255.25' DATUM NAVD88
START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 255.25' Bottom Elevation: 203.00' Total Depth: 52.25')	PID READINGS	NOTES
1	2, 9, 2, 12		1'-2'		1.6'	0.0'	Topsoil - Not sampled	0.0	
							BLUE SLAG & FILL MATERIALS		
2						0.6'	Brown, SILT, some mf Sand and blue slag, moist, sulfur odor		
3	9, 14, 11, 9		2'-4'		1.8'	2.0'	Brown, SILT, little mc Sand some cinders and brick, moist, no odor	0.0	
4							**FOUNDRY SAND**		
5	6, 7, 6, 5		4'-6'		1.2'	4.0'	Assorted cinders and bricks within foundry sand	0.0	
6						5.5'	Ash and blue slag, moist, sulfur odor		
7	17, 50/2		6'-8'		0.8'	6.0'	Crushed rock, some cinders, moist, no odor	0.0	
8							**BLUE SLAG & FILL MATERIALS**		
9	17, 19, 9, 9		8-'10'		0.9'	8.0'	Blue slag, saturated, sulfur odor	0.0	
10									
11	7, 8, 3, 10		10'-12'		0.4'	10.0'	As above, saturated, sulfur odor	0.0	
12									
13	12, 15, 10, 5		12'-14'		0.6'	12.0'	As above, little crushed black slag, saturated sulfur odor	0.0	
14									
15	1, 2, 5		14'-16'		1.2'	14.0'	As above, saturated, sulfur odor	0.0	
							NATIVE SOIL		
						14.3'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
16	5					15.5'	Grey, mc SAND, saturated, no odor		

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-9
SHEET 2 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 254.51' DATUM
START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 255.25' Bottom Elevation: 203.00' Total Depth: 52.25')	PID READINGS	NOTES
17	5		16'-18'		1.9'	16.0'	Grey, mc SAND, saturated, no odor	0.0	
	7								
	5								
18	4								
19	1		18'-20'		1.6'	18.0'	As above, saturated, no odor	0.0	
	2								
	4					18.5'	Grey, SILT and peat moss, wet, no odor		
20	4						STANDARD SAMPLING BEGINS 20.0' - 50.0'		
21	NA		20'-22'					NA	
	NA								
	NA								
22	NA								
23	NA		22'-24'					NA	
	NA								
	NA								
24	NA								
25	NA		24'-26'					NA	
	WH					25.0'	Grey, SILT, little f Sand and peat moss, saturated, no odor	0.0	
26	3								
27	3		26'-28'					NA	
	7								
	NA								
28	NA								
29	NA		28'-30'					NA	
	NA								
	NA								
30	NA								
31	1		30'-32'			30.0'	As above, saturated, no odor	0.0	
	1								
	3								
	3								

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

NOTES:

ENERAL 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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-9
SHEET 3 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.51' DATUM
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 255.25' Bottom Elevation: 203.00' Total Depth: 52.25')	PID READINGS	NOTES
33	NA		32'-34'					NA	
	NA								
	NA								
34	NA								
	NA		34'-36'					NA	
35	NA								
	3					35.0'	Greyish brown, SILT, trace f Sand and Clay, saturated, no odor	0.0	
36	4								
	3		36'-38'					NA	
37	4								
	NA								
38	NA								
	NA		38'-40'					NA	
39	NA								
	NA								
40	NA								
	WR		40'-42'			40.0'	As above, saturated, no odor	0.0	
41	WR								
	1								
42	1								
	NA		42'-44'					NA	
43	NA								
	NA								
44	NA								
	NA		44'-46'					NA	
45	NA								
	WR					45.0'	Reddish brown, mc SAND, some Silt and c Gravel, saturated, no odor	0.0	
46	2								
	3		46'-48'					NA	
47	4								
	NA					48.0'	Weathered bedrock encountered @ ~48.0' bgs *		
	NA					50.0'	Compotent bedrock encountered @ ~50.0' bgs *		

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

NOTES:
Bottom of boring @ 50.0' bgs
7.7' of fill materials including blue slag (0.6'-8.
Native soil encountered @ 14.3' bgs
6.3' of blue slag (8.0'-14.3')
* Unable to visually confirm depths to bedrock due to equipment complications.

WH = Weight of Hammer
WR = Weight of Rods

ENERAL 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-10** SHEET 1 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 260.07' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 260.07' Bottom Elevation: 216.00' Total Depth: 44.07'	PID READINGS	NOTES
1	4		1'-2'		1.5'	0.0'	**FILL MATERIAL** Black to brown, mc SAND and Coals, Cinders, Brick, moist, no odor	0.0	
2	4 4 5						**NATIVE SOIL**		
3	3		2'-4'		1.5'	2.0'	Light brown, SILT, little f Sand, moist, no odor	0.0	
4	4 4 5								
5	1		4'-6'		1.1'	4.0'	As above, moist, no odor, some iron staining	0.0	
6	3 4 4								
7	2		6'-8'		1.4'	6.0'	Light brown, SILT, little f Sand, trace Clay, moist, no odor, some iron staining	0.0	
8	3 4 5					7.0'	As above, wet @ ~7.7' bgs		
9	1		8-'10'		1.0'	8.0'	As above, wet, no odor	0.0	
10	3 4 4						**STANDARD SAMPLING BEGINS 10.0' - 46.7'**		
11	NA							0.0	
12	NA NA NA								
13	NA		13'-15'		0.4'			0.0	
14	NA 3 8					13.0'	Light brown, SILT, some Clay, little mf Sand, wet, no odor		
15	11							0.0	
16	14 NA NA								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-10 SHEET 2 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 260.07' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 260.07' Bottom Elevation: 216.00' Total Depth: 44.07'	PID READINGS	NOTES
17	NA							NA	
	NA								
	NA								
18	NA						**GLACIAL TILL**		
	2					18.0'	Light brown, SILT, little mf Sand and angular Gravel, saturated, no odor	0.0	
19	10		18'-20'		1.0'				
	13								
20	46					19.8'	Some weathered reddish to brown bedrock (sandstone), wet no odor		
	NA							NA	
21	NA								
	NA								
22	NA								
	NA								
23	NA		23'-25'		1.8'	23.0'	Light brown, mc SAND and SILT, little Clay and angular Gravel, saturated, no o	0.0	
	11								
24	19								
	19							NA	
25	17								
	NA								
26	NA								
	NA							NA	
27	NA								
	NA								
28	NA								
	3					28.0'	Greyish to light brown, SILT, some mc Sand and Gravel, saturated, no odor	0.0	
29	8		28'-30'		1.7'				
	12								
30	23								
	NA							NA	
31	NA								
	NA								
	NA								

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-10
SHEET 3 of 3
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 260.07' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 260.07' Bottom Elevation: 216.00' Total Depth: 44.07')	PID READINGS	NOTES
33	NA, NA, 12, 22		33'35"		1.2'	33.0'	As above, saturated, no odor	0.0	
34									
35	25, 26, NA, NA							NA	
36									
37	NA, NA, NA, NA							NA	
38									
39	14, 22, 32, 49		38'-40'		1.6'	38.0'	As above, saturated, no odor	0.0	
40									
41	NA, NA, NA, NA							NA	
42									
43	NA, NA, 19, 40		43'-45'		2.0'	43.0'	Grey, SILT, some mc Sand, saturated, no odor	0.0	
44									
45	50/24		45'-47'		0.6'	45.0'	Reddish to brown, SILT and mc SAND, some Gravel, saturated, no odor	0.0	
46						46.5'	Weathered reddish bedrock (sandstone), moist, no odor	0.0	
47							*Bedrock Refusal @ 46.7' bgs*		

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

NOTES:
Bottom of boring (bedrock) @ ~46.7' bgs
2.0' of fill materials (0.0'-2.0')
Native soil @ 2.0' bgs
Groundwater @ ~7.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-11 SHEET 1 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 258.76' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 258.76' Bottom Elevation: 225.00' Total Depth: 33.76'	PID READINGS	NOTES
1	NA NA		1'-2'		0.9'	0.0' 1.0'	Asphalt (augered to 1.0' bgs) **FILL MATERIALS** Dark brown, SILT, some mf Sand, Gravel, blue slag, cinders, ash, and coals moist, no odor	0.1	
2	7 8								
3	8 7		2'-4'		1.6'	2.0'	As above, moist, no odor	0.0	
4	8 20						**BLUE SLAG**		
5	3 9		4'-6'		0.6'	4.0'	Blue slag, moist, sulfur odor	0.0	
6	17 9								
7	2 2		6'-8'		0.8'	6.0' 6.9'	As above, moist, sulfur odor **RE-WORKED NATIVE (POSSIBLY BACKFILL)** Light brown, mc SAND, little Silt, moist, slight sulfur odor	1.1	
8	2 2								
9	2 2		8-'10'		1.7'	8.0'	As above, moist, no odor	0.7	
10	1 2								
11	2 2		10'-12'		1.3'	10.0' 11.0'	As above, moist, no odor As above, wet @ ~11.0' bgs	0.0	
12	1					11.6'	Light brown, SILT, some mf Sand, wet, no odor		
13	2 1		12'-14'		2.0'	12.0'	As above, saturated, no odor	0.0	
14	2 1						**NATIVE SOIL**		
15	WH WH		14'-16'		1.8'	14.0' 15.2'	Grey to brown, SILT and CLAY, trace f Sand, saturated, no odor Grey, mc SAND, some Silt, trace Clay, saturated, no odor	0.0	
16	1 1								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-11 SHEET 2 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 258.76' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 258.76' Bottom Elevation: 225.00' Total Depth: 33.76'	PID READINGS	NOTES
17	2 2 2 3		16'-18'		2.0'	16.0' 17.3'	As above, saturated, no odor Brown, peat moss, some organic matter/roots, saturated, sulfur odor	0.0	
19	3 2 2 1		18'-20'		1.5'	18.0'	As above, wet, no odor	0.0	
21	NA NA NA NA						STANDARD SAMPLING BEGINS 20.0' - 34.0'	NA	
23	NA NA 2 3		23'-25'		1.5'	23.0'	Grey to brown, mc SAND, some Silt, little c Gravel, wet, no odor	0.0	
25	4 6 NA NA							NA	
27	NA NA NA NA							NA	
29	14 13 16 22		28'-30'		0.1'	28.0'	As above, saturated, no odor	0.0	
31	NA NA NA NA							NA	

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-11
SHEET 3 of 3
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 258.76' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

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
33	NA NA 22 35		33'-35'		1.3'	33.0'	**GLACIAL TILL** Light brown to grey, mc SAND and SILT, little c Gravel, saturated, no odor	0.0	
34	36 39								
35							*Bottom @ 34.0' bgs*		
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									

Ground Elevation: 258.76' Bottom Elevation: 225.00' Total Depth: 33.76'

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

NOTES:
Bottom of boring @ 34.0' bgs
3.0' of fill materials (1.0'-4.0' bgs)
2.9' of blue slag (4.0'-6.9' bgs)
7.1' of Re-worked Native Soil (possibly backfill) (6.9'-14.0' bgs)
Native Soil @ 14.0' bgs
Groundwater @ ~ 11.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-12** SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 257.55' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 257.55' Bottom Elevation: 225.00' Total Depth: 32.55'	PID READINGS	NOTES
1	NA NA 15 16		1'-2'		0.8'	0.0' 1.0'	Asphalt - Not Sampled (Augered to 1.0' bgs) **FILL MATERIALS** Brown, SILT and mc SAND, little cinders and coals, moist, no odor	0.0	
2 3	23 15 12 12		2'-4'		1.7'	2.0' 2.5'	Crushed brick **RE-WORKED NATIVE SOIL** Light brown, mc SAND, trace Silt, moist, no odor	0.0	
4 5	3 3 3 3		4'-6'		1.4'	4.0'	As above, moist, no odor	0.0	
6 7	2 2 2 3		6'-8'		1.0'	6.0'	As above, moist, no odor	0.0	
8 9	2 3 4 5		8-'10'		0.8'	8.0'	As above, wet @~8.0' bgs, no odor	0.0	
10 11	2 3 2 2		10'-12'		0.9'	10.0'	Brown, SILT and mc SAND, little c Gravel, wet, no odor	0.0	
12 13	1 1 2 3		12'-14'		2.0'	12.0' 13.5'	As above, saturated, no odor Grey, mc SAND, little Silt, saturated, no odor	0.0	
14 15	2 1 1 1		14'-16'		1.5'	14.0'	As above, saturated, no odor	0.0	
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.

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300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-12
SHEET 2 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 257.55' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/7/09 END DATE 7/7/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 257.55' Bottom Elevation: 225.00' Total Depth: 32.55')	PID READINGS	NOTES
17	1 2 2		16'-18'		2.0'	16.0'	As above, saturated, no odor	0.0	
18	2								
19	1 3 3		18'-20'		1.5'	18.0'	As above, saturated, no odor **NATIVE SOIL**	0.0	
20	3					18.5'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
21	1 2 3		20'-22'		2.0'	20.0'	As above, wet, no odor Dark brown to grey, SILT, trace f Sand and Clay, wet, no odor	0.0	
22	3					20.7'			
23	4 4 5		22'-24'		1.7'	22.0'	As above, wet, no odor	0.0	
24	6								
25	NA NA 2		25'-27'		1.8'		STANDARD SAMPLING BEGINS 25.0' - 32.0'	0.0	
26	3					25.0'	As above, wet, no odor		
27	4 4 NA							NA	
28	NA								
29	NA NA NA							NA	
30	NA						**GLACIAL TILL**		
31	WR 1 1 2		30'-32'		2.0'	30.0'	Grey, SILT, little f Sand and angular Gravel, saturated, no odor	0.0	

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

NOTES:
Bottom of boring @ 32.0' bgs
1.5' of fill materials from (1.0'-2.5')
16.0' of re-worked native soil from 2.5'-18.5' bgs
Native soil @ 18.5' bgs
Groundwater @ ~8.0' bgs
WR = Weight of Rods

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-13/MW09-2
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 255.74' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 255.74' Bottom Elevation: 225.00' Total Depth: 30.74')	PID READINGS	NOTES
1	NA NA		1'-2'		0.7'	0.0'	Asphalt - Not Sampled (Augered to 1.0' bgs) **FILL MATERIALS**	0.0	
2	8 7					1.0'	Dark brown, SILT, little mf Sand, coals, and cinders, moist, no odor		
3	8 12		2'-4'		1.7'	2.0'	As above, moist, no odor **RE-WORKED NATIVE SOIL (POSSIBLY BACKFILL)**	0.0	
4	14 14					3.3'	Light brown, mc SAND, little Silt, moist, no odor		
5	12 4		4'-6'		1.4'	4.0'	As above, moist, no odor	0.0	
6	3 3								
7	4 5		6'-8'		0.0'	6.0'	No Recovery	NA	
8	4 4								
9	2 3		8-'10'		<0.1'	8.0'	AS above, wet @~8.0' bgs, no odor	0.0	
10	4 3								
11	1 2		10'-12'		1.4'	10.0'	Grey, mc SAND, saturated, no odor	0.0	
12	2 2								
13	1 2		12'-14'		2.0'	12.0'	As above, saturated, no odor	0.0	
14	2 3								
15	1 1		14'-16'		1.0'	14.0'	Reddish to brown, SILT, trace f Sand, saturated, no odor **BLUE SLAG**	0.0	
16	5 8					15.6'	Blue slag, some black organic staining, sulfur odor, saturated		

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-13/MW09-2 SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 255.74' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 255.74' Bottom Elevation: 225.00' Total Depth: 30.74'	PID READINGS	NOTES
17	10 18 8 3		16'-18'		0.5'	16.0'	As above, saturated, no odor	1.1	
18 19	2 3 3 4		18'-20'		0.2'	18.0'	As above, saturated, no odor	0.9	
20 21	2 3 3 4		20'-22'		1.3'	20.0' 21.0'	As above, saturated, no odor **NATIVE SOIL** Brown, peat moss, some organic matter/roots, saturated, sulfur odor	0.0	
22 23	4 4 3 3		22'-24'		2.0'	22.0' 23.2'	As above, wet, slight sulfur odor Greyish to brown, SILT, trace f Sand and Clay, wet, no odor	0.0	
24 25	2 2 2 3		24'-26'		2.0'	24.0'	As above, saturated, no odor	0.0	
26 27	NA NA NA NA						STANDARD SAMPLING BEGINS 26.0' - 31.0'	NA	
28 29	NA NA 1 3		29'-31'		1.7'	29.0'	Grey, SILT and CLAY, saturated, no odor	0.0	
30 31	4 4							NA	

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: Monitoring well MW09-2 installed to 22.0' bgs, with 15.0' of screen from 7.0'-22.0' 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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-14
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
BELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 257.16' DATUM NAVD88
START DATE 6/22/09 END DATE 6/22/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

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 (Ground Elevation: 257.16' Bottom Elevation: 225.00' Total Depth: 32.16')	PID READINGS	NOTES
1	NA NA 8 7		1'-2'		1.2'	0.0' 1.0'	Asphalt - Not Sampled (Augered to 1.0' bgs) **RE-WORKED NATIVE SOIL** Brown, SILT, and c GRAVEL, little f Sand, moist, no odor	0.0	
2 3 4	8 26 27 30		2'-4'		1.0'	2.0'	As above, some crushed sandstone, moist, no odor	0.0	
5 6	19 7 5 4		4'-6'		1.1'	4.0' 5.1'	As above, moist, no odor Light brown, mf SAND, moist, no odor	0.0	
7 8	4 3 3 3		6'-8'		1.6'	6.0' 7.0'	Light brown, mc SAND, moist, no odor Light brown to dark brown, mc SAND, wet @ 7.0' bgs, no odor	0.0	
9 10	2 3 2 3		8-'10'		1.2'	8.0'	As above, saturated, no odor	0.0	
11 12	3 2 2 3		10'-12'		1.9'	10.0'	As above, no odor	0.0	
13 14	1 1 2 5		12'-14'		2.0'	12.0' 13.7'	As above, no odor Dark brown, c SAND, saturated, no odor	0.0	
15 16	5 5 6 7		14'-16'		0.9'	14.0' 15.6'	As above, saturated, no odor **BLUE SLAG** Blue slag, saturated, sulfur odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-14** SHEET 2 OF 2 JOB # 209447 CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 257.16' DATUM
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/22/09 END DATE 6/22/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 257.16' Bottom Elevation: 225.00' Total Depth: 32.16'	PID READINGS	NOTES
17	19 22 30 2		16'-18'		1.4'	16.0' 17.8'	As above, saturated, sulfur odor **NATIVE SOIL** Dark brown to black, mc SAND, saturated, sulfur odor	0.0	
19	2 2 3 4		18'-20'		0.9'	18.0' 19.6'	As above, saturated, sulfur odor Brown, peat moss, some organic matter/roots, saturated, sulfur odor	0.0	
21	2 3 3 4		20'-22'		0.1'	20.0'	As above, saturated, sulfur odor	0.0	
23	3 3 4 4		22'-24'		2.0'	22.0' 23.2'	As above, saturated, no odor Grey, mf SAND and SILT, wet, no odor	0.0	
25	NA NA 2 2		24'-26'		1.3'	25.0'	STANDARD SAMPLING BEGINS 24.0' - 32.0' Grey to brown, SILT, some mf Sand, trace Clay, wet, no odor	0.0	
27	3 3 NA NA		26'-28'		NA			NA	
29	NA NA NA NA		28'-30'		NA			NA	
31	1 1 2 2		30'-32'		1.7'	30.0'	Grey, SILT, little Clay and f Sand, wet, no odor	0.0	

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

NOTES:
Bottom of boring @ 32.0' bgs
2.2' of blue slag (15.6'-17.8')

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-15
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
RILLER Neal Short
BELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 257.45' DATUM NAVD88
START DATE 6/22/09 END DATE 6/22/09

PE OF DRILL RIG:
JGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
OCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 257.45' Bottom Elevation: 225.00' Total Depth: 24.45')	PID READINGS	NOTES
1	NA NA		1'-2'		0.8'	0.0'	Asphalt - Not sampled (Augered to 1.0' bgs) **FILL MATERIALS**	0.0	
2	8 8					1.0'	Brown, SILT, little mf Sand and fill materials (i.e., coals, cinders, brick), moist n		
3	8 17		2'-4'		1.3'	2.0'	As above, little blue slag fragments, moist, no odor	0.0	
4	20 16								
5	19 32		4'-6'		1.0'	4.0'	Brown, SILT, little mf Sand and blue slag, moist, sulfur odor	0.0	
6	25 9								
7	8 5		6'-8'		0.8'	6.0'	Dark brown, c SAND, little blue slag, moist, sulfur odor	0.0	
8	8 13								
9	4 6		8-'10'		0.0'	8.0'	No Recovery	0.0	
10	4 14								
11	5 11		10'-12'		0.1'	10.0'	Large blue slag chunks, wet @ 10.0' bgs, no odor	0.0	
12	11 11								
13	25 33		12'-14'		1.5'	12.0'	Brown, c SAND, little blue slag, saturated, sulfur odor **BLUE SLAG**	0.0	
14	43 25					12.4'	Blue slag, saturated, sulfur odor		
15	5 40		14'-16'		1.5'	14.0'	As above, saturated, sulfur odor	0.0	
16	24 49								

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

NOTES:

NERAL 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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-15
SHEET 2 OF 2
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 257.16' DATUM
START DATE 6/22/09 END DATE 6/22/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 257.45' Bottom Elevation: 225.00' Total Depth: 24.45')	PID READINGS	NOTES
17	16 15 14 13		16'-18'		1.0'	16.0'	As above, blue slag, saturated, sulfur odor	0.0	
18 19	7 5 3 5		18'-20'		1.4'	18.0'	As above, saturated, sulfur odor	0.0	
20						19.7'	**NATIVE SOIL** Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
21 2	5 4 3 4		20'-22'		0.0'	20.0'	No Recovery	0.0	
23 24	4 4 4 4		22'-24'		2.0'	22.0'	As above, wet, sulfur odor	0.0	
						23.7'	Grey, SILT and mf SAND, wet, no odor		
5 26	NA NA 2 2		24'-26'		1.4'	25.0'	STANDARD SAMPLING BEGINS 24.0' - 32.0' Brown to grey, SILT, some mf Sand and peat moss, wet, no odor	0.0	
27	2 3 NA NA		26'-28'		NA			NA	
29	NA NA NA NA		28'-30'		NA			NA	
	2 3 6 6		30'-32'		2.0'	30.0'	Grey, SILT, little mf Sand, wet, no odor	0.0	

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

NOTES:
Bottom of boring @ 32.0' bgs
7.3' of blue slag (12.4'-19.7')
11.4' of fill materials (1.0'-12.4')

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.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-16a
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese
BORING LOCATION
GROUND SURFACE ELEVATION 257.23' DATUM NAVD88
START DATE 6/22/09 END DATE 6/22/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 257.23' Bottom Elevation: 225.00' Total Depth: 32.23')	PID READINGS	NOTES
1	NA		1'-2'		NA	0.0'	Asphalt - Not sampled (Augered to 2.0' bgs)	NA	
2	NA						**FILL MATERIALS**		
3	2		2'-4'		2.0'	2.0'	Blue slag, mc Sand, sulfur odor, moist	0.0	
	12					2.2'	As above, sulfur odor, moist		
4	18					2.8'	Light brown, mf SAND, little fill materials (i.e., brick and coals), no odor		
5	13		4'-6'		0.6'		**BLUE SLAG**		
6	8					4.0'	Crushed blue slag fragments, some brown c Sand, saturated @ 4.0' bgs, sulfur	0.0	
7	7		6'-8'		0.6'	6.0'	Blue slag fragments, little c Sand, saturated, sulfur odor	0.0	
8	4								
9	4		8-'10'		1.2'	8.0'	As above, saturated, sulfur odor	0.0	
10	7								
11	15		10'-12'		0.2'	10.0'	As above, saturated, sulfur odor	0.0	
12	9								
13	18		12'-14'		1.2'	12.0'	As above, saturated, sulfur odor	0.0	
14	5								
15	6		14'-16'		2.0'	14.0'	As above, saturated, sulfur odor	0.0	
16	4								
	5								

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.

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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-16a
SHEET 2 OF 2
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese
BORING LOCATION
GROUND SURFACE ELEVATION 257.23' DATUM
START DATE 6/22/09 END DATE 6/22/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 257.23' Bottom Elevation: 225.00' Total Depth: 32.23')	PID READINGS	NOTES
17	5 6 11 4		16'-18'		0.7'	16.0'	As above, saturated, sulfur odor	0.0	
18									
19	4 3 3 2		18'-20'		1.2'	18.0'	As above, saturated, sulfur odor NATIVE SOIL	0.0	
20						18.9'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
						19.5'	Grey, mf SAND, little Silt, wet, sulfur odor		
21	2 2 1 2		20'-22'		1.2'	20.0'	As above, wet, no odor	0.0	
22									
23	1 1 3 2		22'-24'		1.4'	22.0'	Grey, SILT, little mf Sand, trace Clay, wet, no odor	0.0	
24									
25	NA NA 2 3		24'-26'		1.6'	24.0'	As above, wet, no odor STANDARD SAMPLING BEGINS 24.0' - 32.0'	0.0	
						25.0'	As above, wet, no odor		
26									
27	1 2 NA NA		26'-28'		NA	26.0'		NA	
28									
29	NA NA NA NA		28'-30'		NA	28.0'		NA	
30									
31	2 2 3 3		30'-32'		2.0'	30.0'	Brown to grey, SILT, little mf Sand, wet, no odor	0.0	

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

NOTES:
Bottom of boring @ 32.0' bgs
14.9 of blue slag (4.0'-18.9')
2.0' of fill materials (2.0'-4.0')

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-17 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 257.57' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 257.57' Bottom Elevation: 225.00' Total Depth: 32.57'	PID READINGS	NOTES
1	NA NA 15 11		1'-2'		0.6'	0.0' 1.0'	Asphalt - Not sampled (Augered to ~1.0'bgs) RE-WORKED NATIVE SOIL Light brown, mc SAND and c GRAVEL, wet, no odor	0.0	
3	5 4 10 8		2'-4'		1.0'	2.0' 3.4'	As above, saturated, no odor Dark brown, SILT, some mf Sand, moist, no odor	0.0	
5	5 21 19 10		4'-6'		1.5'	4.0' 5.2' 5.8'	As above, moist, no odor Crushed brick Brown, mc SAND, moist, no odor	0.0	
7	9 15 50/2		6'-8'		0.6'	6.0' 7.8'	As above, moist, no odor BLUE SLAG Blue slag, moist, sulfur odor	0.0	
9	2 2 2 2		8-'10'		0.2'	8.0'	Bits of blue slag, saturated, sulfur odor FILL MATERIALS	0.0	
11	1 2 5 3		10'-12'		0.9'	10.0' 11.5'	Light brown, SILT, little f Sand, trace Clay, saturated, no odor Brown to dark brown, mc SAND, some brick and cinders, saturated, no odor	0.0	
13	1 2 4 5		12'-14'		0.7'	12.0' 13.2'	As above, saturated, no odor BLACK SLAG Black slag, some crushed brick, sulfur odor	0.0	
15	4 5 6 4		14'-16'		1.0'	14.0'	As above, saturated, sulfur odor	0.0	

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.

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300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-17
SHEET 2 OF 2
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 257.57' DATUM
START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 257.57' Bottom Elevation: 225.00' Total Depth: 32.57')	PID READINGS	NOTES
17	1 2		16'-18'		1.3'	16.0'	As above, saturated, sulfur odor	0.0	
							NATIVE SOIL		
18	1 2					17.3'	Grey to black, SILT, little Clay, saturated, no odor		
19	3 3		18'-20'		1.2'	18.0'	As above, saturated, no odor	0.0	
						18.9'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
20	4 4					19.6'	Grey, SILT, little mf Sand, trace Clay, moist, no odor		
21	1 2		20'-22'		1.3'	20.0'	As above, moist, no odor	0.0	
						21.5'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
22	2								
23	NA NA		22'-24'		NA	22.0'	STANDARD SAMPLING BEGINS 24.0' - 32.0'	NA	
24	NA NA								
25	NA NA		24'-26'		1.5'	25.0'	Grey, SILT, little f Sand, wet, no odor	0.0	
26	1 2								
27	2 2		26'-28'		NA			NA	
28	NA NA								
29	NA NA		28'-30'		NA			NA	
30	NA NA								
31	2 2		30'-32'		1.9'	30.0'	As above, wet, no odor	0.0	
	2 2								

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

NOTES:
Bottom of boring @ 32.0' bgs
2.2' of blue slag (7.8'-10.0')
4.1' of black slag (13.2' - 17.3')
Native soil encountered @ 17.3' bgs
3.2' of fill materials (10'-13.2')

NERAL 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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-18
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.51' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 254.51' Bottom Elevation: 225.00' Total Depth: 29.51')	PID READINGS	NOTES
1	NA NA 12		1'-2'		0.7'	0.0' 1.0'	Asphalt - not sampled (augered to ~1.0'bgs) Brown, mc SAND and c GRAVEL, moist, no odor **FILL MATERIALS**	0.0	
2	12					1.8'	Brown to black, brick, cinders, and coals, moist, no odor		
3	8 11 15		2'-4'		1.3'	2.0'	As above, wet, no odor **BLUE SLAG**	0.0	
4	12					3.2'	Blue slag, some mc Sand, saturated, sulfur odor		
5	4 4 5		4'-6'		1.6'	4.0' 4.3'	As above, saturated, no odor **FOUNDRY SAND** Dark brown to red, mc SAND, wet, no odor	0.0	
6	15					5.8'	Crushed rock		
7	70 43 29		6'-8'		1.6'	6.0' 7.0'	Dark brown to red, mc SAND (foundry sand), wet, no odor Black cinders **BLUE SLAG**	0.0	
8	20					7.7'	Blue slag, saturated, sulfur odor		
9	6 4 8		8-'10'		0.4'	8.0'	As above, saturated, sulfur odor	0.0	
10	6								
11	6 7 12		10'-12'		0.8'	10.0'	As above, saturated, sulfur odor	0.0	
12	3								
13	2 3 4		12'-14'		1.0'	12.0' 13.7'	As above, saturated, sulfur odor Grey to brown, mc SAND, some wood fragments, wet, slight sulfur odor	0.0	
14	4						**NATIVE SOIL**		
15	3 3 5		14'-16'		1.4'	14.0'	Grey, mc SAND, saturated, no odor	0.0	
16	4								

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-18
SHEET 2 OF 2
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 254.51' DATUM
START DATE 6/23/09 END DATE 6/23/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 254.51' Bottom Elevation: 225.00' Total Depth: 29.51')	PID READINGS	NOTES
17	2 2 3 4		16'-18'		2.0'	16.0'	As above, saturated, no odor	0.0	
18						17.8'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
							STANDARD SAMPLING BEGINS 18.0' - 30.0'		
19	1 1 2 3		18'-20'		1.6'	18.0'	As above, moist, no odor	0.0	
20						19.7'	Grey, SILT, trace f Sand and Clay, moist, no odor		
21	NA NA NA NA		20'-22'		NA	20.0'		0.0	
22									
23	NA NA 1 1		22'-24'		1.6'	22.0'		NA	
24						23.0'	Grey, SILT, little Clay and f SAND, some iron staining, saturated, no odor		
25	2 2 NA NA		24'-26'		NA			0.0	
26									
27	NA NA NA NA		26'-28'		NA			NA	
28									
29	WR WR WH 3		28'-30'		0.9'	28.0'	As above, saturated, no odor	0.0	
30									
31			30'-32'						

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

NOTES:
Bottom of boring @ 30.0' bgs
5.2' of fill materials including blue slag (1.8'-7.
6.0' of blue slag (7.7' - 13.7')
Native soil encountered @ 13.7' bgs
WH = Weight of Hammer
WR = Weight of Rods

NERAL 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-19/MW09-1 SHEET 1 of 3 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 253.20' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/30/09 END DATE 6/30/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 253.20' Bottom Elevation: 215.00' Total Depth: 38.20'	PID READINGS	NOTES
1	NA NA		1'-2'		0.8'	0.0'	Asphalt - not sampled (augered to ~1.0'bgs)	0.0	
2	7 8					1.0'	**FILL MATERIALS** Reddish to brown, mc SAND and Cinders, Coals, Brick, and Blue Slag, moist, slight sulfur odor		
3	6 5		2'-4'		0.7'	2.0'	As above, moist, slight sulfur odor	0.0	
4	7 4						**BLUE SLAG**		
5	15 15		4'-6'		0.5'	4.0'	Blue slag, wet, sulfur odor	6.5	
6	6 4								
7	3 2		6'-8'		0.2'	6.0'	As above, wet, sulfur odor	3.2	
8	1 3								
9	2 7		8-'10'		1.0'	8.0'	As above, wet, sulfur odor	3.7	
10	9 7								
11	5 2		10'-12'		0.7'	10.0'	As above, wet, sulfur odor **NATIVE SOIL**	9.6	
12	5					11.8'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
13	2 2		12'-14'		<0.1'	12.0'	Small pieces of blue slag, saturated, sulfur odor	NA	
14	2 3								
15	2 1		14'-16'		0.2'	14.0'	Dark brown, SILT, some organic matter, little f Sand, trace Clay, saturated, no c	0.0	
16	2								

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-19/MW09-1
SHEET 2 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 253.20' DATUM
START DATE 6/30/09 END DATE 6/30/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 253.20' Bottom Elevation: 215.00' Total Depth: 38.20')	PID READINGS	NOTES
17	NA						STANDARD SAMPLING BEGINS 16.0' - 37.0'	NA	
	NA								
	NA								
18	NA								
	NA								
19	NA		19'-21'		1.3'				
	1					19.0'	Dark brown, SILT, some f Sand and roudned Gravel, saturated, no odor	0.0	
20	1								
	2							NA	
21	2								
	NA								
22	NA								
	NA							NA	
23	NA								
	NA								
24	NA								
	8								
25	18		24'-26'		0.8'		GLACIAL TILL		
	50/0.2					25.0'	Light brown, SILT, little mf Sand and Gravel, wet, no odor	0.0	
26	NA								
	NA								
27	NA								
	NA								
28	NA								
	NA							NA	
29	NA		29'-31'		1.5'				
	18					29.0'	As above, wet, no odor	0.0	
30	42								
	32					30.5'	Red weathered bedrock (sandstone), wet, no odor		
31	30								
	NA								
	NA								

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.

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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-19/MW09-1
SHEET 3 OF 3
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 253.20' DATUM
START DAT 6/30/09 END DATE 6/30/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 253.20' Bottom Elevation: 215.00' Total Depth: 38.20')	PID READINGS	NOTES
33	NA NA NA NA							NA	
34	16 49 50/0.3		34'-36'		1.2'	34.0'	As above, wet, no odor	0.0	
36							*Bedrock Refusal @ ~37.0' bgs*		
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									

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

NOTES:
Bottom of boring @ ~37.0' bgs
3.0' of fill materials including blue slag (1.0'-4.0')
7.8' of blue slag (4.0' - 11.8')
Native soil encountered @ 11.8' bgs
Groundwater @ ~ 4.0' BGS
Monitoring well MW09-1 installed to 37.0' bgs, with 30.0' of screen from 2.0'-32.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-20 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.06' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/26/09 END DATE 6/26/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.06' Bottom Elevation: 225.00' Total Depth: 29.06'	PID READINGS	NOTES
1	NA NA		1'-2'		0.8'	0.0'	Asphalt - not sampled (augered to 1.0' bgs) **FILL MATERIALS**	0.0	
2	8 11					1.0' 1.8'	Cinders, coals, and brick, moist, no odor As above, some blue slag, moist, sulfur odor		
3	34 15		2'-4'		1.8'	2.0'	Brown to black, mc SAND and FILL MATERIALS, moist, no odor	0.0	
4	15 18								
5	5 3		4'-6'		1.2'	4.0'	As above, with FOUNDRY SAND and BLUE SLAG, wet @ ~ 5.0' bgs, slight sulfur odor	0.0	
6	4 7								
7	27 15		6'-8'		1.0'	6.0'	As above, saturated, sulfur odor	0.0	
8	4 10						**BLUE SLAG**		
9	4 8		8-'10'		0.7'	8.0'	Blue Slag, saturated, sulfur odor	0.0	
10	10 12								
11	3 13		10'-12'		0.8'	10.0'	As above, saturated, sulfur odor	0.0	
12	12 5								
13	6 4		12'-14'		1.0'	12.0'	As above, saturated, sulfur odor	0.0	
14	14 16								
15	2 2		14'-16'		0.7'	14.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.0	
16	1 2					15.5'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-20** SHEET 2 OF 2 JOB # 209447 CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 254.06' DATUM

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/26/09 END DATE 6/26/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.06' Bottom Elevation: 225.00' Total Depth: 29.06'	PID READINGS	NOTES
17	2 2 2		16'-18'		1.4'	16.0'	As above, saturated, slight sulfur odor	0.0	
18	2					17.5'	Grey, mf SAND, some Silt, saturated, no odor		
19	1 2 2		18'-20'		1.2'	18.0'	As above, saturated, no odor	0.0	
20	3						STANDARD SAMPLING BEGINS 20.0' - 30.0'		
21	NA NA NA		20'-22'		NA			NA	
22	NA								
23	NA NA 1		22'-24'		0.5'	23.0'	Greyish to brown, SILT, little f Sand and Clay, wood fragments, saturated, no od	0.0	
24	1								
25	2 NA NA		24'-26'		NA			NA	
26	NA								
27	NA NA NA		26'-28'		NA			NA	
28	NA								
29	1 1 2		28'-30'		1.6'	28.0'	As above, saturated, no odor	0.0	
30	3								
31			30'-32'				*Bottom @ 30.0' bgs*		

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 30.0' bgs

Groundwater @ ~ 5.0' bgs

7.0' of fill materials including blue slag (1.0'-8.0')

7.5' of blue slag (8.0' - 15.5')

Native soil encountered @ 15.5' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-21 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 253.98' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/26/09 END DATE 6/26/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 253.98' Bottom Elevation: 225.00' Total Depth: 28.98'	PID READINGS	NOTES
1	NA NA 18		1'-2'		1.0'	0.0' 1.0'	Asphalt - not sampled (augered to ~1.0'bgs) Brown, mc SAND and GRAVEL, moist, no odor **FILL MATERIALS**	0.0	
2	22					1.5'	As above, with some cinders and bricks, moist, no odor		
3	8 15		2'-4'		0.7'	2.0'	As above, moist, no odor	0.0	
4	14 15					3.7'	**BLUE SLAG** Blue slag, moist, sulfur odor		
5	4 3		4'-6'		<0.1'	4.0'	As above, moist, sulfur odor	0.0	
6	2 2					5.0'	As above, wet @ ~ 5.0' bgs		
7	10 5		6'-8'		1.0'	6.0'	As above, saturated, sulfur odor	0.0	
8	3 3								
9	3 11		8-'10'		1.2'	8.0'	As above, saturated, sulfur odor	0.0	
10	29 34								
11	18 31		10'-12'		1.3'	10.0'	As above, saturated, sulfur odor	0.0	
12	20 19								
13	10 5		12'-14'		1.2'	12.0'	As above, saturated, sulfur odor	0.0	
14	5 7								
15	7 5		14'-16'		0.2'	14.0'	As above, saturated, sulfur odor	0.0	
16	2 2								

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.

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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-21
SHEET 2 OF 2
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 253.98' DATUM
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/26/09 END DATE 6/26/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 253.98' Bottom Elevation: 225.00' Total Depth: 28.98')	PID READINGS	NOTES
17	1		16'-18'		1.2'	0.0'	As above, saturated, sulfur odor	0.0	
	1						**NATIVE SOIL**		
	1					17.1'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
18	1								
19	2		18'-20'		0.1'	18.0'	As above, saturated, slight sulfur odor	0.0	
	2								
	2								
20	3								
21	1		20'-22'		1.6'	20.0'	As above, saturated, slight sulfur odor	0.0	
	1					20.6'	Greyish to brown, SILT, little f Sand, saturated, no odor		
	1								
22	1						STANDARD SAMPLING BEGINS 22.0' - 30.0'		
23	NA		23'-25'		2.0'			0.0	
	NA					23.0'	As above, saturated, no odor		
	1								
24	2								
25	1							NA	
	2								
	NA								
26	NA								
27	NA							NA	
	NA								
	NA								
28	NA								
29	1		28'-30'		2.0'	28.0'	As above, saturated, no odor	0.0	
	1								
	1					29.4'	Greyish to brown, SILT, trace f Sand and Clay, no odor		
30	2								
31							*Bottom @ 30.0' bgs*		

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

NOTES:
Bottom of boring @ 30.0' bgs
1.7' of fill materials (1.5'-3.2')
13.4' of blue slag (3.7' - 17.1')
Native soil encountered @ 17.1' bgs
Groundwater @ 5.0' 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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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-22
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.12' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/26/09 END DATE 6/26/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 254.12' Bottom Elevation: 225.00' Total Depth: 29.12')	PID READINGS	NOTES
1	NA NA		1'-2'		0.7'	0.0'	Asphalt - not sampled (augered to ~1.0'bgs)	0.0	
2	17 18					1.0'	Brown, mc SAND and GRAVEL, moist, no odor		
3	12 13		2'-4'		0.8'	2.0'	As above, moist, no odor **FILL MATERIALS**	0.0	
4	16 29					3.0'	Cinders, Blue Slag, and Foundry Sand, moist, slight sulfur odor		
5	2 3		4'-6'		1.3'	4.0'	Bown, SILT, some mc Sand and fill materials, moist, no odor	0.0	
6	5 12					5.5' 5.8'	Ash layer, wet @ ~ 5.5' bgs Dark brown to red, SILT and m SAND, some blue slag, wet, sulfur odor		
7	11 11		6'-8'		0.9'	6.0'	**BLUE SLAG** Blue slag, saturated, sulfur odor	0.0	
8	9 7								
9	3 7		8-'10'		1.0'	8.0'	As above, saturated, sulfur odor	0.0	
10	12 16								
11	6 7		10'-12'		0.3'	10.0'	As above, saturated, sulfur odor	0.0	
12	8 7								
13	7 10		12'-14'		1.2'	12.0'	As above, saturated, sulfur odor	0.0	
14	10 12								
15	3 2		14'-16'		0.4'	14.0'	As above, saturated, sulfur odor	0.0	
16	2 4								

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.

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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-22
SHEET 2 OF 2
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 254.12' DATUM
START DATE 6/26/09 END DATE 6/26/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 254.12' Bottom Elevation: 225.00' Total Depth: 29.12')	PID READINGS	NOTES
17	4 2 2		16'-18'		1.6'	16.0'	As above, saturated, sulfur odor	0.0	
							NATIVE SOIL		
						17.0'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
18	2					17.5'	Greyish to brown, SILT, little f Sand, trace Clay, saturated, no odor		
19	2 2 2		18'-20'		1.4'	18.0'	As above, wet, no odor	0.0	
20	2								
21	2 2 2		20'-22'		2.0'	20.0'	Dark brown, SILT, some mf Sand, trace Clay, saturated, no odor	0.0	
22	3						STANDARD SAMPLING BEGINS 22.0' - 30.0'		
23	NA NA 1		23'-25'					0.0	
24	1					23.0'	Greyish to brown, SILT, little f Sand, trace Clay, saturated, no odor		
25	1 1 NA							NA	
26	NA								
27	NA NA							NA	
28	NA								
29	2 2 2		28'-30'		1.0'	28.0'	As above, saturated, no odor	0.0	
30	3								
31							*Bottom @ 30.0' bgs*		

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

NOTES:
Bottom of boring @ 30.0' bgs
Groundwater @ ~5.5' bgs
3.0' of fill materials including blue slag (3.0'-6.0')
11.0' of blue slag (6.0' - 17.0')
Native soil encountered @ 17.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-23 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 255.00' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/25/09 END DATE 6/26/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 255.00' Bottom Elevation: 225.00' Total Depth: 30.0'	PID READINGS	NOTES
1	NA		1'-2'		0.9'	0.0'	Asphalt - not sampled (augered to ~1.0'bgs)	0.0	
	NA					1.0'	Brown, mc SAND and GRAVEL, dry, no odor		
	15						**FILL MATERIALS**		
2	16					1.8'	Cinders, coals, and brick, dry, no odor		
3	15		2'-4'		1.3'	2.0'	As above, moist, no odor	0.0	
	8					2.8'	As above, some blue slag, moist, slight sulfur odor		
	6								
4	5								
5	5		4'-6'		1.0'	4.0'	As above, moist, no odor	0.0	
	8								
	4								
6	5						**FOUNDRY SAND**		
7	2		6'-8'		0.8'	6.0'	Dark brown to red, c SAND, wet, slight sulfur odor	0.0	
	6								
	7						**BLUE SLAG**		
8	14					7.7'	Blue slag, saturated, sulfur odor		
9	8		8-'10'		0.6'	8.0'	As above, saturated, sulfur odor	0.0	
	7								
	5								
10	3								
11	6		10'-12'		0.8'	10.0'	As above, saturated, sulfur odor	0.0	
	19								
	23								
12	15								
13	17		12'-14'		1.2'	12.0'	As above, saturated, sulfur odor	0.0	
	18								
	7								
14	2								
15	WH		14'-16'		1.2'	14.0'	As above, saturated, sulfur odor	0.0	
	1						**NATIVE SOIL**		
	1					15.5'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
16	1								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-23 SHEET 2 OF 2 JOB # 209447 CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 255.00' DATUM

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/25/09 END DATE 6/26/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 255.00' Bottom Elevation: 225.00' Total Depth: 30.0'	PID READINGS	NOTES
17	1		16'-18'		1.5'	16.0'	As above, saturated, no odor	0.0	
	1								
	1					17.4'	Grey, SILT, little f Sand and Clay, saturated, no odor		
18	2								
19	1		18'-20'		1.0'	18.0'	As above, saturated, no odor	0.0	
	1								
	1								
20	1						STANDARD SAMPLING BEGINS 20.0' - 30.0'		
21	NA							NA	
	NA								
	NA								
22	NA								
23	NA		23'-25'		1.5'	23.0'	Brown to grey, SILT, little f Sand and Clay, saturated, no odor	0.0	
	1								
24	1								
25	1							NA	
	2								
	NA								
26	NA								
27	NA							NA	
	NA								
	NA								
28	NA								
29	1		28'-30'		2.0'	28.0'	As above, saturated, no odor	0.0	
	1								
	1								
30	2								
31							*Bottom @ 30.0' bgs*		

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 30.0' bgs

Groundwater @ ~ 6.0' bgs

5.9' of fill materials including blue slag (1.8'-7.7')

7.8' of blue slag (7.7' - 15.5')

Native soil encountered @ 15..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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-24 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 253.07' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 253.07' Bottom Elevation: 225.00' Total Depth: 28.07'	PID READINGS	NOTES
1	NA NA		1'-2'		1.3'[	0.0'	Asphalt - not sampled (augered to ~1.0'bgs)	0.0	
2	40 44					1.0'	**FILL MATERIALS** Brown, mc SAND and SILT, some crushed brick and cinders, moist, no odor		
3	50/0.4		2'-4'		0.5'	2.0'	As above, moist, no odor	0.0	
4							**FOUNDRY SAND**		
5	37 5		4'-6'		1.5'	4.0'	Reddish to brown, mc SAND, some cinders and coals, moist, no odor	0.0	
6	6 5								
7	3 3		6'-8'		2.0'	6.0'	As above, trace cinders and coals, wet @~6.0' bgs, no odor	0.0	
8	4 3								
9	1 1		8-'10'		2.0'	8.0'	As above, saturated, no odor	0.0	
10	2 1								
11	1 2		10'-12'		2.0'	10.0'	As above, saturated, no odor	0.0	
12	2 2								
13	2 2		12'-14'		2.0'	12.0'	As above, saturated, no odor	0.0	
14	2 2					13.6'	Dark brown, SILT, some mc Sand, saturated, slight petroleum odor, sheen pres		
15	4 4		14'-16'		1.0'	14.0'	As above, saturated, no odor **BLUE SLAG**	1.2	
16	23 40					14.2'	Blue slag, little mc Sand, saturated, sulfur odor		

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-24 SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 253.07' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/8/09 END DATE 7/8/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 253.07' Bottom Elevation: 225.00' Total Depth: 28.07'	PID READINGS	NOTES
17	27 12 9 10		16'-18'		0.8'	16.0'	As above, saturated, sulfur odor	0.2	
19	2 2 3 3		18'-20'		<0.1'	18.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.3	
21	2 3 4 5		20'-22'		1.7'	20.0' 21.9'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor Grey, SILT, little mf Sand, slight sulfur odor, wet	0.0	
23	4 4 4 4		22'-24'		0.9'	22.0'	As above, saturated, no odor	0.0	
25	4 4 4 4		24'-26'		<0.1'	24.0'	Dark brown, SILT, little Clay and f Sand, saturated, no odor	0.0	
27	5 4 6 5		26'-28'		1.6'	26.0'	As above, some pieces of wood, saturated, no odor	0.0	
29							*Bottom @ 28.0' bgs*		
31									

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

NOTES:
Bottom of boring @ 28.0' bgs
13.2' of fill materials (1.0'-14.2')
5.8' of blue slag (14.2' - 20.0')
Native soil encountered @ 20.0' bgs
Groundwater @ ~ 6.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-25 SHEET 1 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82'	PID READINGS	NOTES
1	NA NA 40 45		1'-2'		1.0'	0.0' 1.0'	Asphalt - not sampled (augered to ~1.0'bgs) Brown, mc SAND, little Silt and Gravel, moist, no odor	0.0	
2 3	50/.4		2'-4'		0.6'	2.0'	As above, moist, no odor **FILL MATERIALS**	0.0	
4						3.6'	Brown, mc SAND, coals, cinders, crushed brick, moist, no odor		
5	4 7 2 7		4'-6'		1.4'	4.0'	Reddish to brown, mc SAND, moist, no odor (FOUNDRY SAND)	0.0	
6 7	4 5 6 5		6'-8'		1.2'	6.0'	As above, saturated, @ ~6.0' bgs, no odor	0.0	
8 9	2 1 1 1		8-'10'		1.5'	8.0'	As above, saturated, no odor	0.0	
10 11	1 2 2 2		10'-12'		1.7'	10.0'	As above, saturated, no odor	0.0	
12 13	1 5 18 14		12'-14'		2.0'	12.0' 13.6'	As above, saturated, no odor **BLUE SLAG** Blue Slag, saturated, sulfur odor	0.0	
14 15	6 9 9		14'-16'		1.5'	14.0'	As above, saturated, sulfur odor	1.2	
16	6								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-25 SHEET 2 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82'	PID READINGS	NOTES
17	6		16'-18'		0.4'	16.0'	As above, saturated, no odor	0.0	
	10								
	8								
18	7								
	4		18'-20'		1.4'	18.0'	As above, saturated, no odor **NATIVE SOIL**	0.0	
19	3								
	4					18.6'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
20	3								
	4		20'-22'		0.0'	20.0'	No Recovery	NA	
21	4								
	5								
22	5								
	4		22'-24'		2.0'	22.0'	Brown, peat moss, some organic matter/roots, saturated, no odor	0.0	
23	4								
	5								
24	5								
	1		24'-26'		1.6'	24.0'	Greyish to brown, SILT, little mf Sand and Clay, trace organic matter, saturated no odor	0.0	
25	2								
	2								
26	3								
	NA						STANDARD SAMPLING BEGINS 26.0' - Bottom	NA	
27	NA								
	NA								
28	NA								
	NA		29'-31'		2.0'			0.0	
29	NA								
	1					29.0'	Greyish to brown, SILT, little mf Sand and Clay, saturated, no odor		
30	2								
	3								
31	3								
	NA							NA	
	NA								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-25** SHEET 3 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82'	PID READINGS	NOTES
33	NA NA NA NA							NA	
34	1 2 3 3		34'-36'		2.0'	34.0'	As above, saturated, no odor	0.0	
36	NA NA NA NA							NA	
38	NA NA 2 2		39'-41'		1.3'	39.0'	Grey, SILT and CLAY, little f Sand, saturated, no odor	0.0	
40	2 3 NA NA							NA	
42	NA NA NA NA							NA	
44	WR WR 1 1		44'-46'		1.0'	44.0'	As above, saturated, no odor	0.0	
46	NA NA NA NA							NA	

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR = Weight of Rods

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-25** SHEET 4 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82'	PID READINGS	NOTES
48	NA NA NA NA							NA	
49	WR WH 2 3		49'-51'		2.0'	49.0'	Grey, SILT, some mf Sand, little Clay, saturated, no odor	0.0	
51	NA NA NA NA							NA	
53	NA NA WR WH		54'-56'		2.0'	54.0'	As above, saturated, no odor	0.0	
55	WH 3 NA NA							NA	
57	NA NA NA NA							NA	
59	1 1 3 3		59'-61'		2.0'	59.0'	As above, saturated, no odor	0.0	
61	NA NA NA NA							NA	

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

NOTES: WR = Weight of Rods
WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-25** SHEET 5 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82')	PID READINGS	NOTES
63	NA NA NA NA							NA	
64	1 1 2 1		64'-66'		1.6'	64.0'	Grey, SILT, some mf Sand, trace Clay, saturated, no odor	0.0	
66	NA NA NA NA							NA	
68	NA NA 2 5		69'-71'		1.0'	69.0' 70.3'	As above, saturated, no o odor As above, some pieces of wood, saturated, no odor	0.0	
70	6 7 NA NA							NA	
72	NA NA NA NA							NA	
74	2 3 5 6		74'-76'		2.0'	74.0'	Greyish to brown, SILT and mf SAND, saturated, no odor	0.0	
76	NA NA NA NA							NA	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-25 SHEET 6 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82')	PID READINGS	NOTES
78	NA NA NA NA							NA	
79	1					79.0'	As above, saturated, no odor		
80	4 4		79'-81'		2.0'			0.0	
81	5								
82	NA NA NA NA							NA	
83	NA								
84	NA NA 2		84'-86'		1.4'	84.0'	Grey, SILT, little mf Sand, trace Clay, saturated, no odor	0.0	
85	2								
86	8 8							NA	
87	NA NA								
88	NA NA NA							NA	
89	NA								
90	3 6 6		89'-91'		2.0'	89.0'	Grey, SILT, little f Sand and Clay, wet, no odor	0.0	
91	6								
92	NA NA NA NA							NA	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-25** SHEET 7 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.82' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/9/09 END DATE 7/9/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.82' Bottom Elevation: 202.00' Total Depth: 50.82'	PID READINGS	NOTES
93	NA NA NA NA							NA	
94	4 6 7 8		94'-96'		1.7'	94.0'	Grey, SILT and f SAND, wet, no odor	0.0	
96	NA NA NA NA							NA	
98	NA NA 17		99'-101'		0.3'		**GLACIAL TILL**	0.0	
99						99.0'	Reddish to brown, SILT and mf SAND, some Gravel, saturated, no odor		
100	50.3					99.8'	Reddish to brown, SHALE (weathered bedrock), wet, no odor		
101							*Bedrock Refusal @ ~99.8' bgs*		
102									
103									
104									
105									
106									
107									

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

NOTES:
Bedrock Refusal @ ~99.8' bgs
10.0' of Fill Materials (3.6' - 13.6' bgs)
5.0 of Blue Slag (13.6' - 18.6' bgs)
Native Soil @ ~18.6' bgs
Groundwater @ ~6.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-26 SHEET 1 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.73' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73'	PID READINGS	NOTES
1	NA NA 20 22		1'-2'		1.0'	0.0' 1.0'	Asphalt - not sampled (augered to ~1.0'bgs) **FILL MATERIALS** Brown, mc SAND and GRAVEL, some cinders, bricks and blue slag, moist, no	0.0	
2									
3	24 15 11 9		2'-4'		0.8'	2.0'	Dark brown, mc SAND and GRAVEL, moist, no odor	0.0	
4									
5	6 2 3 3		4'-6'		1.4'	4.0' 5.2' 5.5'	As above, moist, no odor **FOUNDRY SAND** Reddish to brown, mc SAND, moist, no odor As above, wet, no odor	0.0	
6									
7	2 2 2 2		6'-8'		2.0'	6.0'	As above, saturated, no odor	0.0	
8									
9	3 2 1 1		8-'10'		1.5'	8.0'	As above, saturated, no odor	0.0	
10									
11	1 1 3 8		10'-12'		1.8'	10.0' 11.5'	As above, saturated, no odor **BLUE SLAG** Black to dark brown, organic matter and blue slag, saturated, sulfur odor	0.0	
12									
13	4 10 6 4		12'-14'		1.0'	12.0'	As above, saturated, sulfur odor	0.0	
14									
15	4 6 4		14'-16'		0.0'	14.0'	No recovery	NA	
16	6								

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.

LABELLA Associates, P.C.	Port Marina Predevelopment Site	BORING B09-26
300 STATE STREET, ROCHESTER, NEW YORK	Conditions Gap Investigation	SHEET 2 OF 7
ENVIRONMENTAL ENGINEERING CONSULTANTS	Port of Rochester, New York	JOB # 209447
		CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.73' DATUM

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73')	PID READINGS	NOTES
17	2 2 2 2		16'-18'		0.0'	16.0'	No Recovery	NA	
18									
19	1 1 3 3		18'-20'		1.0'	18.0'	Brown, mc SAND, saturated, no odor	0.0	
							NATIVE SOIL		
						19.0'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
20						19.5'	Brown to grey, SILT, little mf Sand, wet, no odor		
21	1 1 1 3		20'-22'		1.3'	20.0'	As above, wet, no odor	0.0	
						20.6'	As above, some peat moss mixed in, wet, no odor		
22									
23	1 2 2 2		22'-24'		1.6'	22.0'	As above, saturated, no odor	0.0	
24							STANDARD SAMPLING BEGINS 24.0' - 108.0'		
25	NA NA 1 1		25'-27'		1.9'	25.0'	As above, saturated, no odor	0.0	
26									
27	1 2 NA NA							NA	
28									
29	NA NA NA NA							NA	
30									
31	1 2 2 2		30'-32'		1.8'	30.0'	As above, saturated, no odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-26** SHEET 3 OF 7 JOB # 209447 CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.73' DATUM

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73')	PID READINGS	NOTES
33	NA							NA	
	NA								
	NA								
34	NA								
	NA		35'-37'		1.0'	35.0'	Greyish to brown, SILT, little Clay, saturated, no odor	0.0	
35	NA								
	1								
36	1								
	2							NA	
37	3								
	NA								
38	NA								
	NA							NA	
39	NA								
	NA								
40	NA								
	1							0.0	
41	1		40'-42'		1.8'	40.0'	As above, saturated, no odor		
	2								
42	3								
	NA							NA	
43	NA								
	NA								
44	NA								
	NA							0.0	
45	NA		45'-47'		2.0'	45.0'	Greyish to brown, SILT, some mf Sand, little Clay, saturated, no odor		
	WH								
46	1								
	1								
47	1								
	NA								
	NA								

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.

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-26
SHEET 4 OF 7
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.73' DATUM
LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73')	PID READINGS	NOTES
48	NA							NA	
	NA								
	NA								
49	NA								
	NA		50'-52'		1.9'	50.0'	As above, saturated, no odor	0.0	
50	NA								
	WH								
51	WH								
	1							NA	
52	1								
	NA								
53	NA								
	NA							NA	
54	NA								
	NA								
55	NA								
	WH		55'-57'		2.0'	55.0'	Grey, mf SAND and SILT, saturated, no odor	0.0	
56	WH								
	1								
57	1								
	NA							NA	
58	NA								
	NA								
59	NA								
	NA		60'-62'		1.8'	60.0'	Grey to brown, SILT and organic matter, saturated, no odor	0.0	
60	NA								
	3								
61	3								
	3								
62	3								
	NA								
	NA								

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

NOTES:

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-26
SHEET 5 OF 7
JOB # 209447
CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER Neal Short
LABELLA REPRESENTATIVE: E. Dumrese

BORING LOCATION
GROUND SURFACE ELEVATION 252.73' DATUM
START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73')	PID READINGS	NOTES
64	NA							NA	
	NA								
	NA								
65	NA								
	NA							0.0	
66	NA		65'-67'		1.7'	65.0'	Grey, SILT, trace f Sand, saturated, no odor		
	1								
67	1								
	1							NA	
68	1								
	NA								
69	NA								
	NA							NA	
70	NA								
	NA								
71	NA								
	1							0.0	
72	3		70'-72'		2.0'	70.0'	Greyish to brown, SILT, little mf Sand and Clay, wet, no odor		
	3								
73	5								
	NA							NA	
74	NA								
	NA								
75	NA								
	NA							0.0	
76	NA		75'-77'		1.4'	75.0'	AS above, wet, no odor		
	1								
77	2								
	3								
78	5								
	NA								
	NA								

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.
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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-26** SHEET 6 OF 7 JOB # 209447 CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.73' DATUM

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73'	PID READINGS	NOTES
79	NA							NA	
	NA								
	NA								
80	NA								
	NA		80'-82'		2.0'			0.0	
81	NA					80.0'	Grey, SILT and mf SAND, wet, no odor		
	1								
82	1								
	1							NA	
83	1								
	NA								
84	NA								
	NA							NA	
85	NA								
	NA								
86	NA								
	1							0.0	
87	3		85'-87'		2.0'				
	3					85.0'	As above, wet, no odor		
88	5					86.0'	Grey, mc SAND, some Silt, wet, no odor		
	NA							NA	
89	NA								
	NA								
90	NA								
	NA							0.0	
91	NA		90'-92'		1.7'				
	1					90.0'	As above, wet, no odor		
92	2					90.8'	Grey, SILT, little mf Sand, wet, no odor		
	3								
93	5								
	NA								
	NA								

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.
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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-26 SHEET 7 OF 7 JOB # 209447 CHKD. BY:

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.73' DATUM

LABELLA REPRESENTATIVE: E. Dumrese START DATE 6/29/09 END DATE 6/29/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (INCHES)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.73' Bottom Elevation: 175.00' Total Depth: 77.73'	PID READINGS	NOTES
94	NA							NA	
	NA								
	NA								
95	NA								
	4							0.0	
96	4		95'-97'		2.0'	95.0'	As above, wet, no odor		
	6								
97	7								
	NA							NA	
98	NA								
	NA								
99	NA								
	NA							NA	
100	NA								
	1								
101	6								
	9							0.0	
102	9		100'-102'		2.0'	100'	Grey, SILT and mc SAND, wet, no odor, some iron staining		
	NA								
103	NA								
	NA							NA	
104	NA								
	NA								
105	NA								
	2							0.0	
106	3		105'-107'		1.7'	105'	As above, wet, no odor		
	6					105.5'	Brownish to red, mc SAND, some Silt, wet, no odor		
107	19					106.8'	As above, some pieces of black shale, wet, no odor		
	NA								
108	NA						*Bedrock Refusal @ ~108' bgs*		

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 108' bgs

Groundwater @ ~ 5.5' bgs

10.5' of fill materials including blue slag (1.0'-11.5')

4.5' of blue slag (11.5' - 16.0')

Native soil encountered @ 19.0' bgs

GENERAL NOTES:

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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 1 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
1	NA NA 8 9		1'-2'		0.6'	0.0' 1.0'	Asphalt - not sampled (augered to ~1.0'bgs) **FILL MATERIALS** Brown, mc SAND, some Gravel and Cinders, moist, no odor	0.0	
2 3	10 5 5 5		2'-4'		1.5'	2.0' 3.2'	As above, moist, no odor Reddish to brown, mc SAND (foundry sand), moist, no odor	0.0	
4 5	4 5 7 10		4'-6'		0.9'	4.0'	As above, saturated @~5.6' bgs	0.0	
6 7	2 4 12 19		6'-8'		0.9'	6.0' 7.6'	As above, saturated, no odor Ash, satuarated, no odor	0.0	
8 9	2 6 13 11		8-'10'		1.0'	8.0' 9.3' 9.9'	Brown, mc SAND, saturated, no odor Crushed brick **BLUE SLAG** Blue slag, saturated, sulfur odor	0.0	
10 11 12	4 5 5 6		10'-12'		1.0'	10.0'	As above, saturated, no odor	1.2	
13 14	10 10 7 3		12'-14'		0.8'	12.0'	As above, saturated, no odor	0.4	
15 16	5 5 8 7		14'-16'		0.2'	14.0'	As above, saturated, no odor	0.0	

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.
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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 2 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
17	3 3 4		16'-18'		1.5'	16.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.0	
18	4					16.8' 17.6'	Brown to dark brown, SILT, trace f Sand and Clay, wet, slight sulfur odor Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
19	2 2 2		18'-20'		1.5'	18.0'	As above, wet, no odor	0.0	
20	3					19.5'	Light brown to grey, SILT, little mf Sand, wet, no odor		
21	3 4 3		20'-22'		2.0'	20.0'	As above, wet, no odor	0.0	
22	4								
23	NA NA NA						STANDARD SAMPLING BEGINS 22.0' - 111'	NA	
24	NA								
25	NA NA WH		25'-27'		1.7'	25.0'	As above, saturated, no odor	0.0	
26	1								
27	2 2 NA							NA	
28	NA								
29	NA NA NA							NA	
30	NA								
31	1 3 3 3		30'-32'		0.0'	30.0'	No Recovery	0.0	

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

NOTES: WR = Weight of Rods
WH = Weight of Hammer

GENERAL NOTES:
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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 3 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
33	NA							NA	
	NA								
	NA								
34	NA								
	NA		35'-37'		2.0'			0.0	
35	NA					35.0'	Grey, SILT, little Clay, trace f Sand, saturated, no odor		
	WR								
36	WH								
	2							NA	
37	3								
	NA								
	NA								
38	NA							NA	
	NA								
39	NA								
	NA								
40	WR					40.0'	Grey, SILT, little f Sand and Clay, no odor	0.0	
	WH		40'-42'		2.0'				
41	2								
	2								
42	NA							NA	
	NA								
43	NA								
	NA								
44	NA							0.0	
	NA		45'-47'		1.7'	45.0'	Greyish to brown, SILT, little mf Sand and Clay, saturated, no odor		
45	WR								
	WH								
46	WH							NA	
	1								
47	NA								
	NA								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR = Weight of Rods

WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 4 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
48	NA NA NA NA							NA	
49	NA NA		50'-52'		1.9'	50.0'	Grey, SILT, some mf Sand, saturated, no odor	0.0	
50	NA WH							NA	
51	NA NA							NA	
52	NA NA NA NA							NA	
53	WR WH WH 1		55'-57'		1.4'	55.0'	As above, saturated, no odor	0.0	
54	NA NA NA NA							0.0	
55	NA NA WR WH		60'-62'		1.6'	60.0'	As above, some organic matter, saturated, no odor	NA	
56	4 4 NA NA							0.0	
57									
58									
59									
60									
61									
62									

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR = Weight of Rods

WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 5 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
63	NA							NA	
	NA								
	NA								
64	NA								
	NA		65'-67'		2.0'	65.0'	Grey, SILT, little mf Sand, trace Clay, saturated, no odor	0.0	
65	NA								
	WR								
66	WH								
	3							NA	
67	3								
	NA								
68	NA								
	NA							NA	
69	NA								
	NA								
70	NA								
	1					70.0'	As above, wet, no odor	0.0	
71	1		70'-72'		1.8'				
	2								
72	3								
	NA							NA	
73	NA								
	NA								
74	NA								
	NA							0.0	
75	NA		75'-77'		2.0'				
	2					75.0'	As above, wet, no odor		
76	2								
	2							NA	
77	3								
	NA								
	NA								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR = Weight of Rods

WH = Weight of Hammer

GENERAL NOTES:

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-27
SHEET 6 of 8
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94')	PID READINGS	NOTES
78	NA							NA	
	NA								
	NA								
79	NA								
	NA		80'-82'		1.8'	80.0'	As above, wet, no odor	0.0	
80	NA								
	2								
81	2								
	2							NA	
82	2								
	NA								
83	NA								
	NA							NA	
84	NA								
	NA								
85	NA								
	WH					85.0'	Grey, SILT and mf SAND, trace Clay, wet, no odor		
86	WH		85'-87'		2.0.'			0.0	
	2								
87	2								
	NA							NA	
88	NA								
	NA								
89	NA								
	NA							0.0	
90	NA		90'-92'		1.6'	90'.0'	As above, wet, no odor		
	WH								
91	WH								
	WH							NA	
92	3								
	NA								
	NA								

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

NOTES: WR = Weight of Rods
WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 7 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
93	NA							NA	
	NA								
	NA								
94	NA								
	NA		95'-97'					0.0	
95	NA								
	4					95.0'	Grey, SILT, little f Sand and Clay, wet, no odor		
96	4								
	4							NA	
97	4								
	NA								
98	NA								
	NA							NA	
99	NA								
	NA								
100	NA								
	2		100'-102'			100'	Grey, SILT, some mf Sand, wet, no odor	0.0	
101	4								
	5								
102	5								
	NA							NA	
103	NA								
	NA								
104	NA								
	NA		105'-107'					0.0	
105	NA								
	WR					105'	As above, wet, no odor		
106	WR								
	WH							NA	
107	3								
	NA								
	NA								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR = Weight of Rods

WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-27 SHEET 8 of 8 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.14' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/13/09 END DATE 7/13/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.14' Bottom Elevation: 157.00' Total Depth: 95.94'	PID READINGS	NOTES
108	NA NA NA NA							NA	
109									
110	NA NA 47		110'-112'		0.6'	110'	Reddish to brown, SILT, some mc Sand and Gravel, wet, no odor	0.0	
111	50/.2						*Bedrock Refusal @~111'*		
112									
113									
114									
115									
116									
117									
118									
119									
120									
121									
122									

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bedrock Refusal @ ~111' bgs

Groundwater @ ~5.6' bgs

8.9' of Fill Materials (1.0' to 9.9' bgs)

6.9' of Blue Slag (9.9' bgs to 16.8' bgs)

Native Soil @ ~16.8' bgs

GENERAL NOTES:

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.

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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-28/MW09-3 SHEET 1 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04'	PID READINGS	NOTES
1	NA NA 8		1'-2'		0.6'	0.0' 1.0'	Asphalt - not sampled (augered to ~1.0'bgs) Brown, mc SAND and GRAVEL, little Silt, moist, no odor	0.0	
2	8 6					2.0'	As above, moist, no odor		
3	4 4		2'-4'		1.0'		**FILL MATERIALS**	0.0	
4	3 6					2.2'	Reddish to brown, mc SAND (foundry sand), trace blue slag and cinders, moist, no odor		
5	2 2		4'-6'		1.2'	4.0' 4.6'	As above, no blue slag or cinders, moist, no odor As above, wet @~5.0' bgs	0.0	
6	4 2								
7	3 3		6'-8'		2.0'	6.0'	As above, saturated, no odor	0.0	
8	2 3					8.0'	As above, saturated, no odor		
9	6 10		8-'10'		1.2'		**BLUE SLAG**	0.0	
10	12 5					9.4'	Blue slag, saturated, sulfur odor		
11	10 6		10'-12'		1.2'	10.0'	As above, saturated, sulfur odor	0.0	
12	8 6					12.0'	As above, saturated, sulfur odor		
13	12 7		12'-14'		0.5'			0.0	
14	12 5					14.0'	As above, saturated, sulfur odor		
15	17 14		14'-16'		0.9'			0.0	
16	17								

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.
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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-28/MW09-3 SHEET 2 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04'	PID READINGS	NOTES
17	4 3 4		16'-18'		1.4'	16.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.0	
18	3					17.5'	Brown, peat moss, some organic matter/roots, saturated, sulfur odor		
19	2 2 2		18'-20'		0.0'	18.0'	No Recovery	0.0	
20	2								
21	2 2 3		20'-22'		1.2'	20.0'	Grey to brown, SILT, little f Sand, saturated, no odor	0.0	
22	3								
23	NA NA NA						STANDARD SAMPLING BEGINS 22.0' - Bottom	NA	
24	NA								
25	NA 1		25'-27'		1.6'	25.0'	Grey, SILT and CLAY, trace f Sand, saturated, no odor	0.0	
26	1								
27	1 1							NA	
28	NA								
29	NA NA NA							NA	
30	NA								
31	1 1 1 1		30'-32'		1.5'	30.0'	As above, saturated, no odor	0.0	

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.
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LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-28/MW09-3 SHEET 3 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04'	PID READINGS	NOTES
33	NA NA NA NA							NA	
34	NA NA NA 1		35'-37'		1.6'	35.0'	Greyish to brown, SILT, trace Clay and f Sand, saturated, no odor	0.0	
36	1 1 NA NA							NA	
38	NA NA NA NA							NA	
40	WR WR WR WR		40'-42'		2.0'	40.0'	Grey, SILT, trace f Sand, saturated, no odor	0.0	
42	NA NA NA NA							NA	
44	NA NA WR WR		45'-47'		2.0'	45.0'	Grey, SILT, little mf Sand, trace Clay, saturated, no odor	0.0	
46	WR WR NA NA							NA	

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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING **B09-28/MW09-3**
SHEET 4 of 7
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04')	PID READINGS	NOTES
48	NA							NA	
	NA								
	NA								
49	NA								
	NA							0.0	
50	NA		50'-52'		2.0'	50.0'	As above, saturated, no odor		
	WR								
51	WR							NA	
	WR								
52	WR								
	NA								
53	NA							NA	
	NA								
54	NA								
	NA								
55	NA								
	WR					55.0'	As above, saturated, no odor	0.0	
56	WR		55'-57'		1.6'				
	WR								
57	WR							NA	
	NA								
58	NA								
	NA								
59	NA								
	NA							0.0	
60	NA		60'-62'		2.0'	60.0'	Greyish to brown, SILT, little Clay, trace f Sand, wet, no odor		
	2								
61	2								
	2							NA	
62	4								
	NA								
	NA								

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.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING B09-28/MW09-3
SHEET 5 of 7
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04')	PID READINGS	NOTES
63	NA							NA	
	NA								
	NA								
64	NA								
	NA		65'-67'		2.0'	65.0'	Grey, SILT, some Clay, trace f Sand, wet, no odor	0.0	
65	NA								
	WH								
66	WH								
	2							NA	
67	2								
	NA								
68	NA								
	NA							NA	
69	NA								
	NA								
70	NA								
	WH					70.0'	As above, saturated, no odor	0.0	
71	2		70'-72'		2.0'				
	2								
72	1								
	NA							NA	
73	NA								
	NA								
74	NA								
	NA							0.0	
75	NA		75'-77'		2.0'	75.0'	Brown to grey, SILT, little Clay and f Sand, wet, no odor		
	4								
76	4								
	3							NA	
77	5								
	NA								
	NA								

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-28/MW09-3** SHEET 6 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04'	PID READINGS	NOTES
78	NA NA NA							NA	
79	NA								
80	NA NA WH				80'-82'	80.0'	Greyish to brown, SILT, some mf Sand, trace Clay, wet, no odor	0.0	
81	WR WH								
82	3 NA							NA	
83	NA								
84	NA NA NA							NA	
85	NA								
86	WR WR				85'-87'	85.0'	As above, wet, no odor	0.0	
87	2 3								
88	NA NA NA							NA	
89	NA								
90	NA NA 3				90'-92'	90.0'	Grey, SILT, little f Sand, wet, no odor	0.0	
91	3								
92	3 5 NA NA							NA	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-28/MW09-3 SHEET 7 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 252.04' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/14/09 END DATE 7/14/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 252.04' Bottom Elevation: 170.00' Total Depth: 82.04')	PID READINGS	NOTES
93	NA							NA	
	NA								
	NA								
94	NA								
	NA		95'-97'		2.0'	95.0'	Grey, SILT, little f Sand and trace Clay, saturated, no odor	0.0	
95	NA								
	2								
96	4								
	5							NA	
97	6								
	NA								
98	NA								
	NA							NA	
99	NA								
	NA								
100	NA								
	3		100'-102'		2.0'	100'	Grey, SILT, little f Sand and trace Clay, saturated, no odor	0.0	
101	5								
	7								
102	7								
	NA							NA	
103	NA								
	NA								
104	NA								
	NA		105'-107'		2.0'	105'	As above, saturated, no odor	NA	
105	NA								
	WR								
106	WR								
	WH					107'	Reddish to brown, weathered bedrock (Shale), wet, no odor	0.0	
107	50/.2						*Bedrock Refusal @ ~107' bgs*		

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bedrock Refusal @~107' bgs

7.2' of Fill Materials (2.2' to 9.4' bgs)

8.1' of Blue Slag (9.7' to 17.5' bgs)

Native Soil @ ~17.5' bgs

Groundwater @~5.0' bgs

Monitoring well MW09-3 installed to 20.0' bgs. 17.0' of screen (3.0'-20.0')

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-29** SHEET 1 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
1	NA NA		1'-2'		0.4'	0.0'	Asphalt - not sampled (augered to ~1.0'bgs)	0.0	
2	11 12					1.0'	Brown, mc SAND, some c Gravel, moist, no odor		
3	50/5		2'-4'		0.2'	2.0'	As above, moist, no odor	0.0	
4									
5	3 5		4'-6'		1.2'	4.0'	As above, moist, no odor **FILL MATERIALS**	0.0	
6	3 4					4.2' 5.0'	Dark brown, mc SAND, some cinders and coals, moist, no odor AS above, wet @~5.0' bgs, no odor		
7	4 3		6'-8'		1.0'	6.0'	**FOUNDRY SAND** Reddish to brown, mc SAND, trace cinders and coals, saturated, no odor	0.0	
8	3								
9	1 2		8-'10'		1.1'	8.0'	As above, saturated, no odor **BLUE SLAG**	1.3	
10	6 5					9.2'	As above, and Blue Slag, saturated, sulfur odor		
11	3 4		10'-12'		1.3'	10.0'	As above, saturated, sulfur odor	0.2	
12	10 10								
13	9 6		12'-14'		1.3'	12.0'	As above, saturated, sulfur odor	0.6	
14	5 6								
15	4 3		14'-16'		0.9'	14.0'	As above, saturated, sulfur odor **NATIVE SOIL**	0.0	
16	2 1					15.3'	Greyish to brown, SILT, little f Sand and organic matter, saturated, slight sulfur		

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **B09-29** SHEET 2 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
17	2 2 2 3			16'-18'	2.0'	16.0' 17.2'	As above, saturated, no odor Grey, SILT, trace f Sand and Clay, saturated, no odor	0.0	
19	1 2 3 2			18'-20'	2.0'	18.0' 18.4'	As above, saturated, no odor Grey, mc SAND, some organic matter, saturated, no odor	0.0	
21	1 1 1 1			20'-22'	2.0'	20.0' 21.4'	As above, saturated, no odor Grey, SILT and CLAY, trace f Sand, saturated, no odor	0.0	
23	NA NA NA NA						STANDARD SAMPLING BEGINS 22.0' - 106.6'	NA	
25	NA NA 1 1			25'-27'	1.3'	25.0'	As above, saturated, no odor	0.0	
27	1 1 NA NA							NA	
29	NA NA NA NA							NA	
31	2 2 2 2			30'-32'	2.0'	30.0'	Grey, SILT, little mf Sand, trace Clay, saturated, no odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-29 SHEET 3 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
33	NA NA NA NA							NA	
34	NA NA 1 2		35'-37'		2.0'	35.0'	As above, saturated, no odor	0.0	
36	2 2 NA NA							NA	
38	NA NA NA NA							NA	
40	WR WH WH WH		40'-42'		1.8'	40.0'	Grey, SILT, some f Sand, trace Clay, saturated, no odor	0.0	
42	NA NA NA NA							NA	
45	NA NA WR WR		45'-47'		1.5'	45.0'	Grey, SILT, some Clay, little f Sand, saturated, no odor	0.0	
47	WH WH NA NA							NA	

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR= Weight of Rods

WH= Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-29 SHEET 4 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
48	NA							NA	
	NA								
	NA								
49	NA								
50	NA		50'-52'		1.7'	50.0'	As above, saturated, no odor	0.0	
	NA								
	WR								
51	WH								
52	WH							NA	
	1								
	NA								
53	NA								
54	NA							NA	
	NA								
	NA								
55	NA								
56	WR		55'-57'		1.8'	55.0'	Grey, SILT, little mf Sand, trace Clay, saturated, no odor	0.0	
	WH								
	WH								
57	1								
58	NA							NA	
	NA								
	NA								
59	NA								
60	NA		60'-62'		1.8'	60.0'	Grey, SILT, some Clay and mf Sand, saturated, no odor	0.0	
	NA								
	WR								
61	WR								
62	WH							NA	
	WH								
	NA								
	NA								

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

NOTES: WR= Weight of Rods
WH= Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-29 SHEET 5 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
63	NA							NA	
	NA								
	NA								
64	NA								
	NA		65'-67'		1.3'	65.0'	Grey, SILT, some mf Sand, saturated, no odor	0.0	
65	NA								
	WH								
66	WH								
	2							NA	
67	3								
	NA								
68	NA								
	NA							NA	
69	NA								
	NA								
70	NA								
	2					70.0'	Grey, SILT, some organic matter, saturated, no odor	0.0	
71	4		70'-72'		1.7'				
	4					71.2'	Grey, SILT, little mf Sand, saturated, no odor		
72	4								
	NA							NA	
73	NA								
	NA								
74	NA								
	NA							0.0	
75	NA		75'-77'		1.8'				
	WH					75.0'	As above, saturated, no odor		
76	WH								
	1							NA	
77	2								
	NA								
	NA								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WR= Weight of Rods

WH= Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-29 SHEET 6 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
78	NA							NA	
	NA								
	NA								
79	NA								
	NA								
80	NA		80'-82'		1.9'	80.0'	Grey, SILT and mf SAND, trace Clay, saturated, no odor	0.0	
	2								
81	2								
	2							NA	
82	3								
	NA								
83	NA								
	NA							NA	
84	NA								
	NA								
85	NA								
	1					85.0'	As above, saturated, no odor		
86	1		85'-87'		2.0'			0.0	
	2								
87	3								
	NA							NA	
88	NA								
	NA								
89	NA								
	NA								
90	NA		90'-92'		2.0'			0.0	
	WR					90.0'	Grey, SILT and mf SAND, saturated, no odor		
91	WH								
	3								
92	3							NA	
	NA								
	NA								

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

NOTES: WR= Weight of Rods
WH= Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING B09-29 SHEET 7 of 7 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 254.28' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/10/09 END DATE 7/10/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS
			-	

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 254.28' Bottom Elevation: 195.0" Total Depth: 59.28'	PID READINGS	NOTES
93	NA							NA	
	NA								
	NA								
94	NA								
	NA		95'-97'		1.7'	95.0'	Grey, SILT, some f Sand, saturated, no odor	0.0	
95	NA								
	2								
96	5								
	6							NA	
97	8								
	NA								
98	NA								
	NA							NA	
99	NA								
	NA								
100	NA								
	2		100'-102'		1.6'	100'	As above, saturated, no odor	0.0	
101	4								
	6								
102	12								
	NA							NA	
103	NA								
	NA								
104	NA								
	NA		105'-107'		1.7'			0.0	
105	NA					105'	As above, saturated, no odor		
	3								
106	70								
	73					106.6'	Reddish to brown, SHALE (weathered bedrock), saturated, no odor	NA	
107	NA						*Bedrock Refusal @~106.6' bgs*		
	NA								
	NA								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bedrock Refusal @~106.6' bgs

Groundwater @~5.0' bgs

5.0' of Fill Materials (4.2' to 9.2' bgs)

6.1' of Blue Slag (9.2' to 15.3' bgs)

Native Soil @ ~15.3' 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 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

Port Marina Predevelopment Site
Conditions Gap Investigation
Port of Rochester, New York

BORING E09-01
SHEET 1 of 2
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
RILLER Neal Short GROUND SURFACE ELEVATION 276.52' DATUM NAVD88
ABELLA REPRESENTATIVE: E. Dumrese START DATE 7/6/09 END DATE 7/6/09

YPE OF DRILL RIG:
UGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
OCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION (Ground Elevation: 265.98' Bottom Elevation: 235.98' Total Depth: 30.00')	PID READINGS	NOTES
1	2 4 3 4		0'-2'		0.7'	0.0'	Topsoil - not sampled	0.0	
2						1.2'	Brown, mc SAND, little Silt, moist, no odor **FILL MATERIALS**		
3	22 7 2 4		2'-4'		0.6'	2.0'	As above, some crushed concrete, no odor	0.0	
4									
5	2 3 2 2		4'-6'		1.0'	4.0'	Reddish to brown, mc SAND (foundry sand), cinders, coals, and blue slag slight sulfur odor, moist	0.0	
6									
7	5 54 27 13		6'-8'		1.8'	6.0'	As above, no blue slag, moist, slight sulfur odor	0.0	
8									
9	7 11 11 13		8'-10'		2.0'	8.0'	As above, moist, no odor **NATIVE SOIL**	0.0	
10						8.3'	Light brown, SILT, little f Sand, moist, no odor, some iron staining		
1	7 9 11 14		10'-12'		2.0'	10.0'	As above, moist, no odor	0.0	
12						11.2'	Light brown, SILT, little f Sand and Clay, moist, no odor		
13	NA NA NA NA						STANDARD SAMPLING BEGINS 12.0' - 30.0'	NA	
15	NA NA 5 11		14'-16'		2.0'	14.0'	Grey, SILT, little f Sand, moist, no odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING E09-01 SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 276.52' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/6/09 END DATE 7/6/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 265.98' Bottom Elevation: 235.98' Total Depth: 30.00'	PID READINGS	NOTES
17	10								
	10								
	NA								
18	NA								
19	NA								
	NA								
	NA								
20	NA								
21	4		20'-22'		2.0'	20.0'	As above, moist, no odor		
	9								
	12								
22	11								
23	NA								
	NA								
	NA								
24	NA								
25	NA		25'-27'		1.2'	25.0'	Grey, SILT, some mf Sand, trace Clay, moist, no odor		
	NA								
	5								
26	10								
27	11								
	13								
	NA								
28	NA								
29	3		28'-30'		2.0'	28.0'	As above, wet, no odor		
	6								
	11								
30	11								
31							*Bottom @ 30.0' BGS*		

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

NOTES:
Bottom of boring @ 30.0' bgs
6.3' of fill materials including blue slag (2.0'-8.3')
Native soil @ 8.3' bgs
Groundwater @ ~ 28.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING E09-02 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 265.98' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 265.98' Bottom Elevation: 235.98' Total Depth: 30.00'	PID READINGS	NOTES
1	2 3 19 12		0'-2'		1.1'	0.0' 1.0'	Topsoil - not sampled **FILL MATERIALS** Brown, mc SAND and Cinders and Coals, moist, no odor	0.0	
3	6 6 7 8		2'-4'		1.4'	2.0' 2.5'	Foundry Sand, moist, no odor **BLUE SLAG**	0.0	
5	4 5 5 5		4'-6'		0.8'	4.0'	Blue slag, saturated, sulfur odor	0.0	
7	3 1 2 3		6'-8'		0.3'	6.0'	As above, saturated, sulfur odor **RE-WORKED NATIVE SOIL**	0.0	
9	1 2 2 3		8'-10'		1.3'	8.0'	Black, SILT, little f Sand and Clay, saturated, no odor	0.0	
11	1 2 3 2		10'-12'		0.0'	10.0'	No Recovery **NATIVE SOIL**	NA	
13	1 4 4 5		12'-14'		1.8'	12.0'	Light brown, SILT, some Clay, saturated, no odor	0.0	
15	4 6 8 8		14'-16'		2.0'	14.0'	As above, saturated, no odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING E09-02 SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 265.98' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 265.98' Bottom Elevation: 235.98' Total Depth: 30.00'	PID READINGS	NOTES
17	4 4 4 4		16'-18'		0.9'	16.0'	Light brown, SILT and CLAY, saturated, no odor **STANDARD SAMPLING BEGINS 18.0' - 30.0'**	0.0	
19	10 2 2 2		18'-20'		2.0'	18.0' 19.5'	As above, saturated, no odor Grey, CLAY, little Silt, saturated, no odor	0.0	
21	NA NA NA NA							NA	
23	NA NA 23 30		23'-25'		2.0'	23.0'	Grey, mc SAND, little Silt, saturated, no odor **GLACIAL TILL**	0.0	
25	30 32 NA NA					24.0'	Reddish to brown, mc SAND, little Silt, moist, no odor	NA	
27	NA NA NA NA							NA	
29	12 25 26 27		28'-30'		1.9'	28.0'	As above, wet, no odor	0.0	
31							*Bottom @ ~30.0' bgs*		

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

NOTES:
Bottom of boring @ 30' bgs
Groundwater @ ~ 4.0' bgs
3.0' of fill materials including blue slag (1.0'-4.0')
4.0' of blue slag (4.0' - 8.0')
Native soil encountered @ 12.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **E09-03** SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 266.01' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/2/09 END DATE 7/2/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 266.01' Bottom Elevation: 236.01' Total Depth: 30.00'	PID READINGS	NOTES
1	43 13		0'-2'		1.5'	0.0'	Asphalt **FILL MATERIALS**	0.0	
2	4 11					1.2'	Blue slag, cinders, and coals, moist, no odor		
3	7 6		2'-4'		1.9'	2.0'	As above, moist, no odor	0.0	
4	8 13								
5	16 38		4'-6'		1.3'	4.0'	Reddish to brown, mc SAND, some Silt, moist, no odor **BLUE SLAG**	0.0	
6	55 25					5.2'	Blue slag, moist, sulfur odor		
7	11 9		6'-8'		0.3'	6.0'	As above, wet @ ~6.8' bgs	0.0	
8	9 6						**NATIVE SOIL**		
9	2 1		8'-10'		0.9'	8.0'	Light brown, SILT, some Clay, wet, no odor	0.0	
10	2 2								
11	WH WH		10'-12'		1.7'	10.0'	As above, wet, no odor	0.0	
12	3 3								
13	NA NA						STANDARD SAMPLING BEGINS 12.0' - 30.0'	NA	
14	NA NA								
15	NA NA		15'-17'		1.0'				
16	3 6					15.0'	Light brown, SILT, little f Sand and Clay, wet, no odor	0.0	

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES: WH = Weight of Hammer

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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING E09-03 SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 266.01' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/2/09 END DATE 7/2/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 266.01' Bottom Elevation: 236.01' Total Depth: 30.00'	PID READINGS	NOTES
17	6							NA	
	8								
	NA								
18	NA								
	NA							NA	
19	NA								
	NA								
20	2					20.0'	Light brown, SILT and CLAY, little f Sand, wet, no odor	0.0	
	3		20'-22'		2.0'				
21	8						**NATIVE SOIL**		
	15					21.8'	Light brown, , mc SAND and SILT, some c Gravel, wet, no odor		
22	NA							NA	
	NA								
23	NA								
	NA								
24	NA							0.0	
	NA		25'-27'		2.0'				
25	17					25.0'	As above, saturated, no odor		
	21								
26	38							NA	
	33								
27	NA								
	NA								
28	18					28.0'	As above, saturated, no odor	0.0	
	26		28'-30'		1.8'				
29	30								
	35								
30							*Bottom @ 30.0' BGS*		
31									

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 30' bgs

Groundwater @ ~ 6.8' bgs

4.0' of fill materials including blue slag (1.2'-5.2')

2.8' of blue slag (5.2' - 8.0')

Native soil encountered @ 8.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **E09-04** SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 264.88' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/2/09 END DATE 7/2/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 264.88' Bottom Elevation: 234.88' Total Depth: 30.00'	PID READINGS	NOTES
1	26 14 10 7		0'-2'		1.8'	0.0' 1.0'	Asphalt - not sampled **FILL MATERIALS** Brown, mc SAND and GRAVEL, cinders, coals, brick, moist, no odor	0.0	
3	5 4 16 13		2'-4'		2.0'	2.0' 2.9'	As above, little blue slag and foundry sand, moist, slight sulfur odor, **BLUE SLAG** Blue Slag, moist, sulfur odor	0.0	
5	3 5 12 5		4'-6'		0.5'	4.0'	As above, moist, sulfur odor	0.0	
7	8 12 8 2		6'-8'		0.7'	6.0'	As above, moist, some cinders and coals, moist, sulfur odor	0.0	
9	4 7 8 2		8'-10'		0.4'	8.0'	As above, wet @ ~ 8.0' bgs, sulfur odor	0.0	
11	5 2 7 6		10'-12'		0.6'	10.0'	As above, wet, sulfur odor	0.0	
13	2 2 1 2		12'-14'		0.0'	12.0'	No recovery **NATIVE SOIL**	NA	
15	2 2 3 6		14'-16'		2.0'	14.0'	Light brown, SILT, some f Sand, little Clay, wet, no odor	0.0	

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.

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING E09-04 SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 264.88' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/2/09 END DATE 7/2/09

TYPE OF DRILL RIG: _____

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 264.88' Bottom Elevation: 234.88' Total Depth: 30.00'	PID READINGS	NOTES
17	3 2 1		16'-18'		2.0'	16.0'	As above, wet, no odor	0.0	
18	2								
19	3 6 9		18'-20'		1.5'	18.0'	As above, wet, no odor	0.0	
20	2					19.5'	Reddish to brown, SILT and mc SAND, little Gravel, wet, no odor		
21	NA NA NA						STANDARD SAMPLING BEGINS 12.0' - 30.0'	NA	
22	NA								
23	NA NA 29		23'-25'		1.8'	23.0'	Light brown, SILT and mc SAND, some angular Gravel, saturated, very dense, no odor	0.0	
24	100/6								
25	NA							NA	
26	NA								
27	NA NA NA							NA	
28	NA								
29	79 100/5		28'-30'		1.4'	28.0'	As above, moist, very dense, no odor	0.0	
30									
31							*Bottom @ 30.0' BGS*		

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 30' bgs Groundwater @ ~ 8.0' bgs

3.0' of fill materials including blue slag (1.0'-4.0')

10.0' of blue slag (4.0' - 14.0')

Native soil encountered @ 14.0' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING E09-05 SHEET 1 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION

DRILLER Neal Short GROUND SURFACE ELEVATION 262.28' DATUM NAVD88

LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG:

AUGER SIZE AND TYPE 4.25-Inch ID

OVERBURDEN SAMPLING METHOD Split Spoons

ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 262.28' Bottom Elevation: 232.28' Total Depth: 30.00'	PID READINGS	NOTES
1	NA NA 3 4		0'-2'		0.3'	0.0' 1.0'	Asphalt - Not sampled (augered to 1.0' bgs) **FILL MATERIALS** Black, Cinders and mc SAND, moist, no odor	0.0	
2 3	4 4 4 5		2'-4'		1.0'	2.0'	**NATIVE SOIL** Light brown, SILT, little mf Sand, moist, no odor	0.0	
4 5	3 4 7 8		4'-6'		1.4'	4.0'	As above, wet @~5.5' bgs	0.0	
6 7	6 6 7 9		6'-8'		2.0'	6.0'	Light brown, SILT, little f Sand and Clay, wet, no odor	0.0	
8 9	2 3 4 4		8'-10'		0.6'	8.0'	Brownish to grey, SILT and CLAY, saturated, no odor	0.0	
10 11	NA NA NA						**STANDARD SAMPLING BEGINS 10.0' - 30.0'**	NA	
12 13	NA NA 2		13'-15'		1.6'	13.0'	As above, saturated, no odor	NA 0.0	
14 15	5 5 NA					13.5'	Grey, SILT, trace f Sand, wet, no odor	NA	
16	NA								

LEGEND

S - SPLIT SPOON SOIL SAMPLE

U - UNDISTURBED SOIL SAMPLE

C - ROCK CORE SAMPLE

NOTES:

Bottom of boring @ 30' bgs

1.0' of fill materials including blue slag (1.0'-2.0')

Native soil encountered @ 2.0' bgs

Groundwater @ ~5.5' 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	Port Marina Predevelopment Site Conditions Gap Investigation Port of Rochester, New York	BORING **E09-05** SHEET 2 of 2 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc. BORING LOCATION
DRILLER Neal Short GROUND SURFACE ELEVATION 262.28' DATUM NAVD88
LABELLA REPRESENTATIVE: E. Dumrese START DATE 7/1/09 END DATE 7/1/09

TYPE OF DRILL RIG: _____
AUGER SIZE AND TYPE 4.25-Inch ID
OVERBURDEN SAMPLING METHOD Split Spoons
ROCK DRILLING METHOD

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	NO.	DEPTH (FT.)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION Ground Elevation: 262.28' Bottom Elevation: 232.28' Total Depth: 30.00'	PID READINGS	NOTES
17	NA								
	NA								
	NA								
18	NA								
	1					18.0'	Grey, SILT and CLAY, saturated, no odor		
19	1		18'-20'		1.6'				
	1								
20	1								
	NA								
21	NA								
	NA								
22	NA								
	NA								
23	NA		23'-25'		2.0'				
	2					23.0'	Grey, mc SAND, some Silt, saturated, no odor		
24	2								
	1								
25	1								
	NA								
26	NA								
	NA								
27	NA								
	NA								
28	NA								
	1					28.0'	As above, saturated, no odor		
29	1		28'-30'		2.0'				
	1								
30	1								
							Bottom @ ~30.0' bgs		
31									

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

NOTES:
Bottom of boring @ 30' bgs
1.0' of fill materials (1.0'-2.0')
Native soil encountered @ 2.0' bgs
Groundwater @ ~5.5' bgs

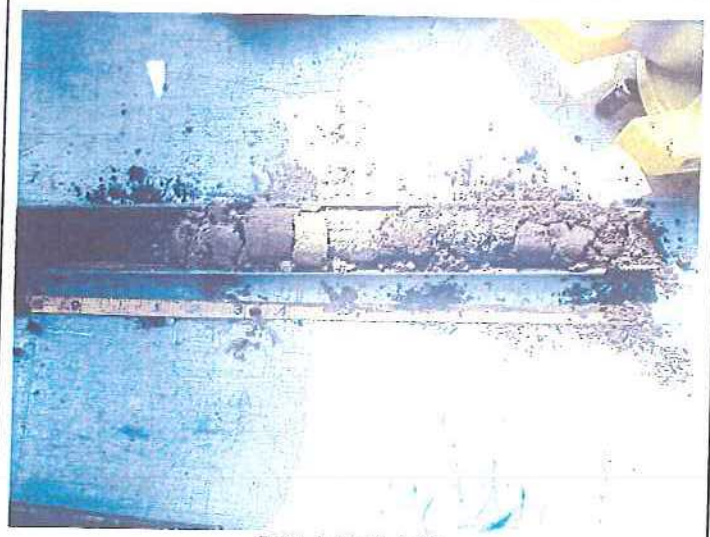
GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE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

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

Appendix 2

Photo Log

B09-1 (0.0'-2.0')



B09-1 (2.0'-4.0')

B09-1 (4.0'-6.0')

B09-1 (6.0'-8.0')

B09-1 (8.0'-10')

B09-1 (10'-12')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: B09-1
Port of Rochester,Rochester, New York 14606

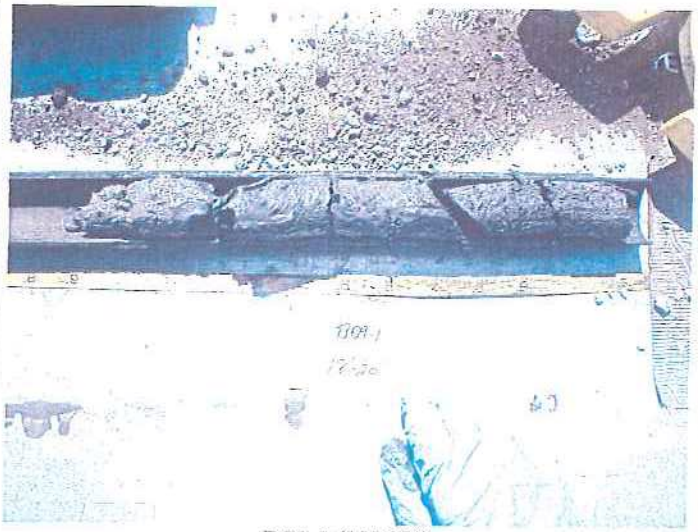
LABELLA

B09-1 (12'-14')

B09-1 (14'-16')

Photo Not Available

B09-1 (16'-18')



B09-1 (18'-20')

B09-1 (20'-22')

B09-1 (22'-24')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: B09-1
Port of Rochester,Rochester, New York 14606

LABELLA

B09-1 (25'-27')

B09-1 (30'-32')

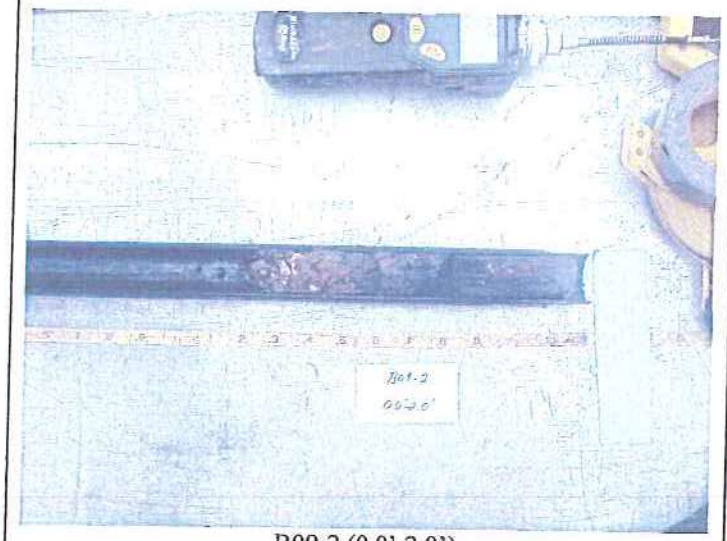
B09-1 (35'-37')

B09-1 (40'-42')

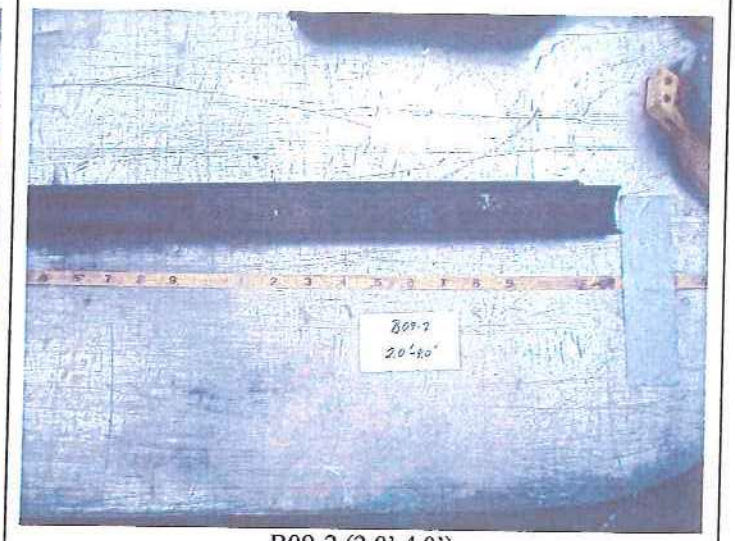
B09-1 (45'-47')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: B09-1
Port of Rochester,Rochester, New York 14606

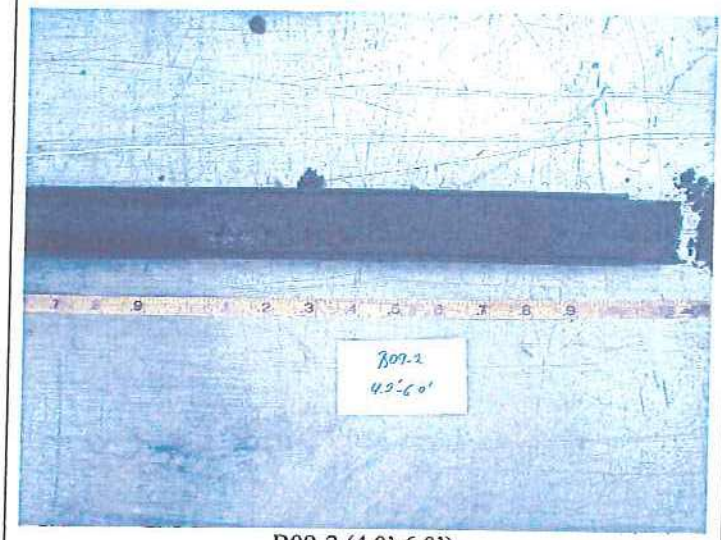
LABELLA



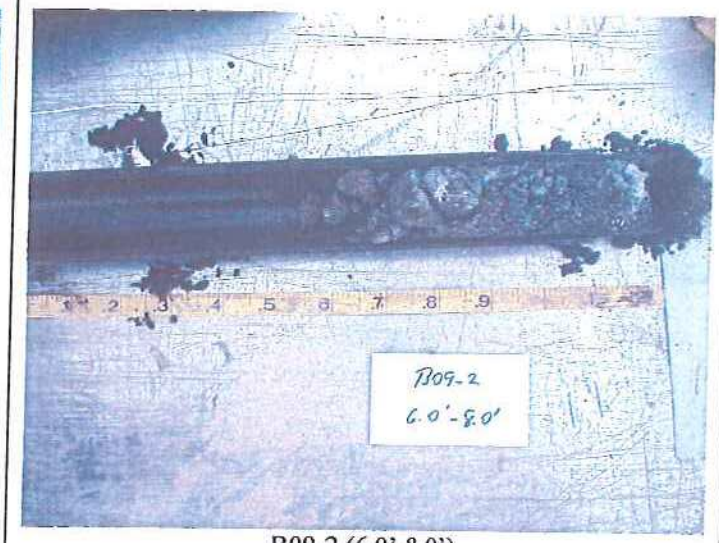
B09-2 (0.0'-2.0')



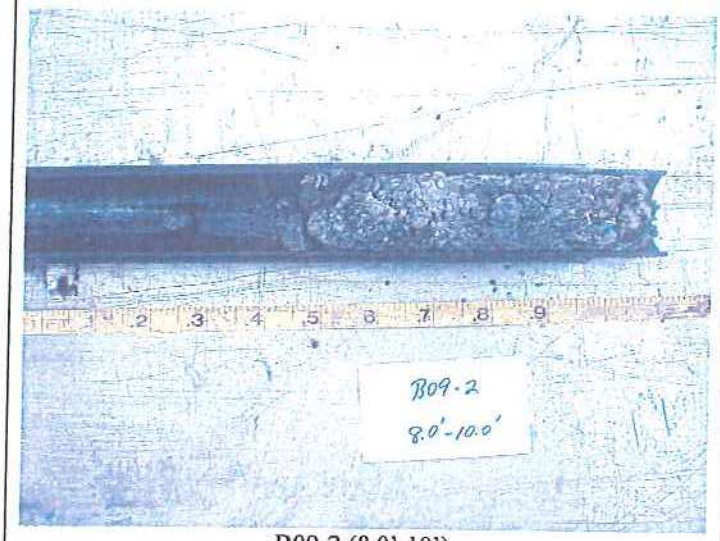
B09-2 (2.0'-4.0')



B09-2 (4.0'-6.0')



B09-2 (6.0'-8.0')



B09-2 (8.0'-10')

B09-2 (10'-12')

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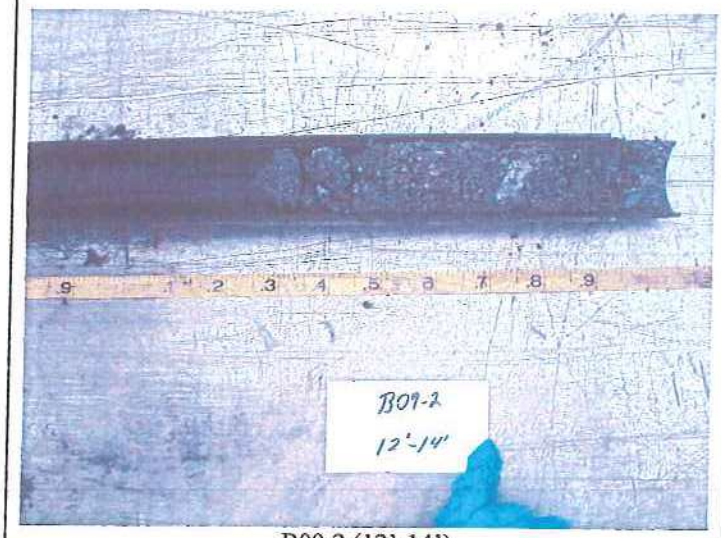
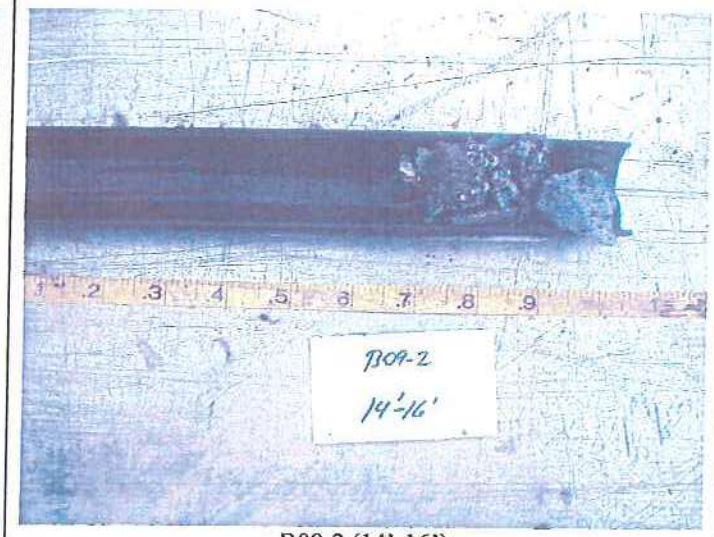
LABELLA

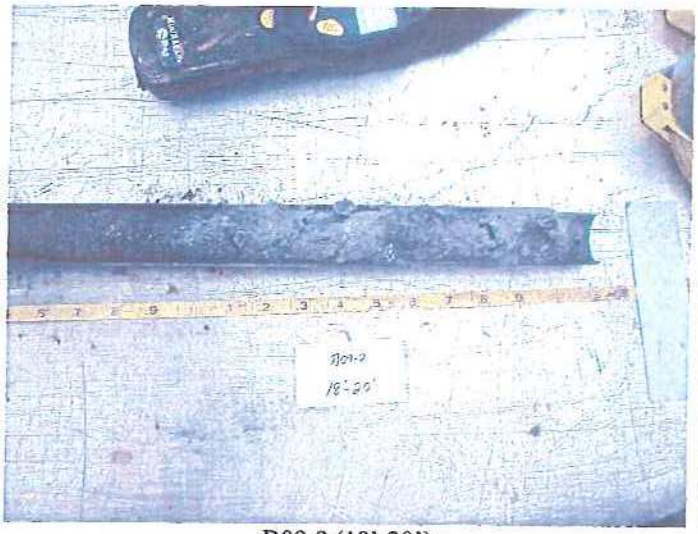


B09-2 (12'-14')

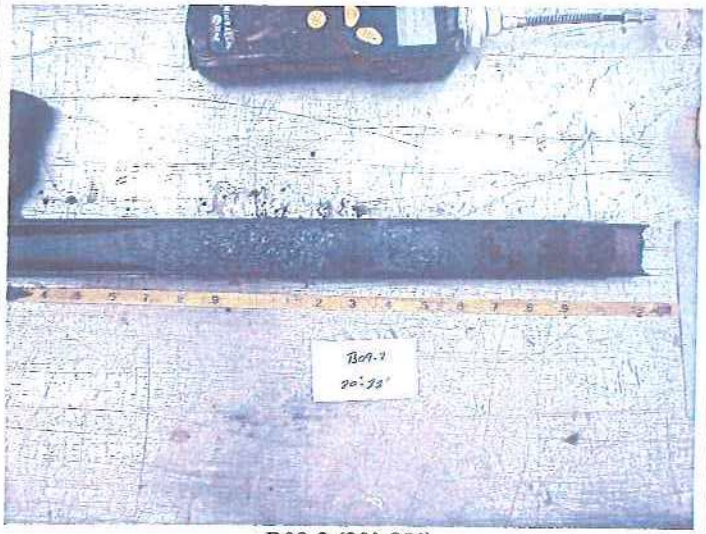


B09-2 (14'-16')

B09-2 (16'-18')



B09-2 (18'-20')



B09-2 (20'-22')

B09-2 (22'-24')

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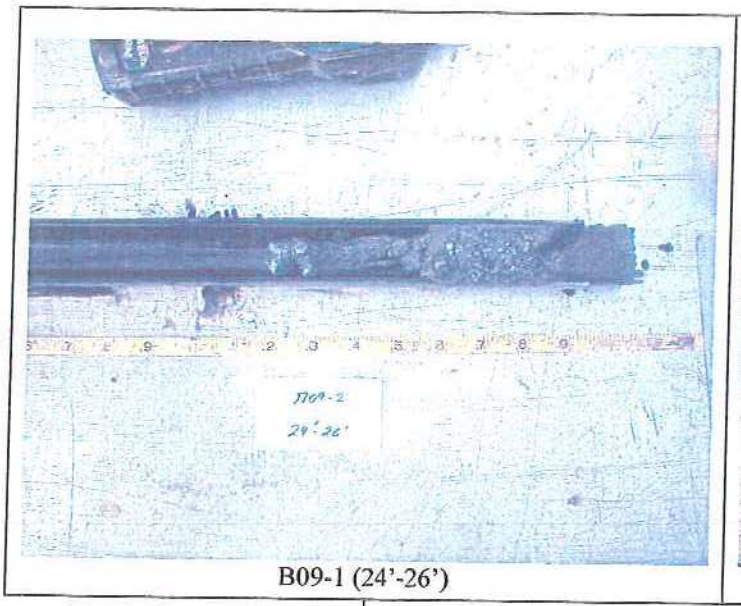
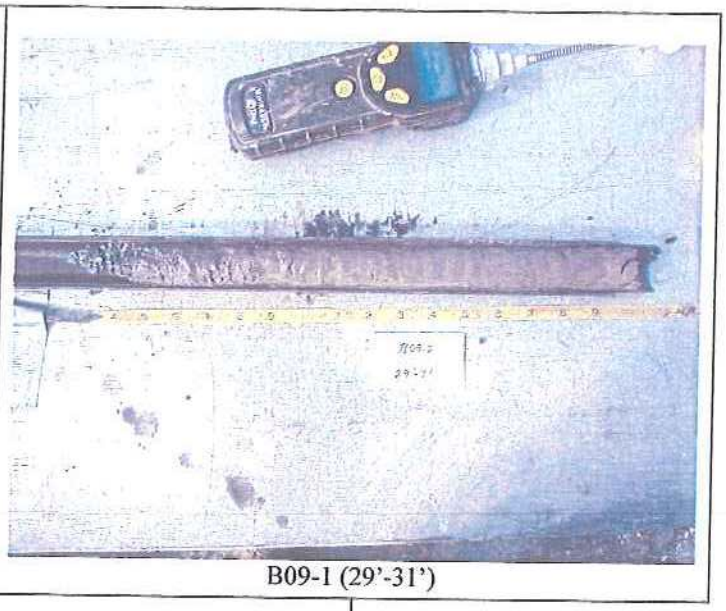
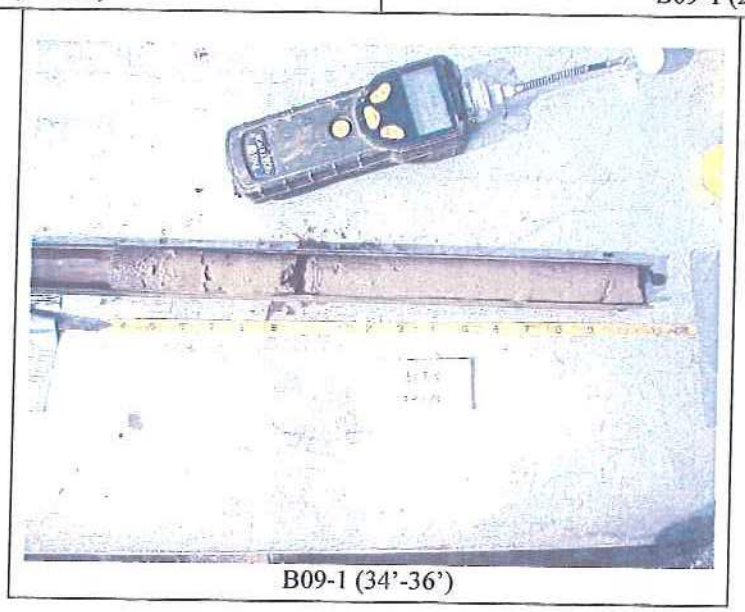
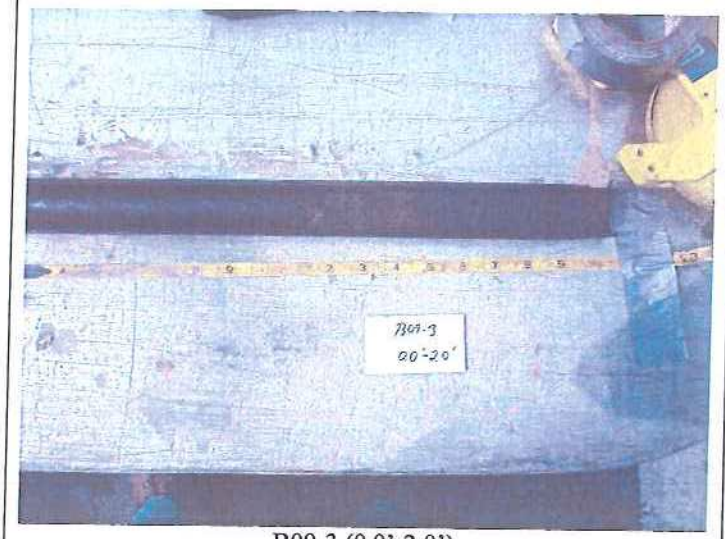
LABELLA



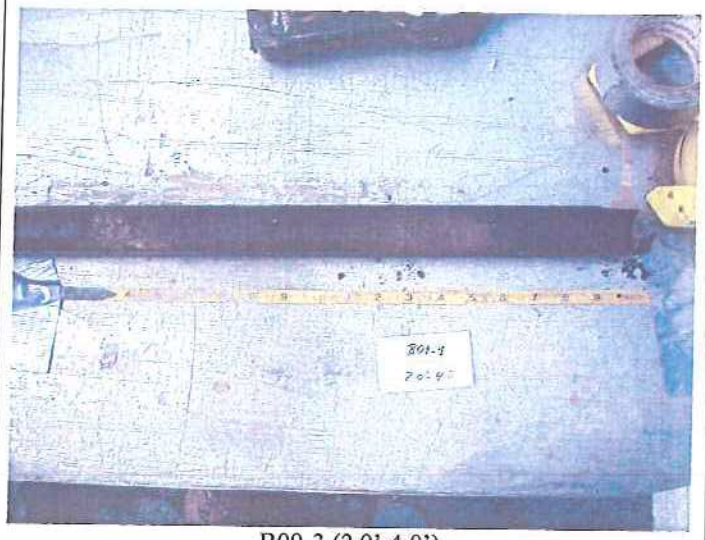
B09-1 (24'-26')


B09-1 (29'-31')


B09-1 (34'-36')

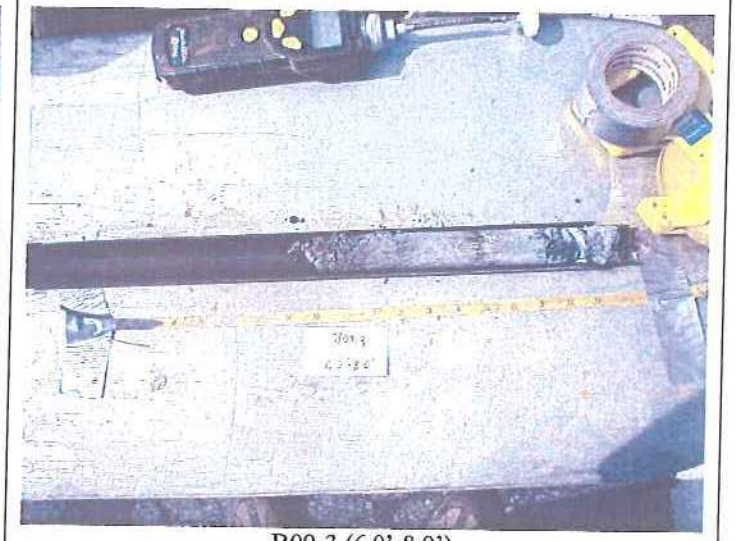


B09-3 (0.0'-2.0')



B09-3 (2.0'-4.0')

B09-3 (4.0'-6.0')



B09-3 (6.0'-8.0')

B09-3 (8.0'-10')

B09-3 (10'-12')

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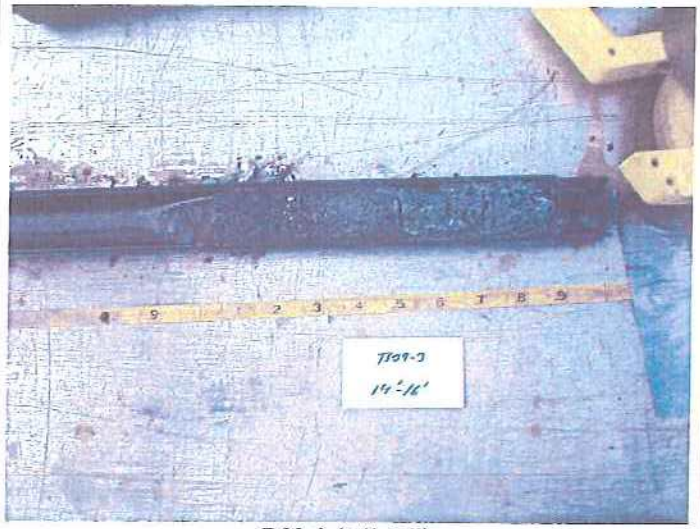
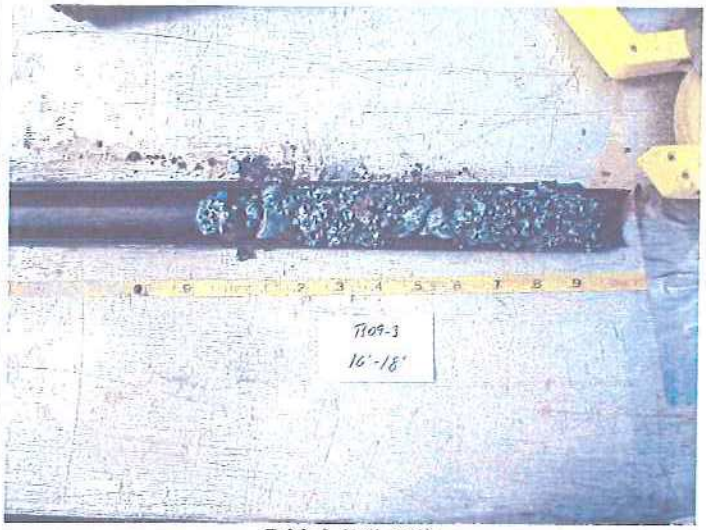
LABELLA

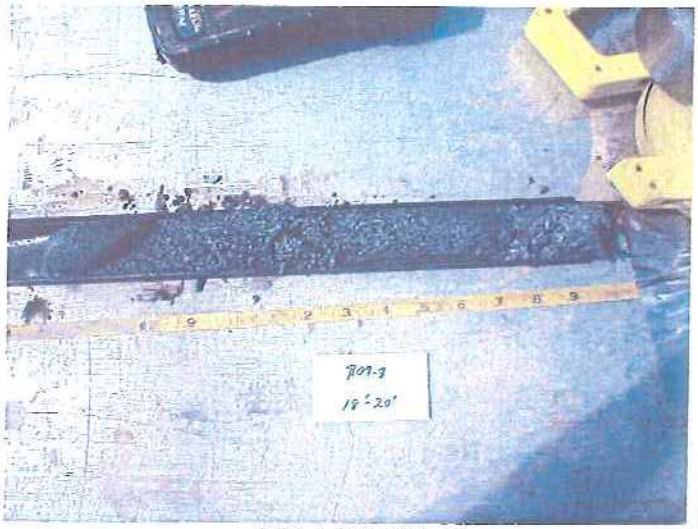
B09-3 (12'-14')



B09-3 (14'-16')



B09-3 (16'-18')



B09-3 (18'-20')

B09-3 (20'-22')

B09-3 (22'-24')

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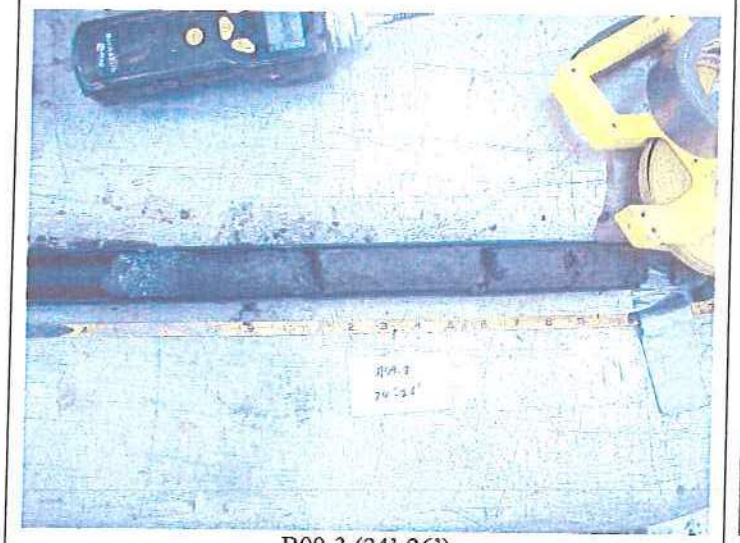
LABELLA



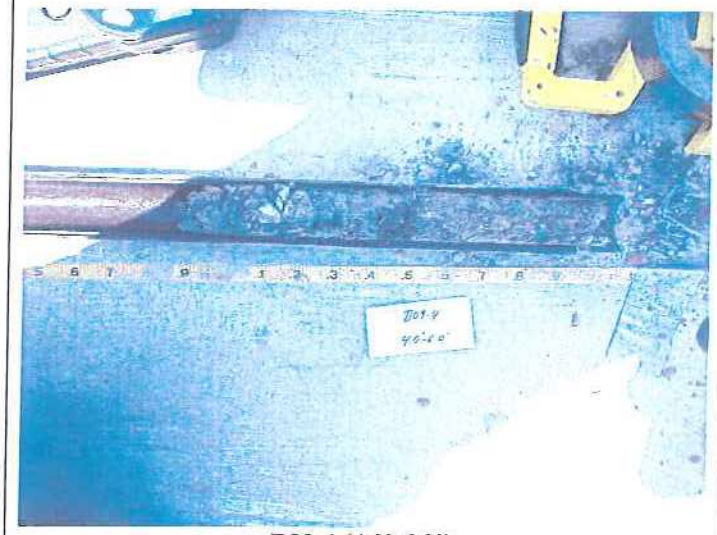
B09-3 (24'-26')

B09-3 (29'-31')

B09-3 (34'-36')

B09-4 (0.0'-2.0')

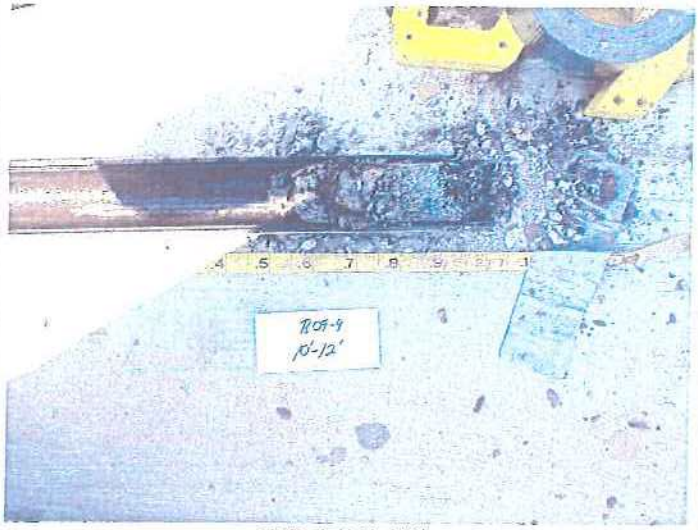
B09-4 (2.0'-4.0')



B09-4 (4.0'-6.0')

B09-4 (6.0'-8.0')

B09-4 (8.0'-10')



B09-4 (10'-12')

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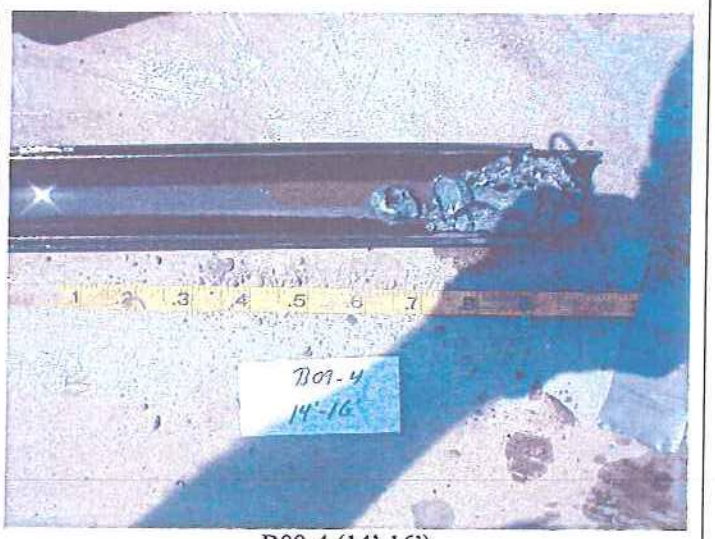
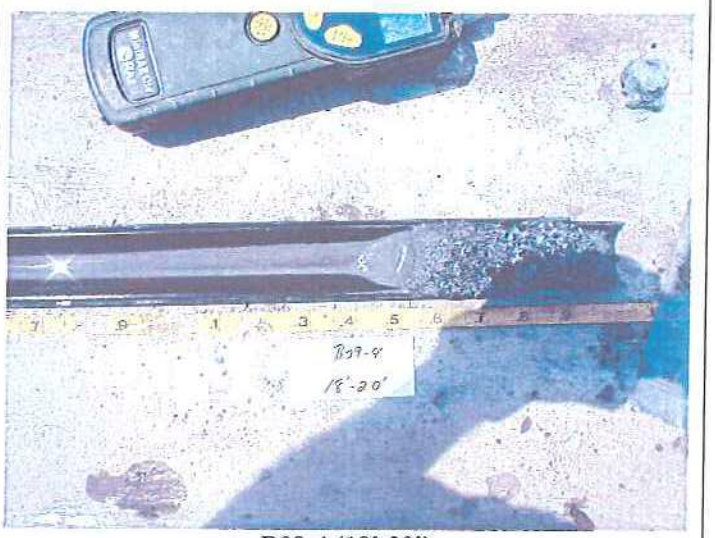
LABELLA

B09-4 (12'-14')



B09-4 (14'-16')

B09-4 (16'-18')



B09-4 (18'-20')

B09-4 (20'-22')

B09-4 (24'-26')

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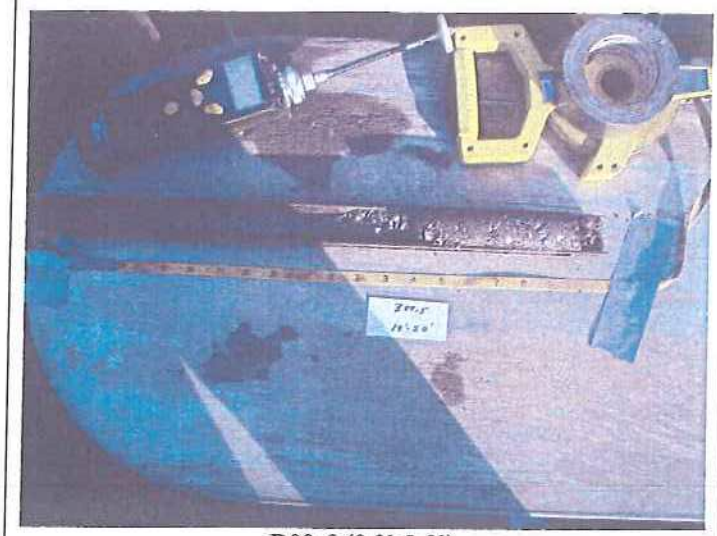
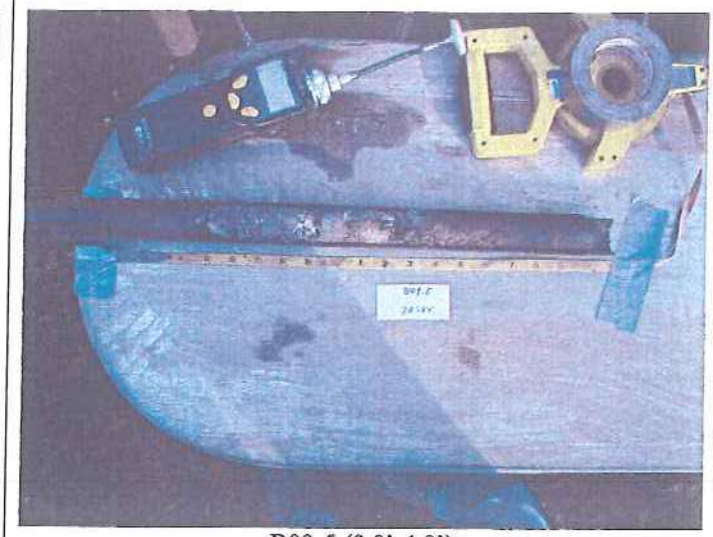
LABELLA

B09-4 (35'-37')



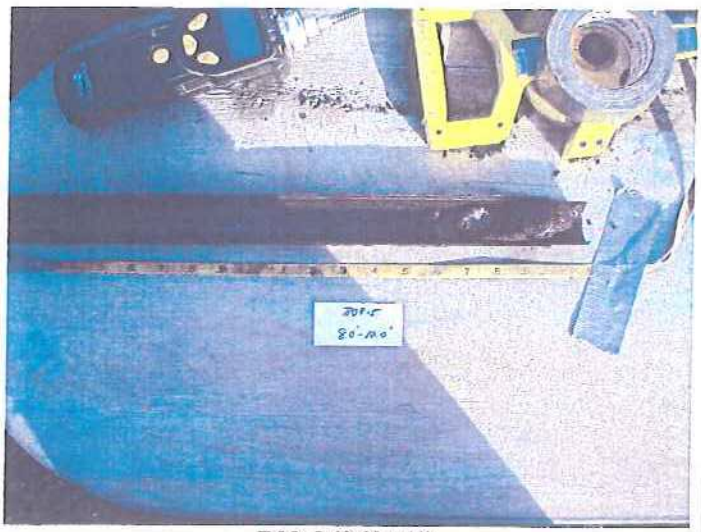
B09-5 (0.0'-2.0')



B09-5 (2.0'-4.0')

B09-5 (4.0'-6.0')

B09-5 (6.0'-8.0')



B09-5 (8.0'-10')

B09-5 (10'-12')

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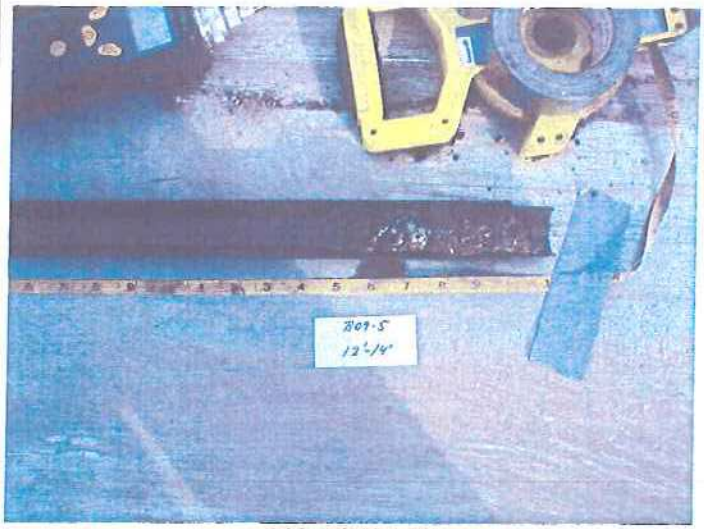
LABELLA

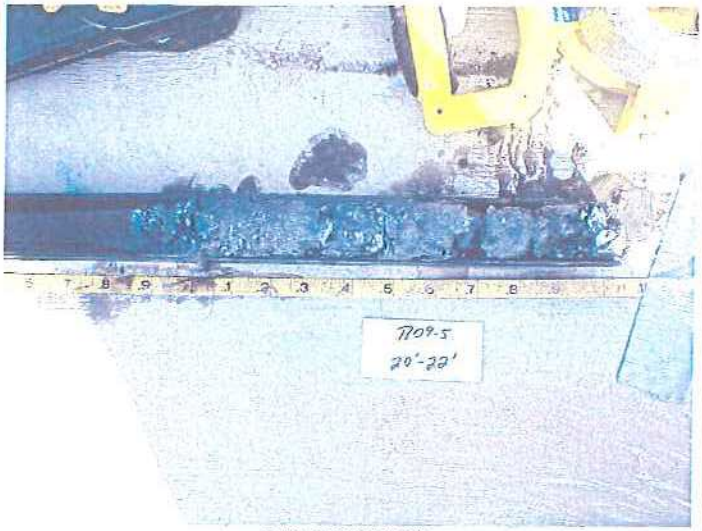


B09-5 (12'-14')

B09-5 (14'-16')

B09-5 (16'-18')

B09-5 (18'-20')



B09-5 (20'-22')

B09-5 (24'-26')

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LABELLA

B09-5 (26'-28')

B09-5 (30'-32')

B09-5 (35'-37')

B09-5 (40'-42')

B09-5 (45'-47')

B09-5 (47'-47.5')

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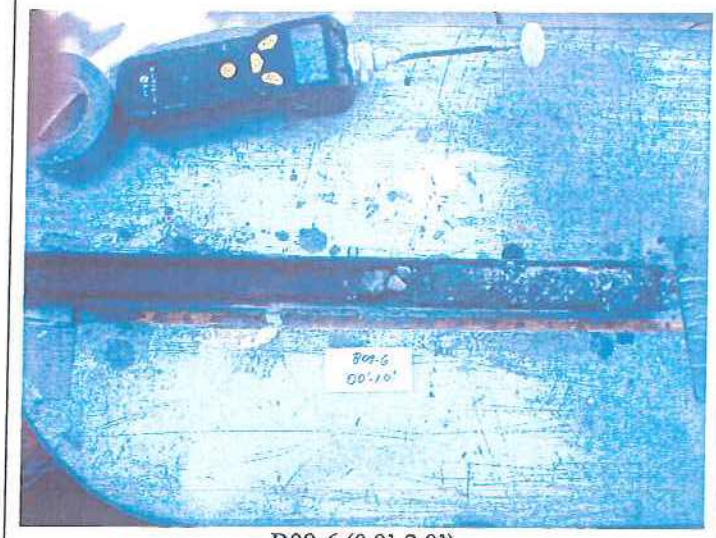
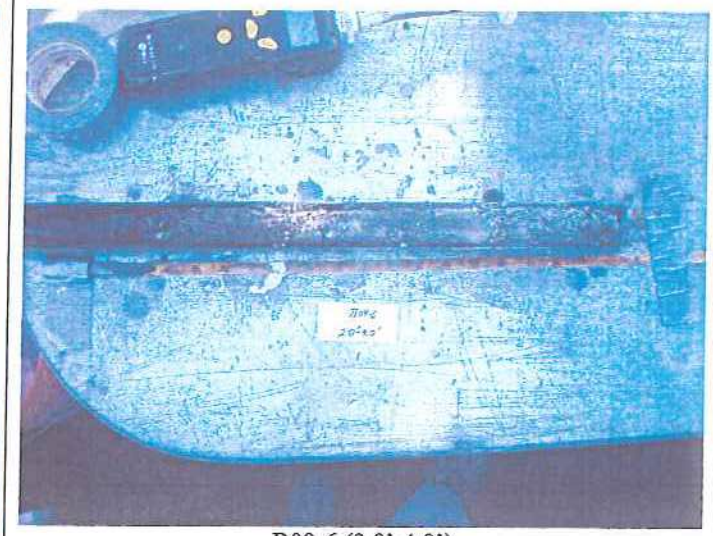
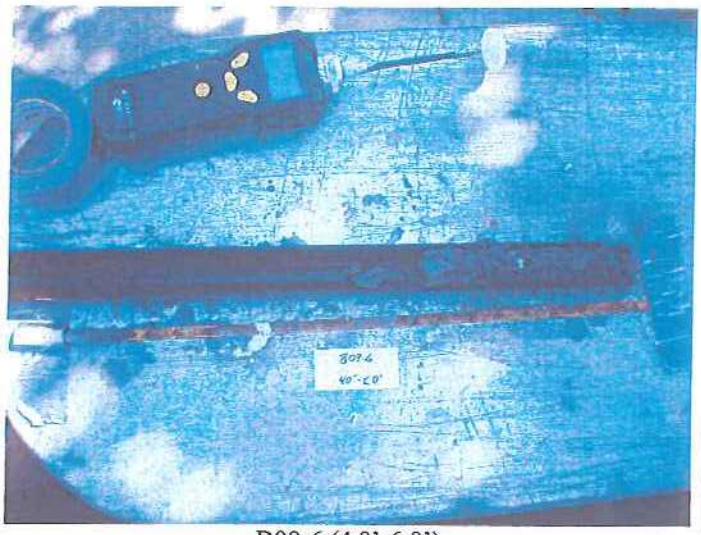
LABELLA



B09-6 (0.0'-2.0')

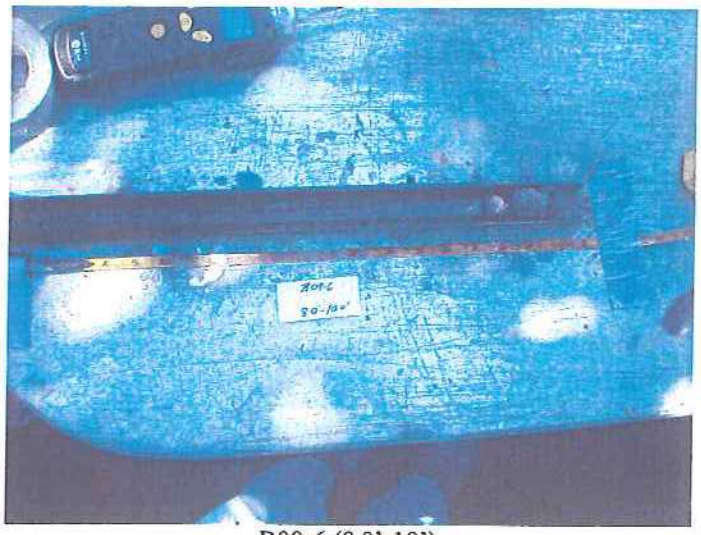


B09-6 (2.0'-4.0')

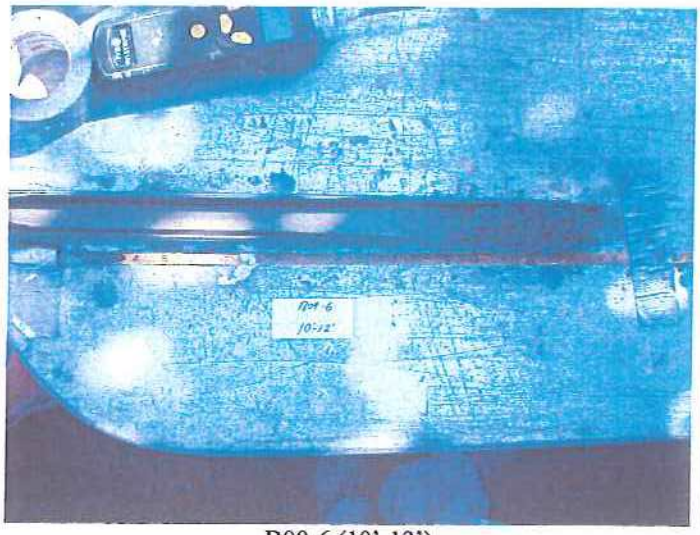


B09-6 (4.0'-6.0')

B09-6 (6.0'-8.0')



B09-6 (8.0'-10')



B09-6 (10'-12')

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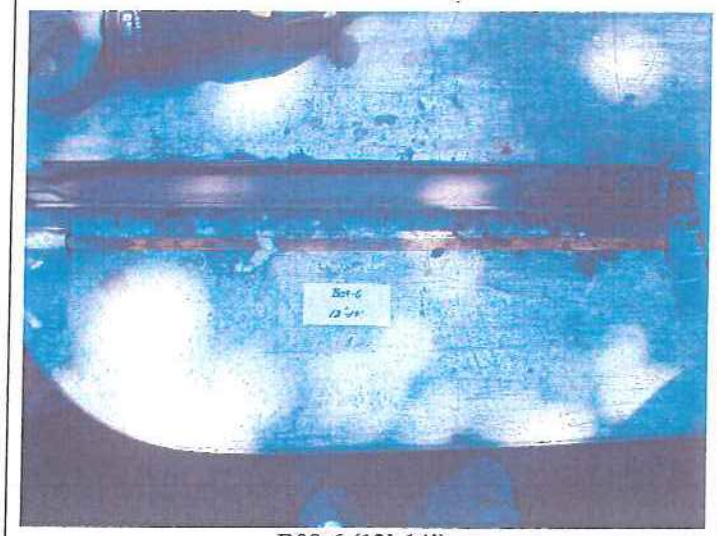
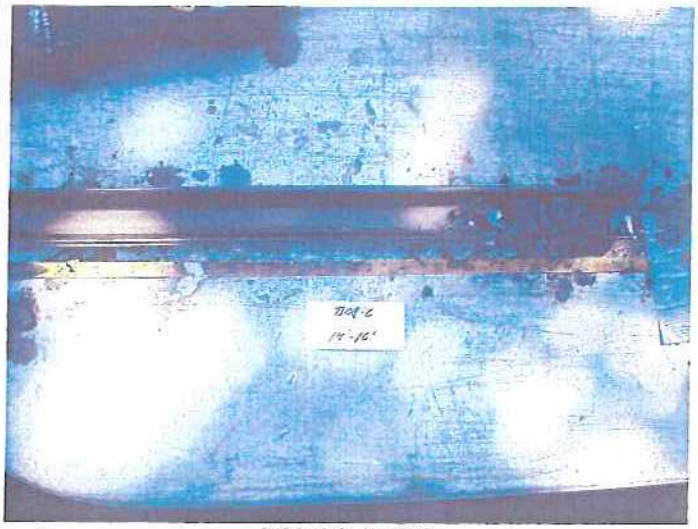
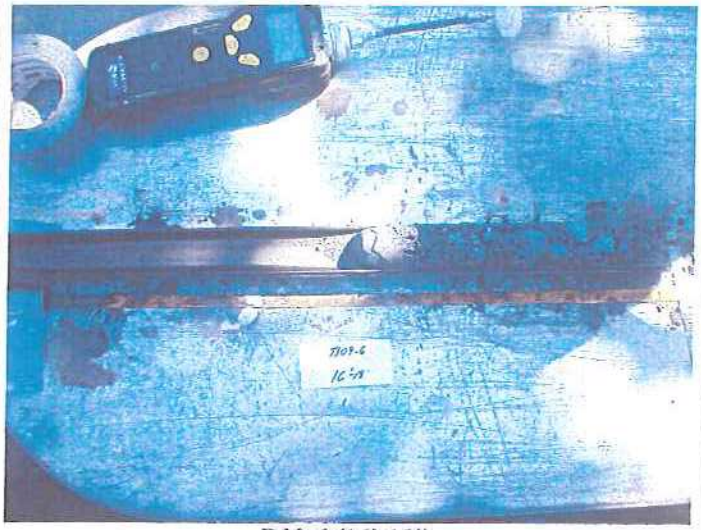
LABELLA



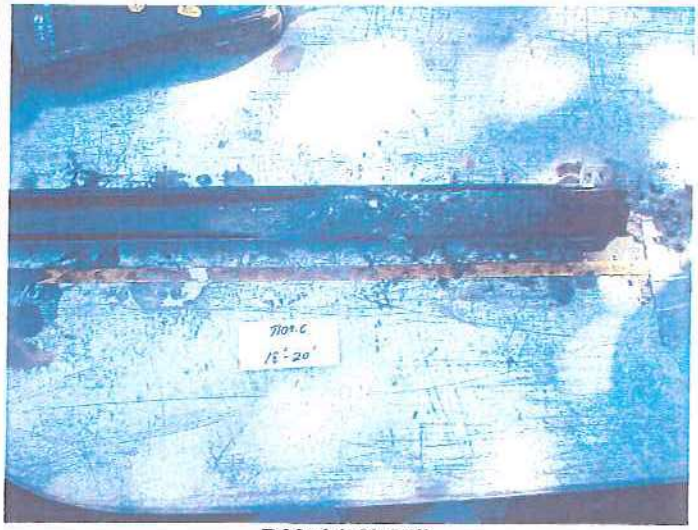
B09-6 (12'-14')



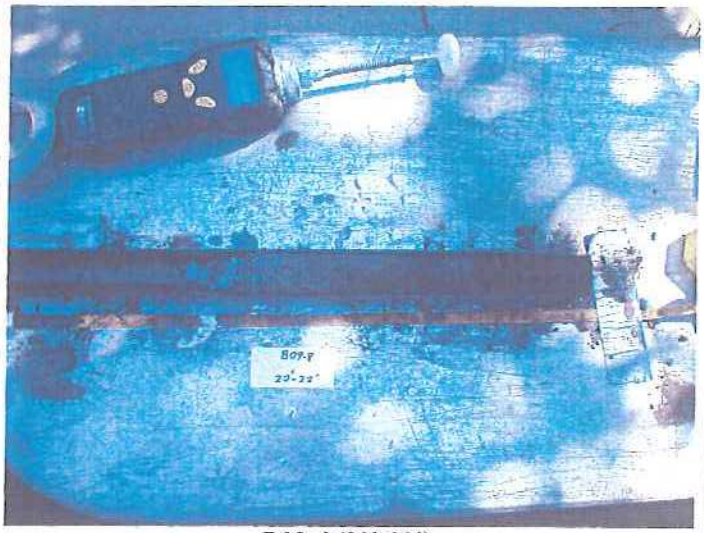
B09-6 (14'-16')



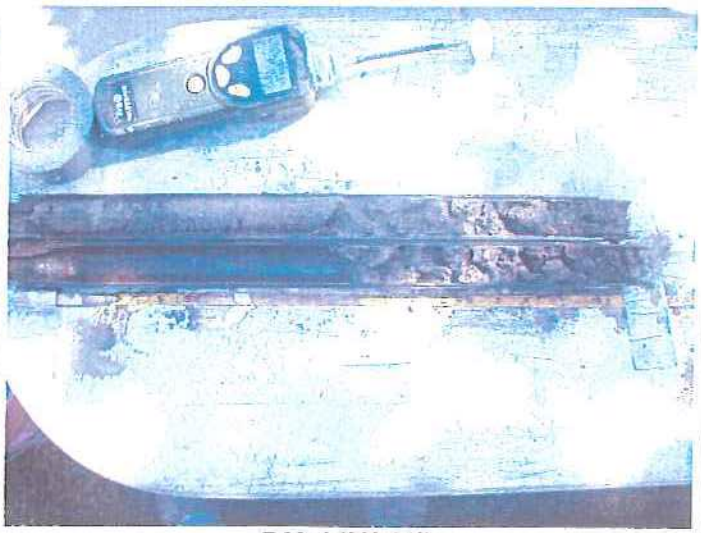
B09-6 (16'-18')



B09-6 (18'-20')



B09-6 (20'-22')



B09-6 (22'-24')

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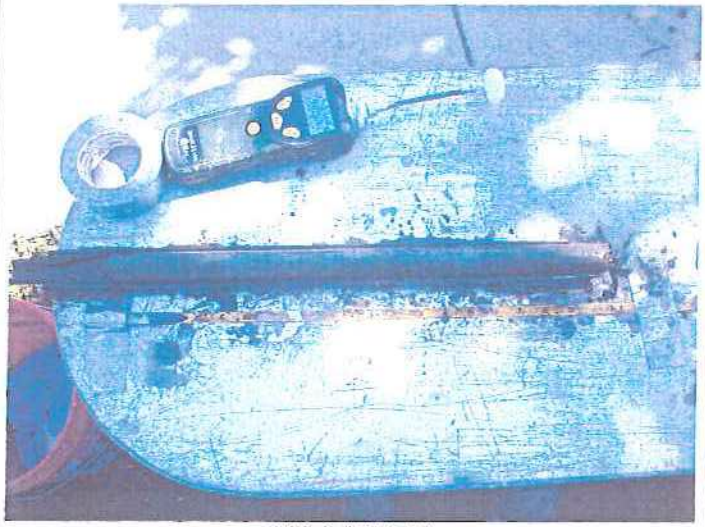
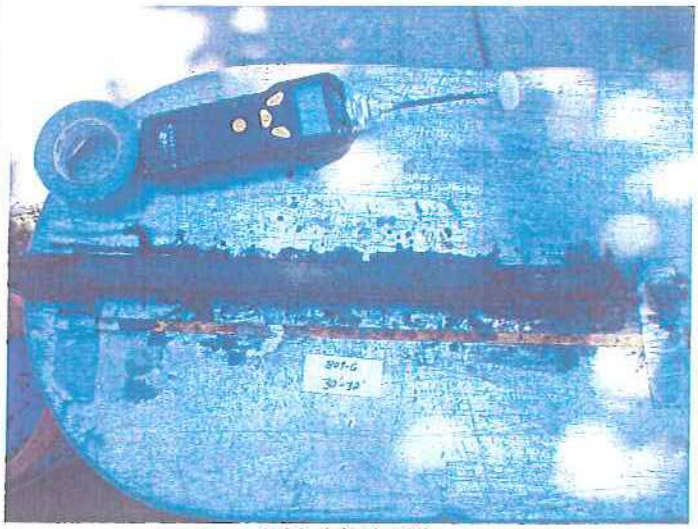
LABELLA



B09-6 (25'-27')

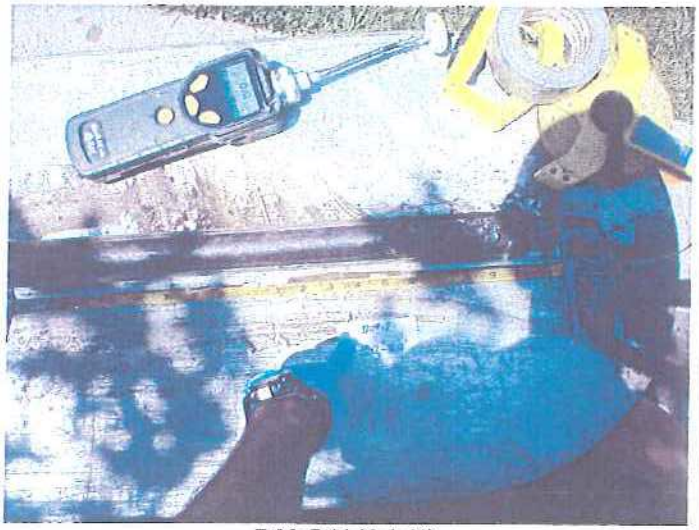


B09-6 (30'-32')

B09-7 (0.0'-2.0')

B09-7 (2.0'-4.0')

B09-7 (4.0'-6.0')



B09-7 (6.0'-8.0')

Photo Not Available

B09-7 (8.0'-10')

B09-7 (10'-12')

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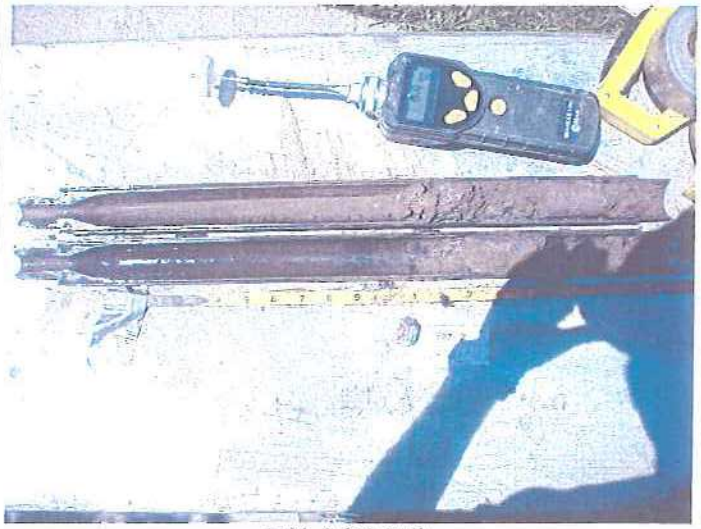
LABELLA

B09-7 (12'-14')

B09-7 (14'-16')



B09-7 (19-21')

B09-7 (24'-26')

B09-7 (29'-31')

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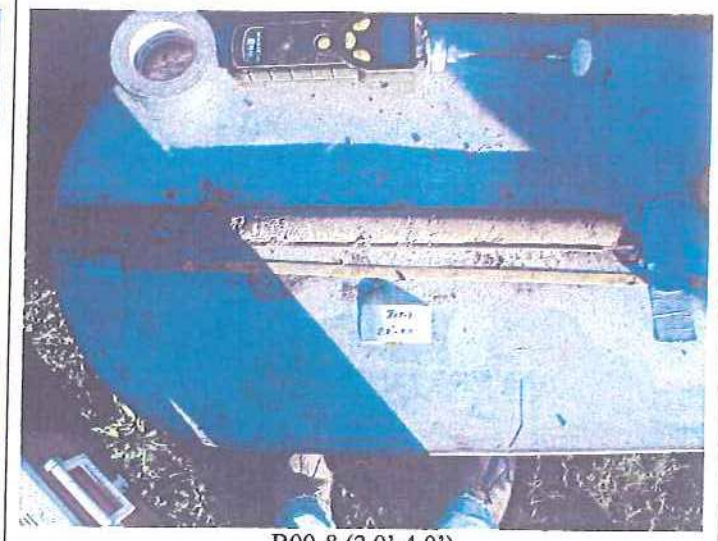
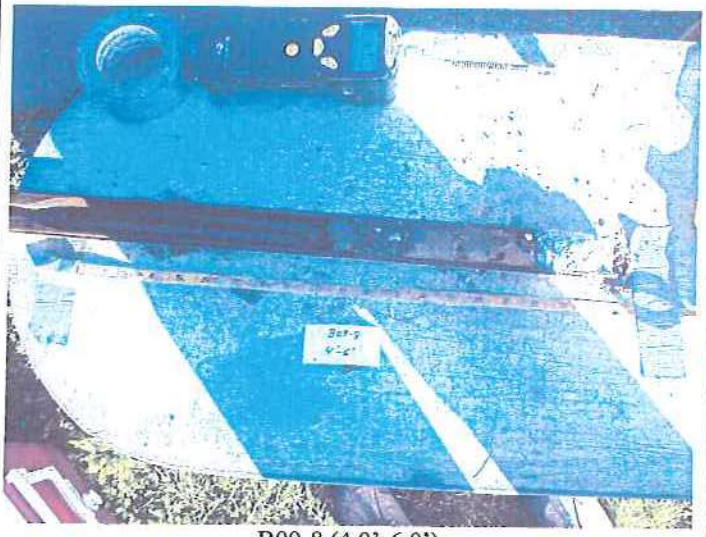
LABELLA

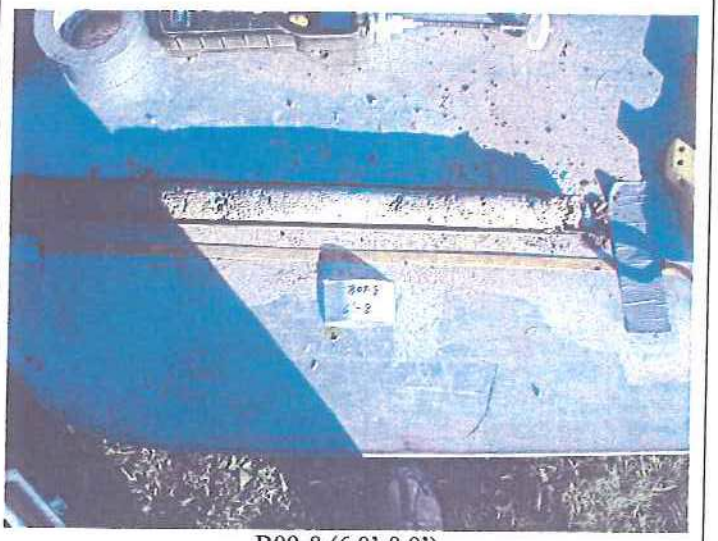
B09-8 (0.0'-2.0')



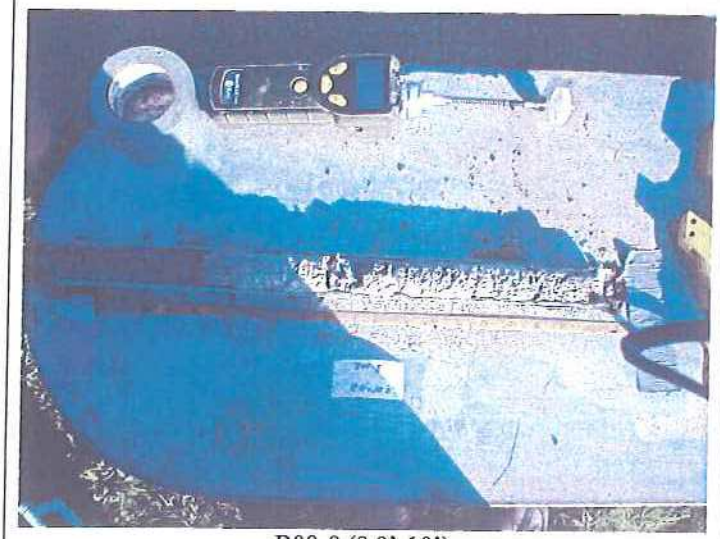
B09-8 (2.0'-4.0')



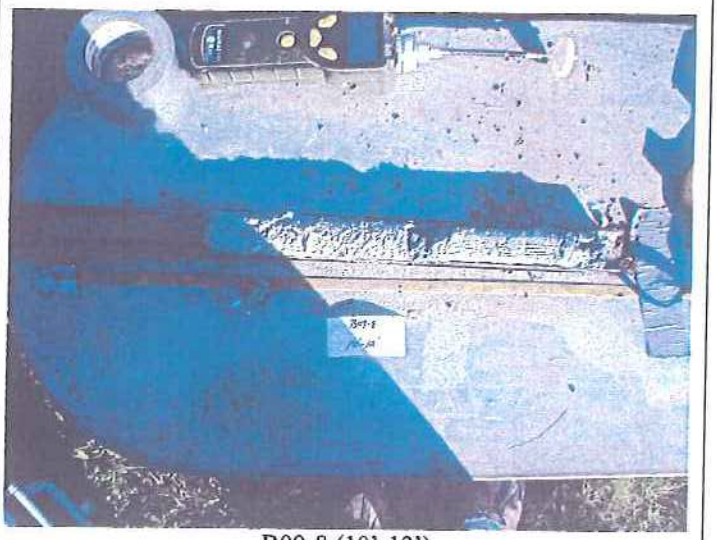
B09-8 (4.0'-6.0')



B09-8 (6.0'-8.0')



B09-8 (8.0'-10')



B09-8 (10'-12')

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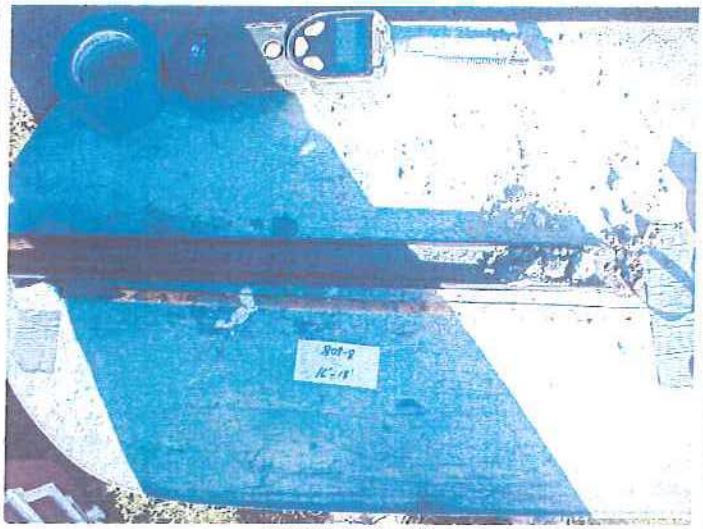
LABELLA

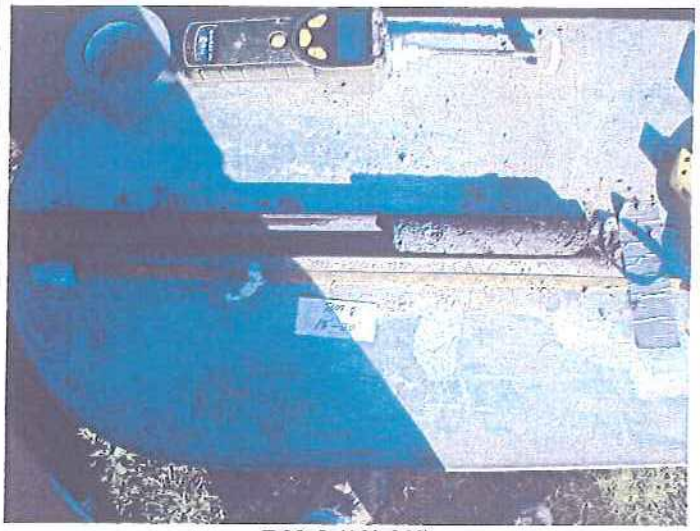
B09-8 (12'-14')

Photo Not Available

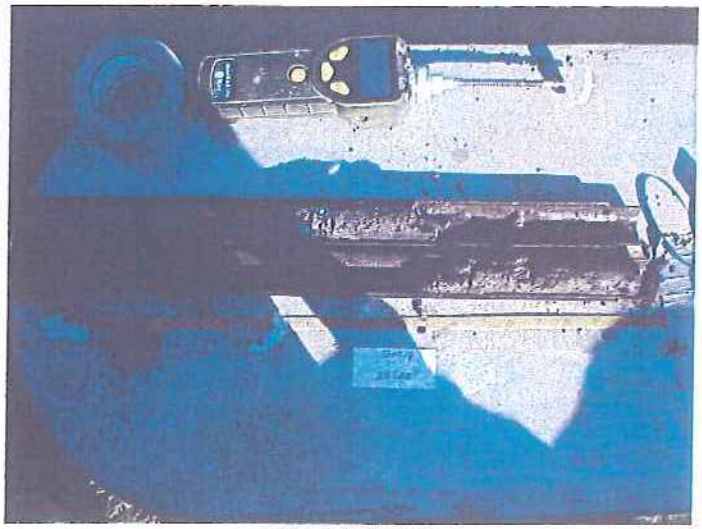
B09-8 (14'-16')



B09-8 (16'-18')



B09-8 (18'-20')



B09-8 (20'-22')

B09-8 (22'-24')

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Proposed Marina
Soil Boring: B09-8
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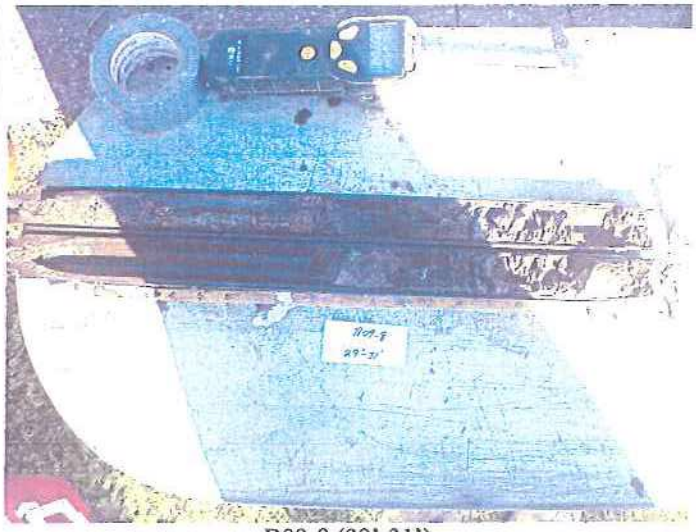
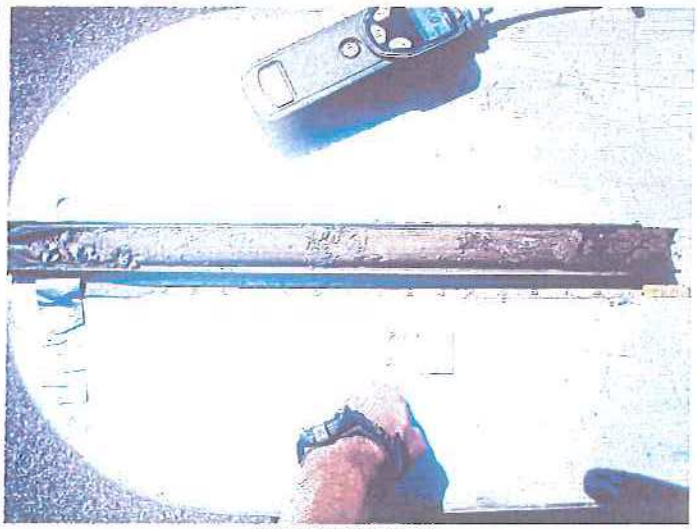
LABELLA

B09-8 (24'-26')

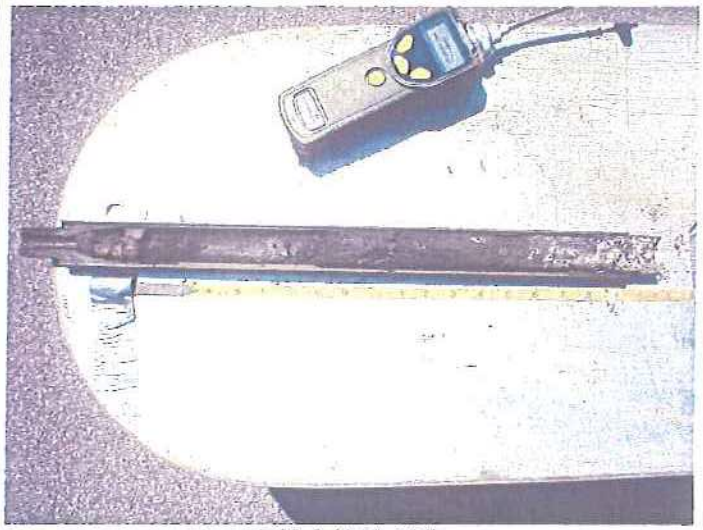


B09-8 (29'-31')

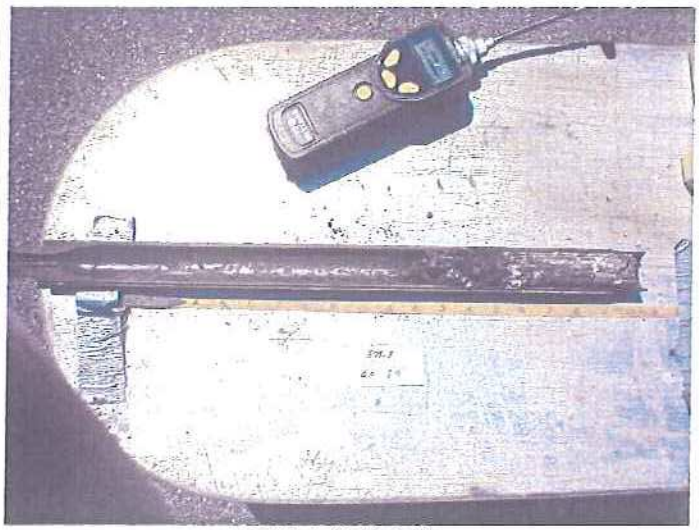
B09-9 (0.0'-2.0')



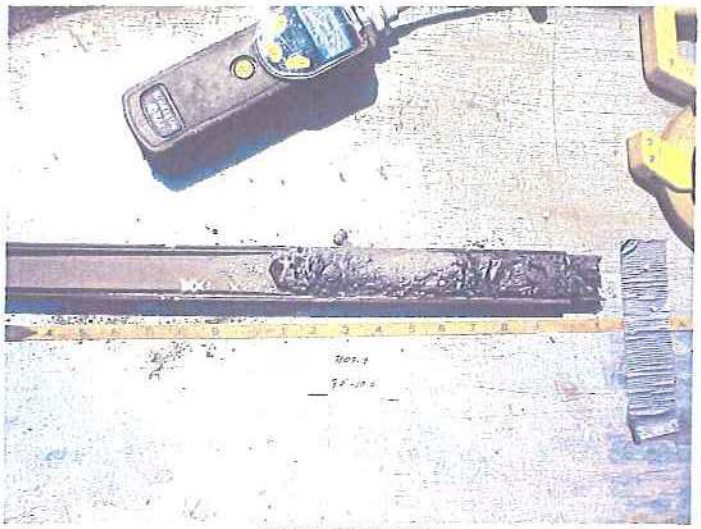
B09-9 (2.0'-4.0')



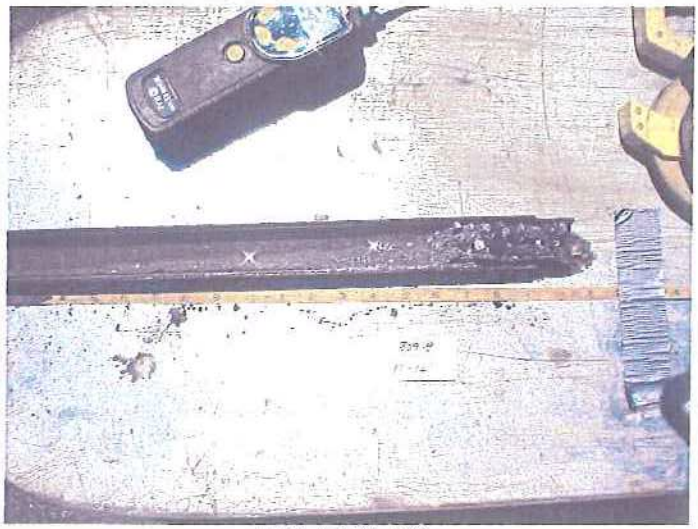
B09-9 (4.0'-6.0')



B09-9 (6.0'-8.0')



B09-9 (8.0'-10')



B09-9 (10'-12')

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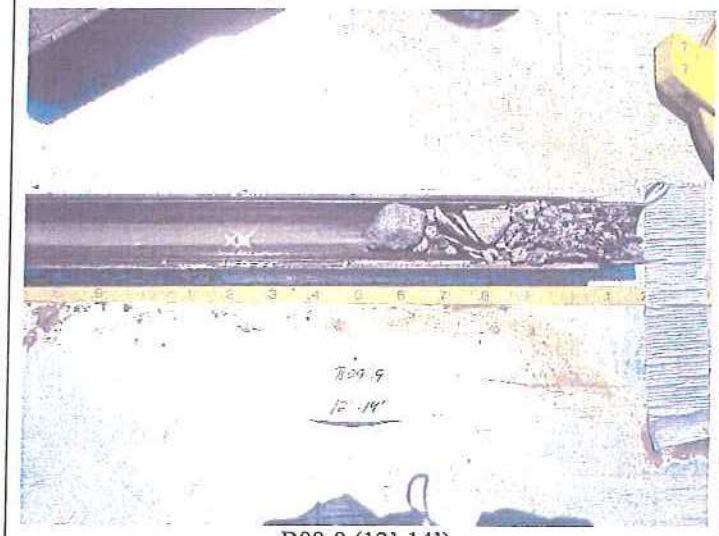
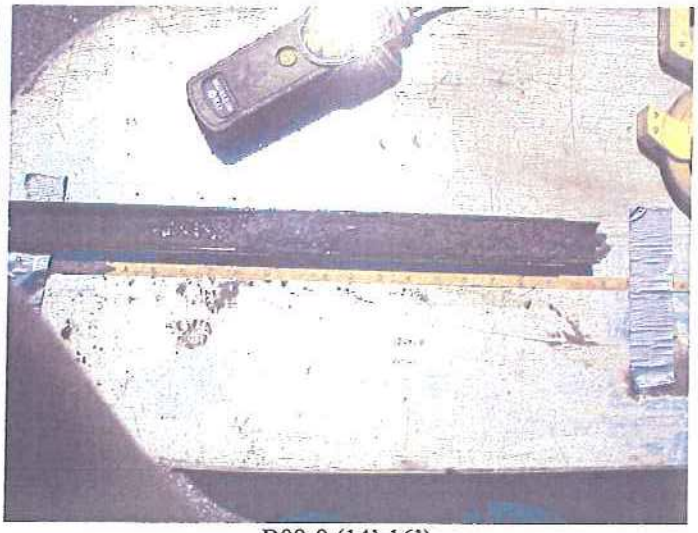
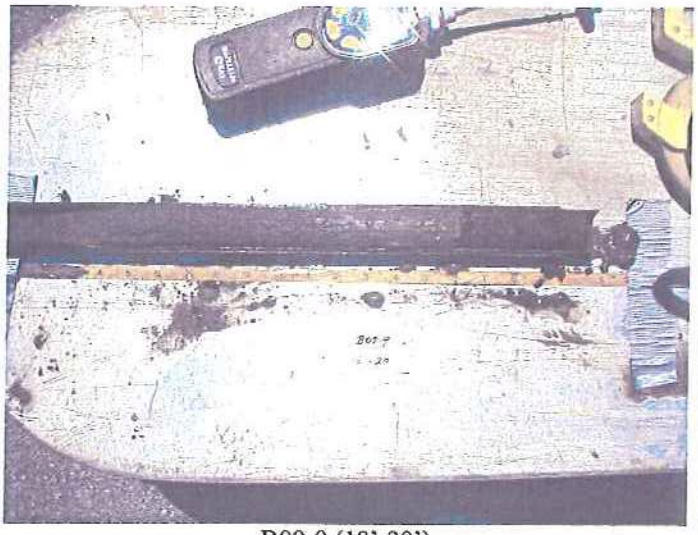
LABELLA

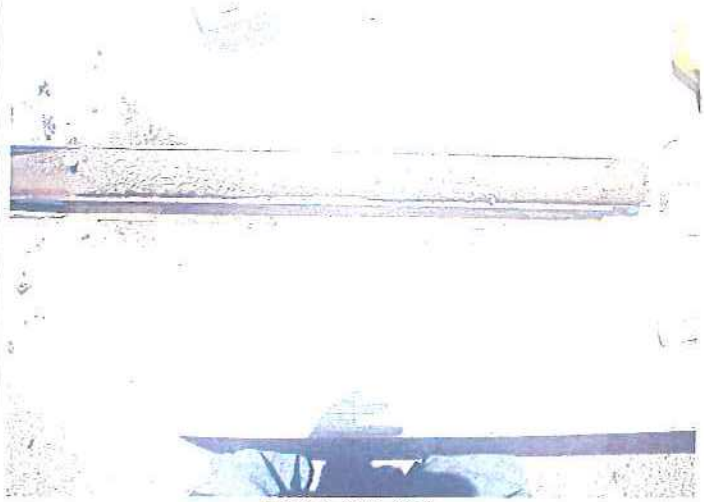


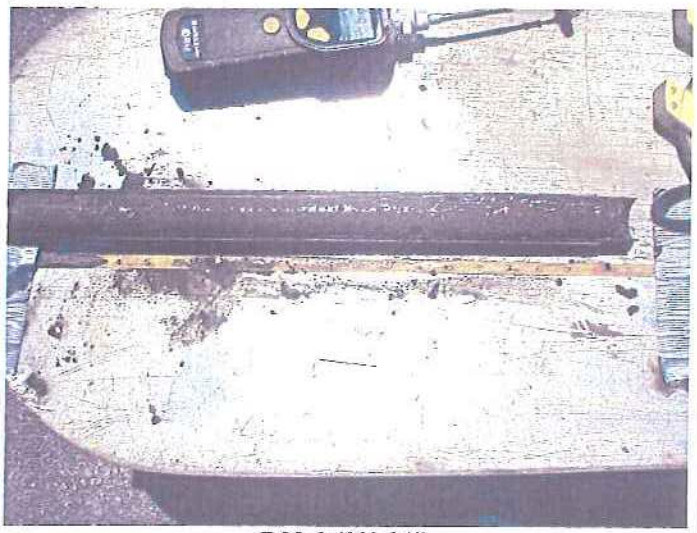
B09-9 (12'-14')


B09-9 (14'-16')


B09-9 (16'-18')


B09-9 (18'-20')


B09-9 (24'-26')


B09-9 (32'-34')

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LABELLA

B09-9 (35'-37')

B09-9 (40'-42')

B09-9 (45'-47')

B09-10 (0.0'-2.0')

B09-10 (2.0'-4.0')

B09-10 (4.0'-6.0')

B09-10 (6.0'-8.0')

B09-10 (8.0'-10')

B09-10 (13'-15')

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LABELLA

B09-10 (18-20')

B09-10 (28'-30')

B09-10 (33'-35')

B09-10 (38'-40')

B09-10 (43'-45')

B09-10 (45'-47')

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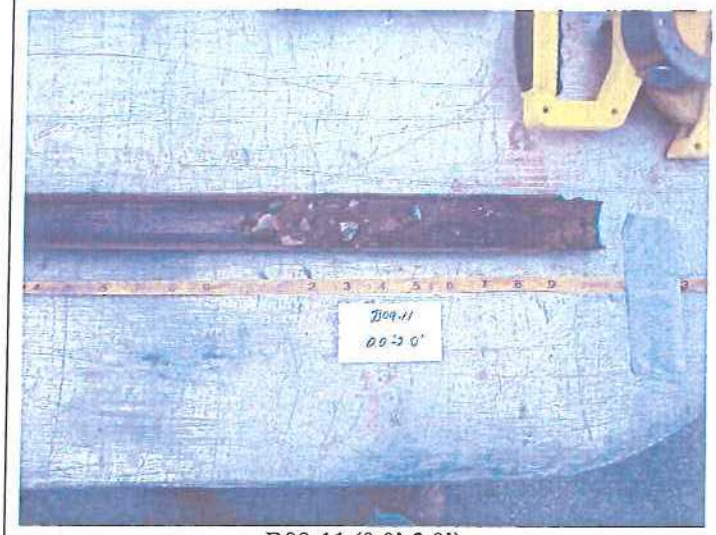
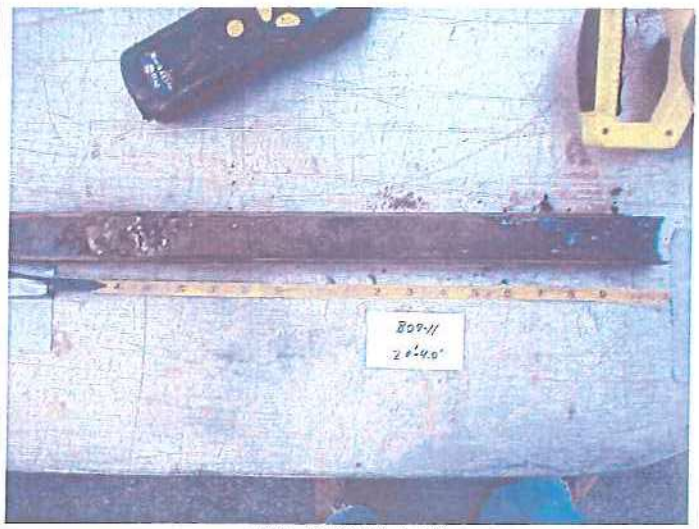
LABELLA

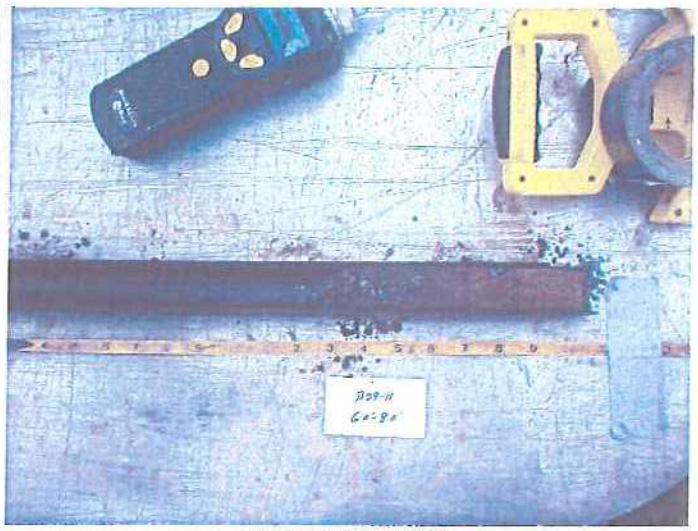


B09-11 (0.0'-2.0')

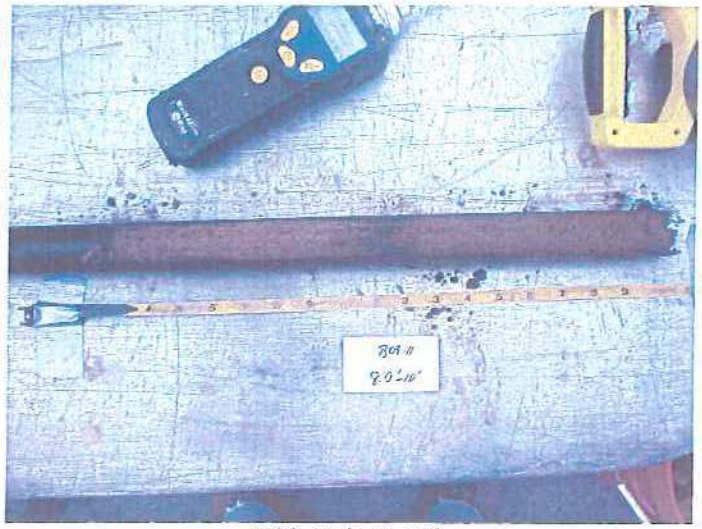


B09-11 (2.0'-4.0')

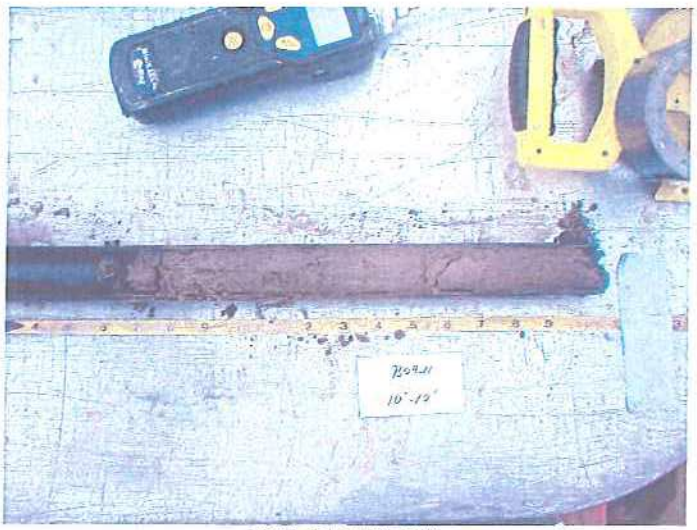
B09-11 (4.0'-6.0')



B09-11 (6.0'-8.0')



B09-11 (8.0'-10')



B09-11 (10'-12')

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Soil Boring: B09-11
Port of Rochester,Rochester, New York 14606

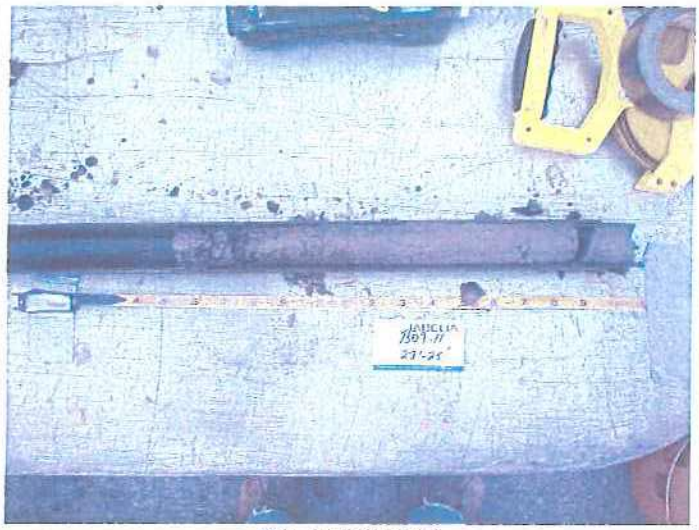
LABELLA

B09-11 (12'-14')

B09-11 (14'-16')

B09-11 (16'-18')

B09-11 (18'-20')



B09-11 (23'-25')

Photo Not Available

B09-11 (28'-30')

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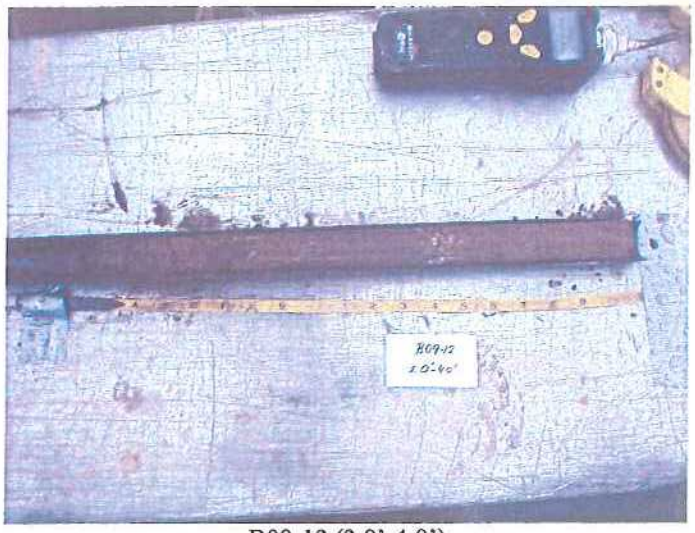
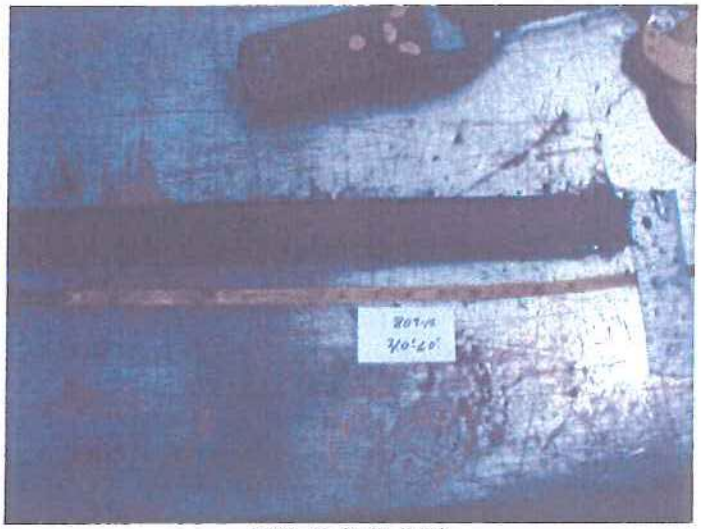
LABELLA

B09-11 (33'-35')

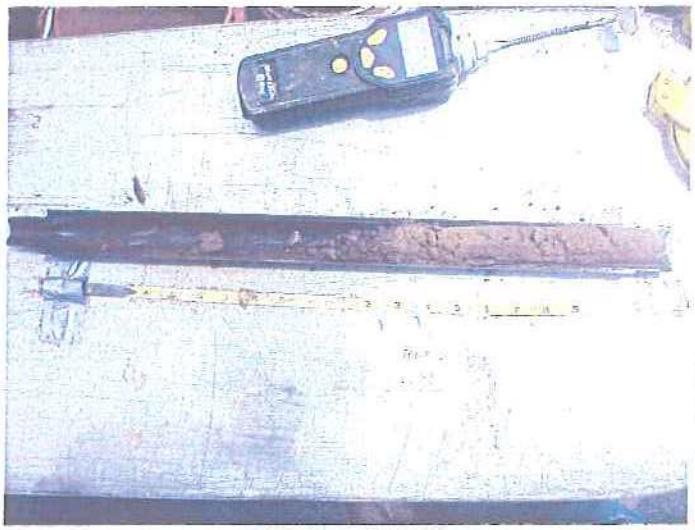
B09-12 (0.0'-2.0')



B09-12 (2.0'-4.0')

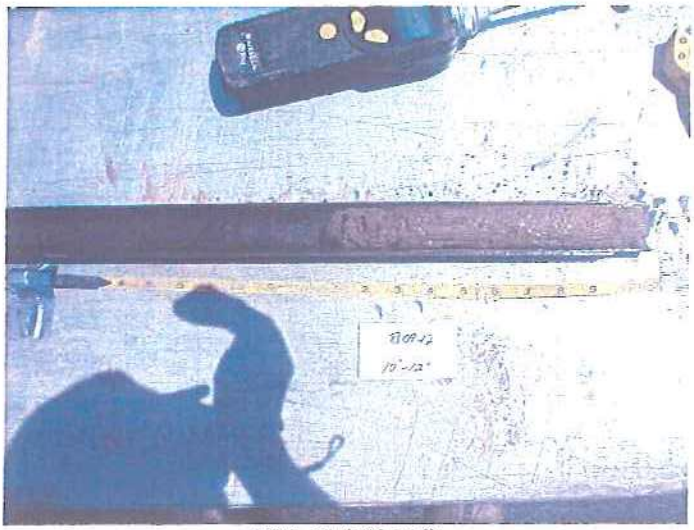


B09-12 (4.0'-6.0')



B09-12 (6.0'-8.0')

B09-12 (8.0'-10')



B09-12 (10'-12')

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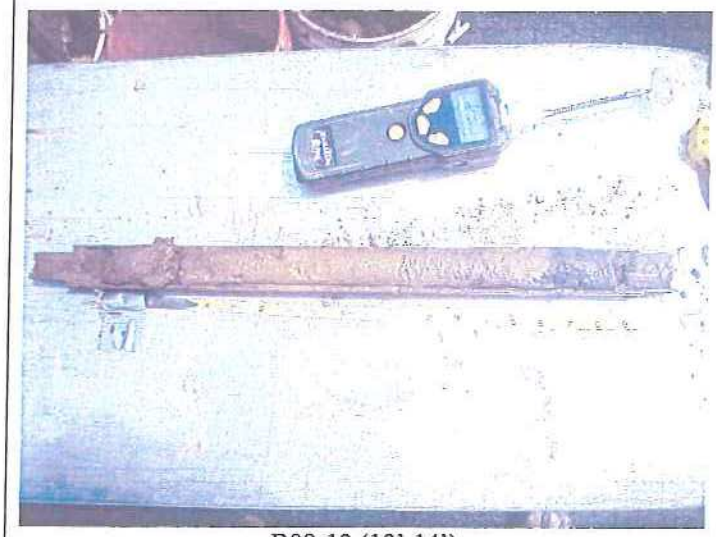
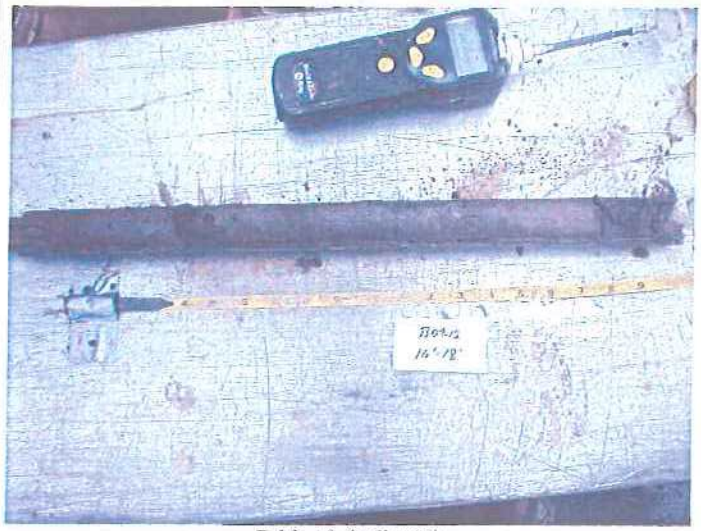
LABELLA

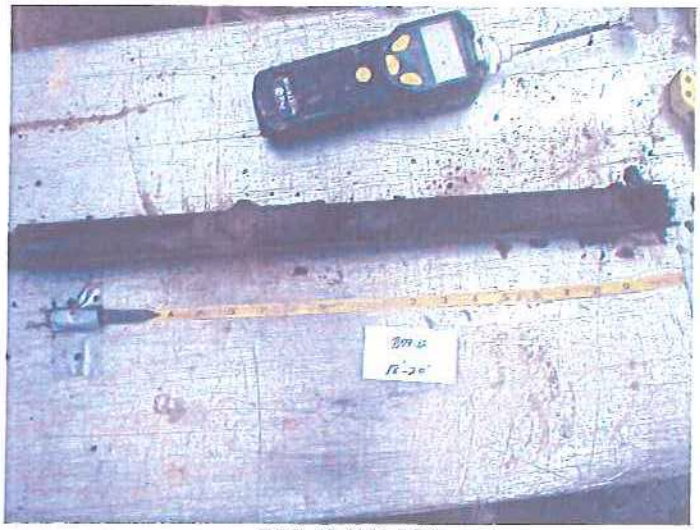


B09-12 (12'-14')

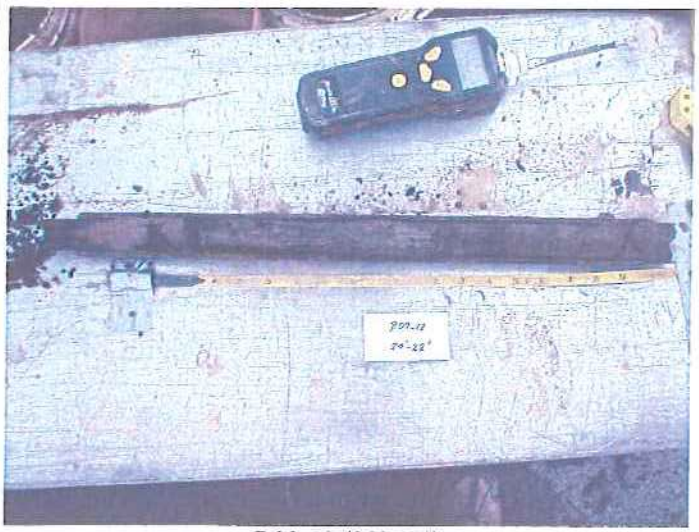
B09-12 (14'-16')



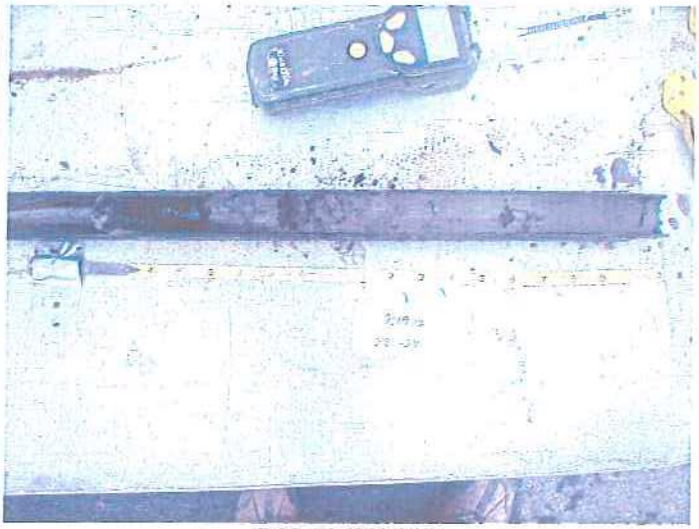
B09-12 (16'-18')



B09-12 (18'-20')



B09-12 (20'-22')



B09-12 (22'-24')

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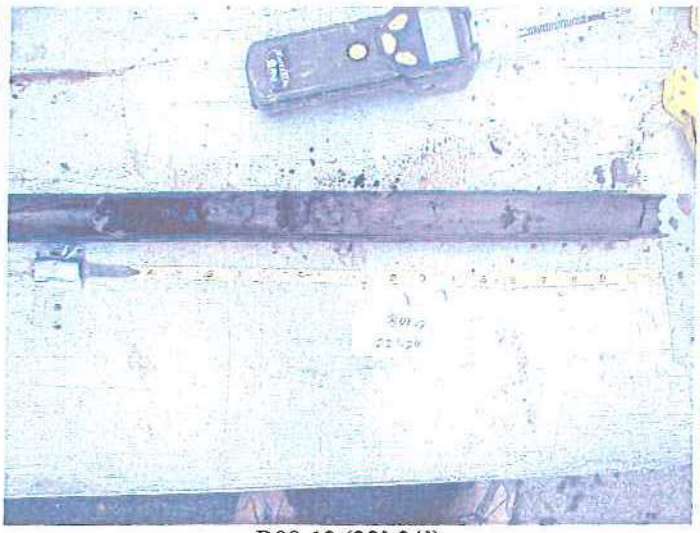
LABELLA

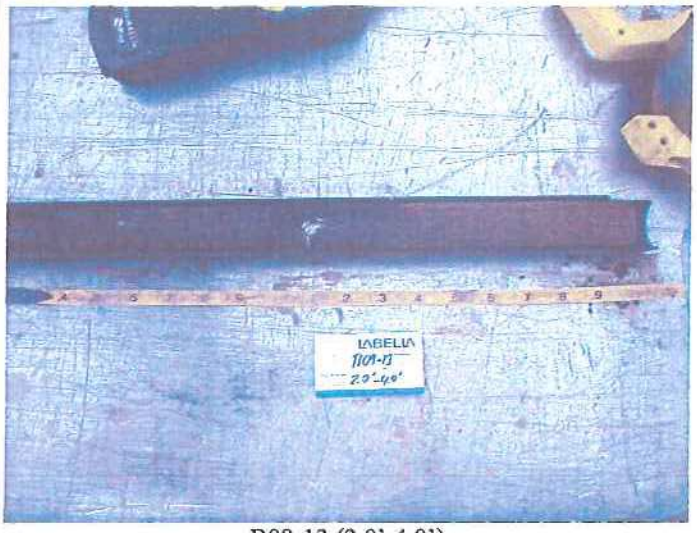


B09-12 (22'-24')

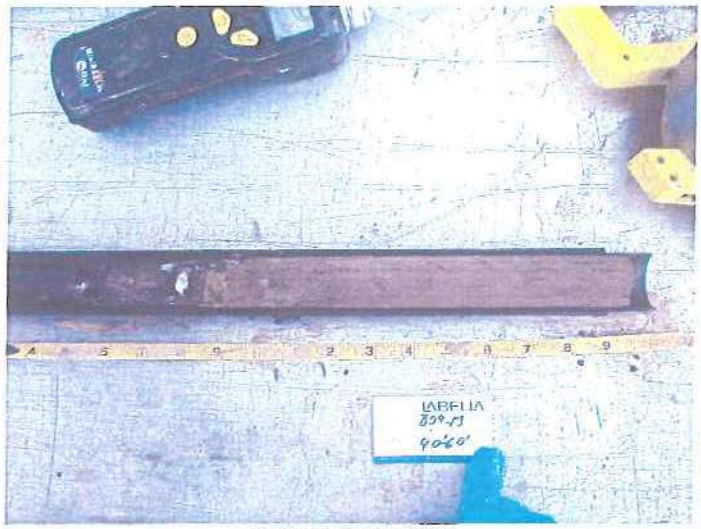
B09-12 (25'-27')

B09-12 (30'-32')

B09-13 (0.0'-2.0')

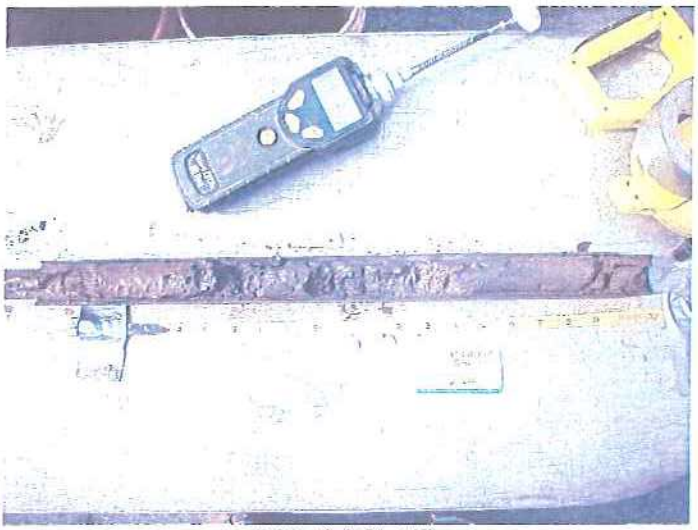


B09-13 (2.0'-4.0')



B09-13 (4.0'-6.0')

B09-13 (10'-12')



B09-13 (12'-14')

B09-13 (18'-20')

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LABELLA

B09-13 (24'-26')

Photo Not Available B09-14 (0.0'-2.0')	Photo Not Available B09-14 (2.0'-4.0')
Photo Not Available B09-14 (4.0'-6.0')	Photo Not Available B09-14 (6.0-8.0')
 B09-14 (8.0'-10')	 B09-14 (10'-12')

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LABELLA

B09-14 (12'-14')

B09-14 (14'-16')

B09-14 (16'-18')

B09-14 (18'-20')

B09-14 (20'-22')

B09-14 (22'-24')

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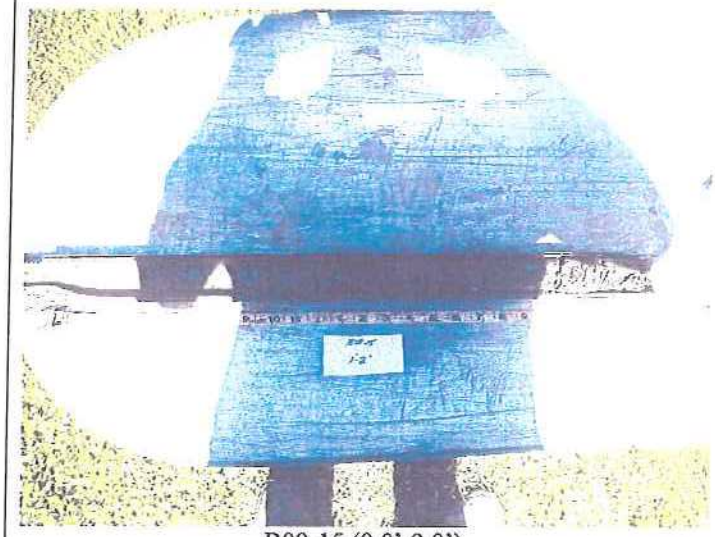
LABELLA

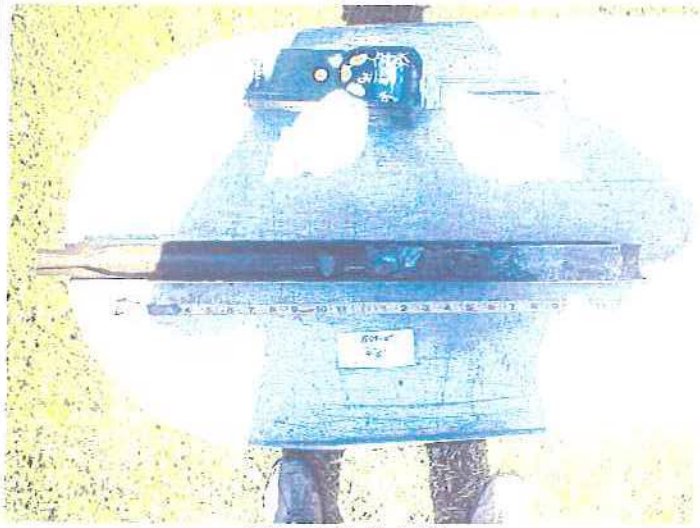
B09-14 (25'-27')

B09-14 (30'-32')

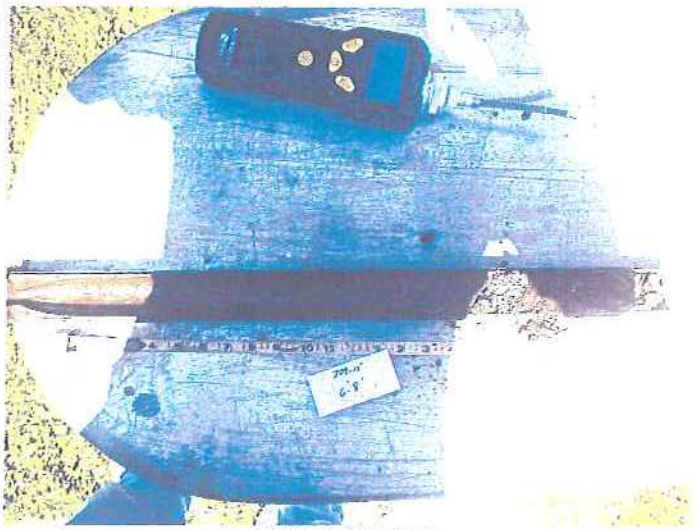


B09-15 (0.0'-2.0')

B09-15 (2.0'-4.0')



B09-15 (4.0'-6.0')



B09-15 (6.0-8.0')

Photo Not Available
(No Recovery)

B09-15 (8.0'-10')

Photo Not Available
(Very Little Recovery)

B09-15 (10'-12')

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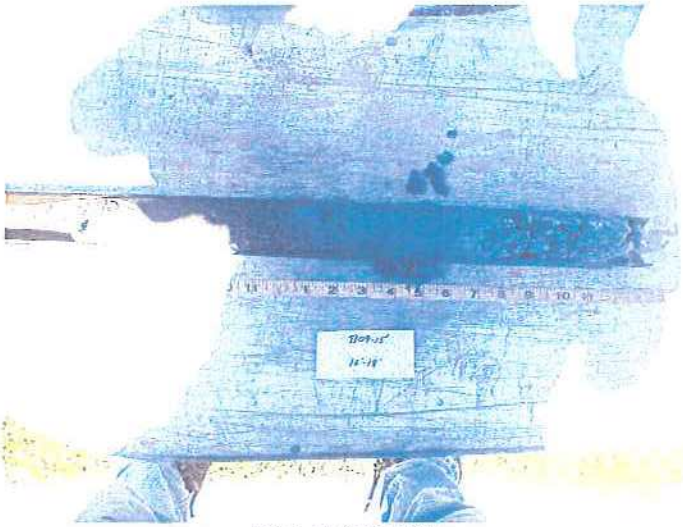
LABELLA

B09-15 (12'-14')

B09-15 (14'-16')

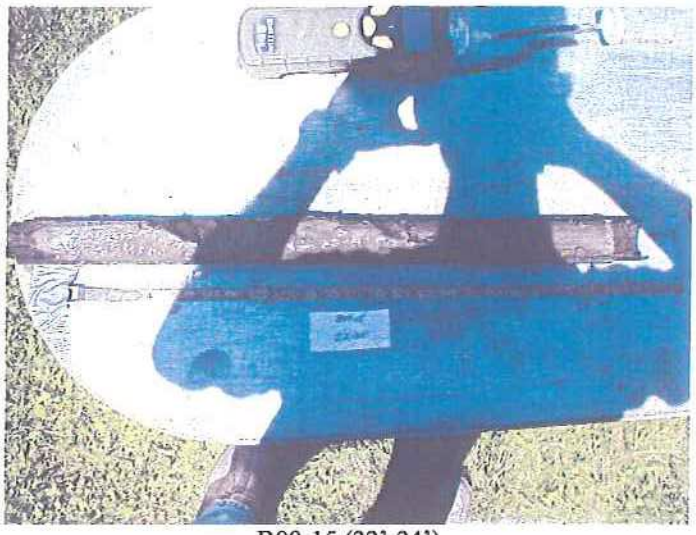


B09-15 (16'-18')

B09-15 (18'-20')

Photo Not Available
(No Recovery)

B09-15 (20'-22')



B09-15 (22'-24')

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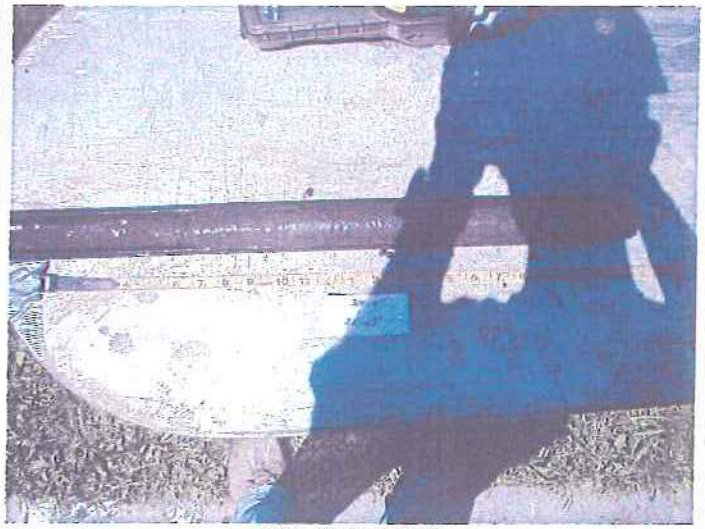
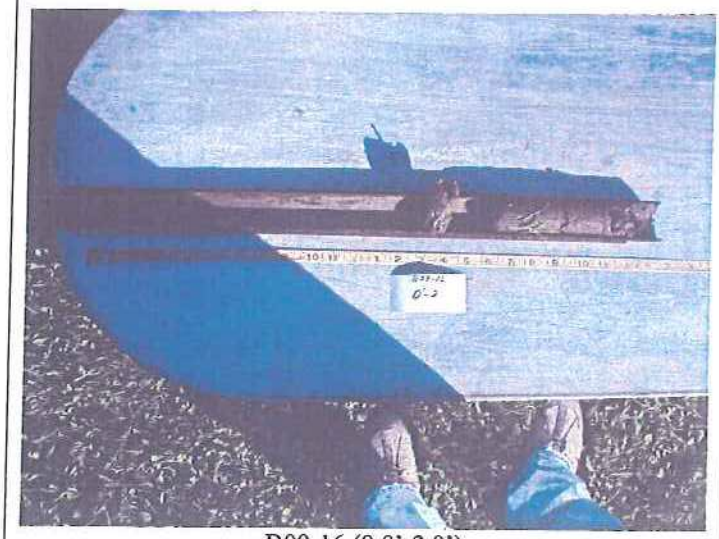
LABELLA



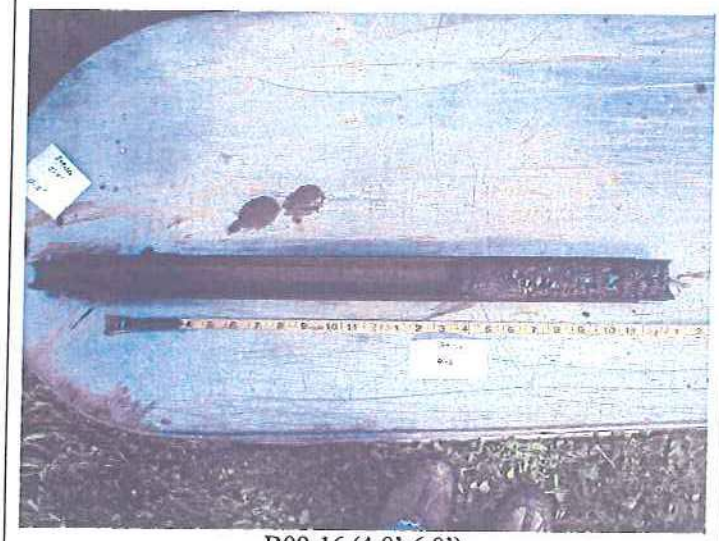
B09-15 (25'-27')

B09-15 (30'-32')

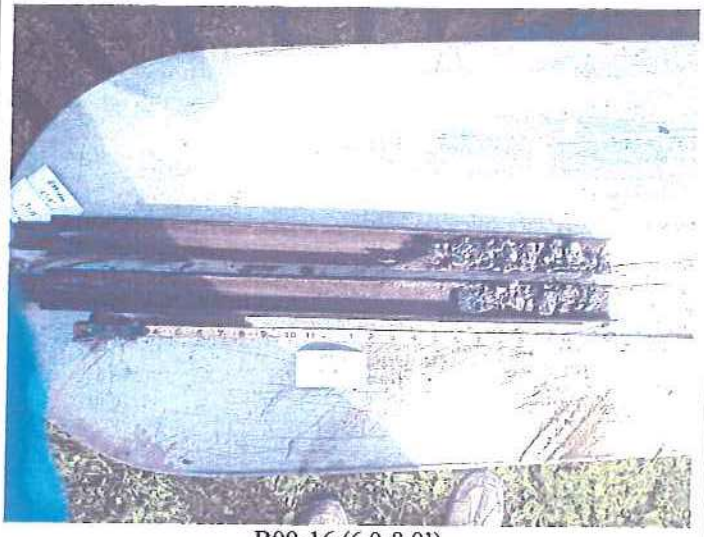


B09-16 (0.0'-2.0')

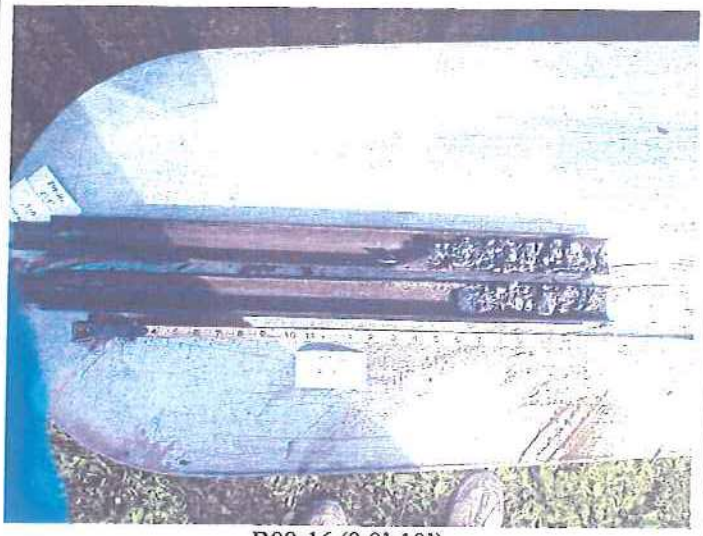
B09-16 (2.0'-4.0')



B09-16 (4.0'-6.0')



B09-16 (6.0-8.0')



B09-16 (8.0'-10')

Photo Not Available
(very little recovery)

B09-16 (10'-12')

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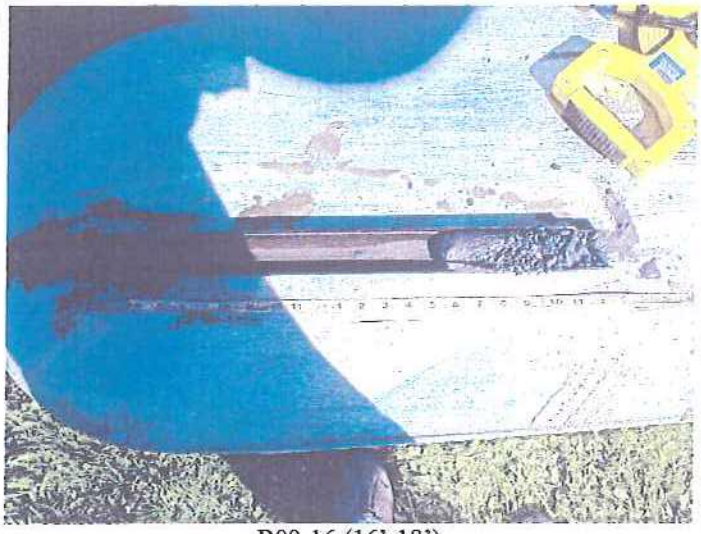
LABELLA

Photo Not Available

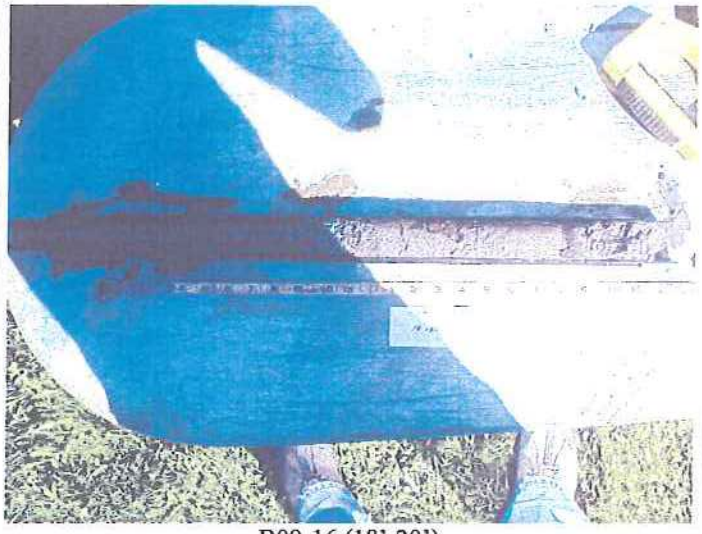
B09-16 (12'-14')

Photo Not Available

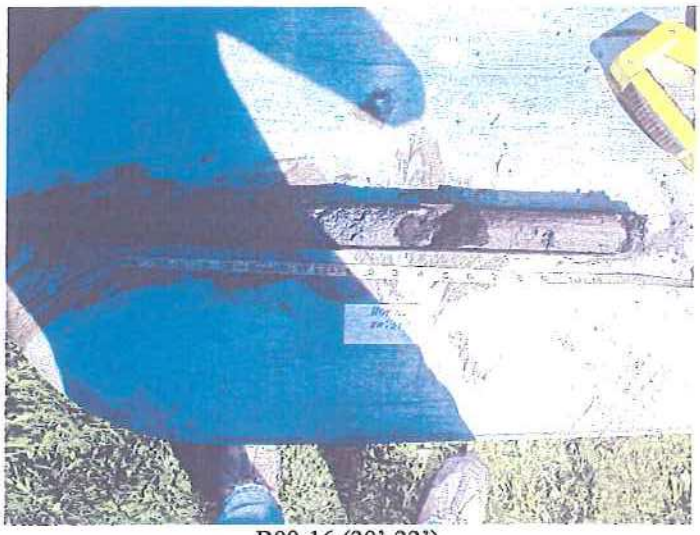
B09-16 (14'-16')



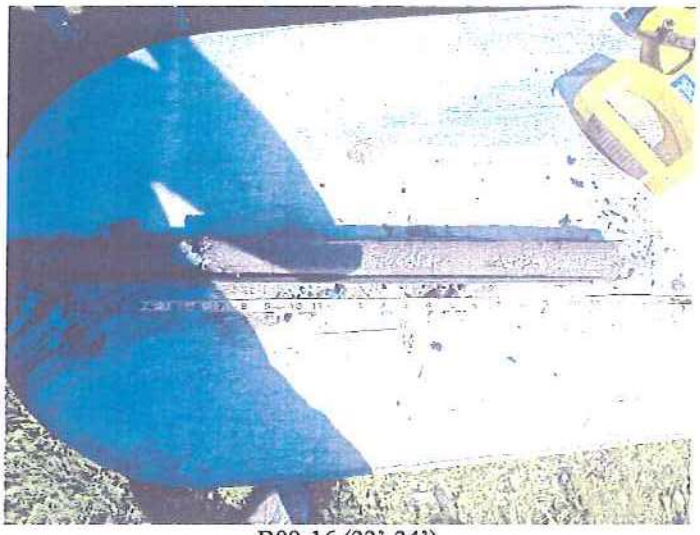
B09-16 (16'-18')



B09-16 (18'-20')



B09-16 (20'-22')



B09-16 (22'-24')

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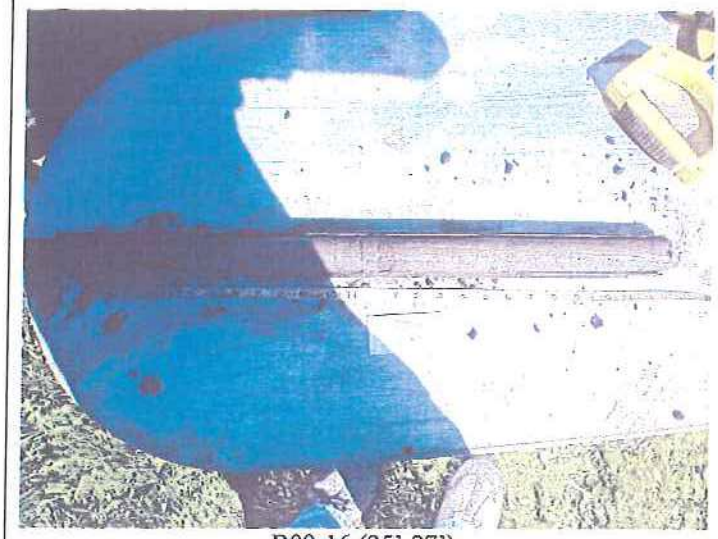
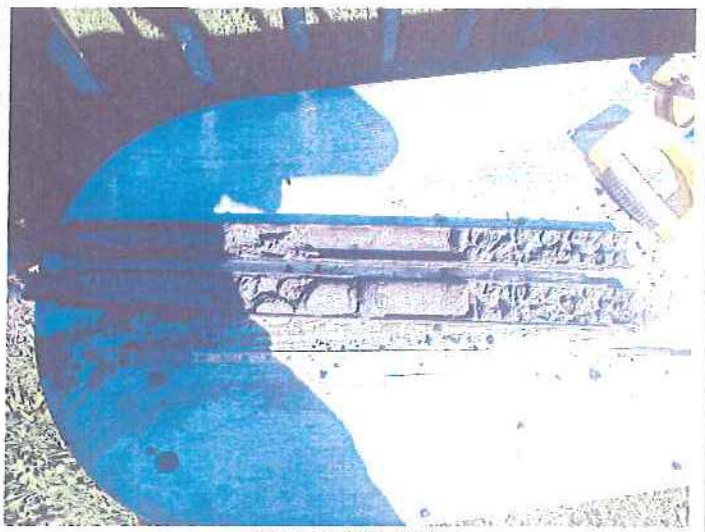
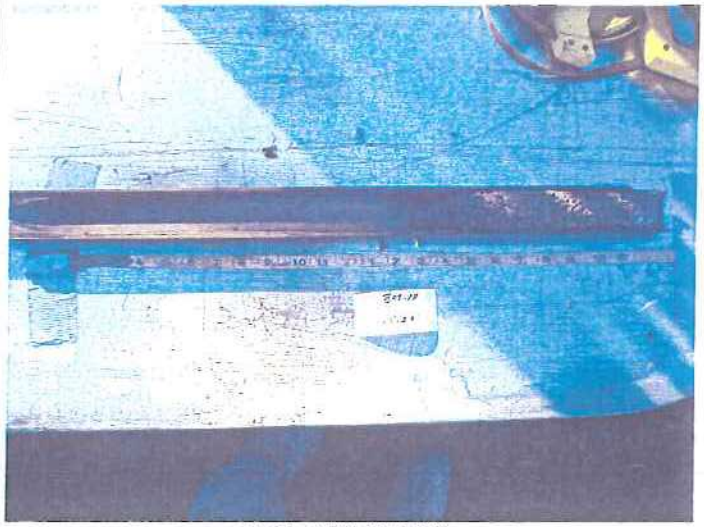
LABELLA



B09-16 (25'-27')



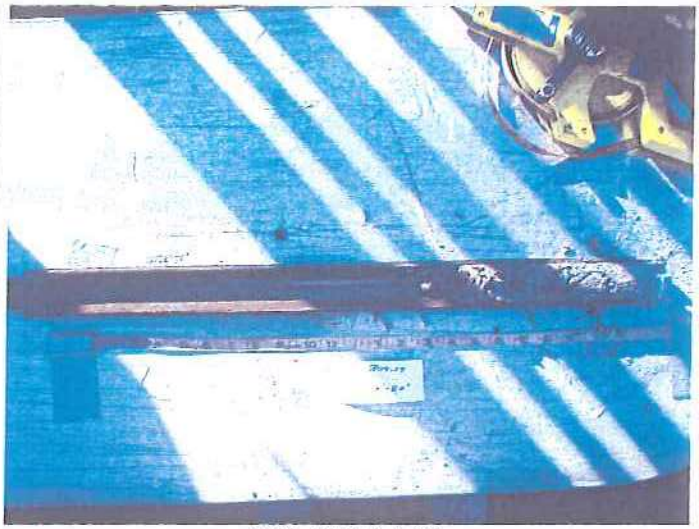
B09-16 (30'-32')



B09-17 (0.0'-2.0')

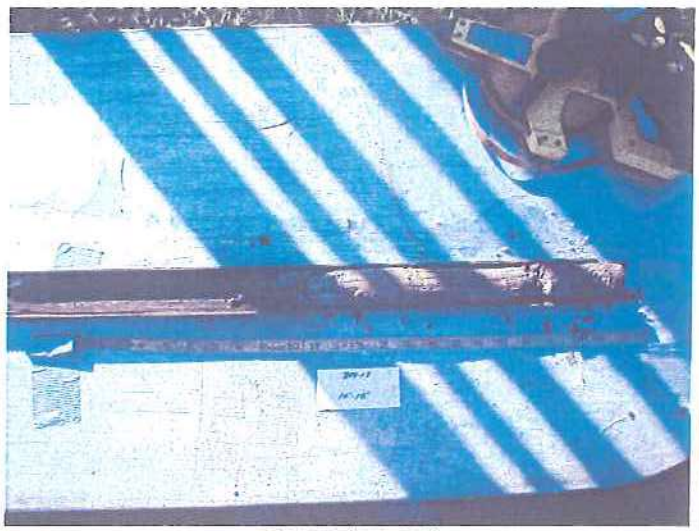
B09-17 (2.0'-4.0')

B09-17 (4.0'-6.0')



B09-17 (6.0-8.0')

B09-17 (8.0'-10')



B09-17 (10'-12')

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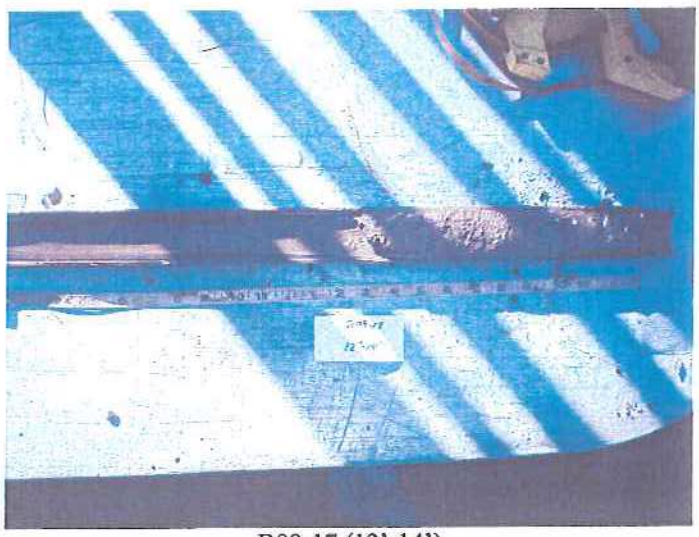
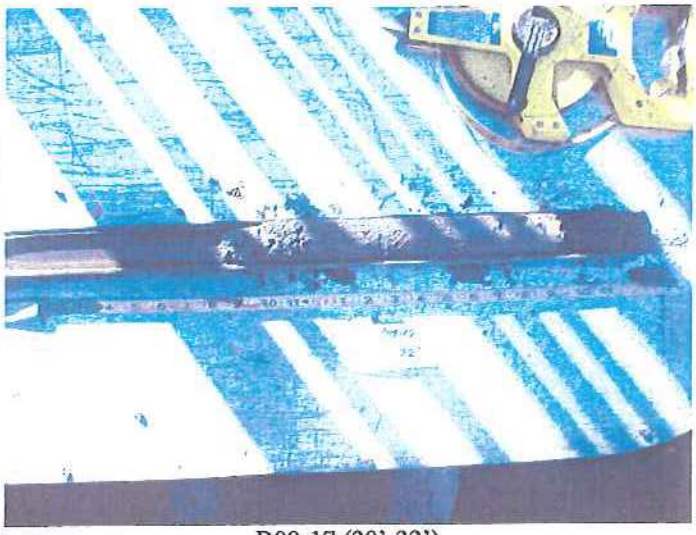


B09-17 (12'-14')

B09-17 (14'-16')

B09-17 (16'-18')

B09-17 (18'-20')



B09-17 (20'-22')

B09-17 (25'-27')

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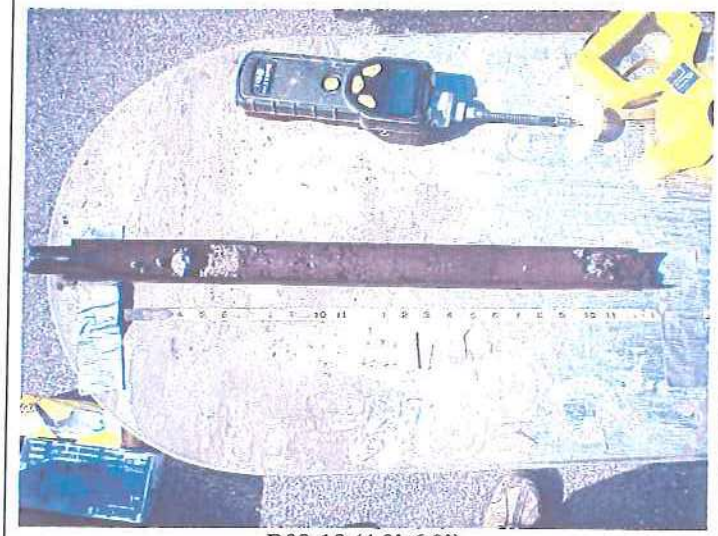
LABELLA

B09-17 (30'-32')

B09-18 (0.0'-2.0')

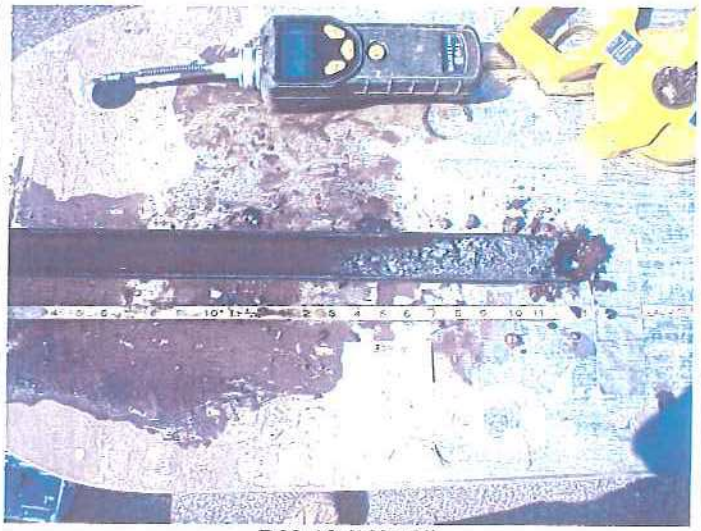
B09-18 (2.0'-4.0')



B09-18 (4.0'-6.0')

B09-18 (6.0-8.0')

B09-18 (8.0'-10')



B09-18 (10'-12')

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LABELLA

B09-18 (12'-14')

B09-18 (14'-16')

B09-18 (16'-18')

B09-18 (18'-20')

B09-18 (23'-25')

B09-18 (28'-30')

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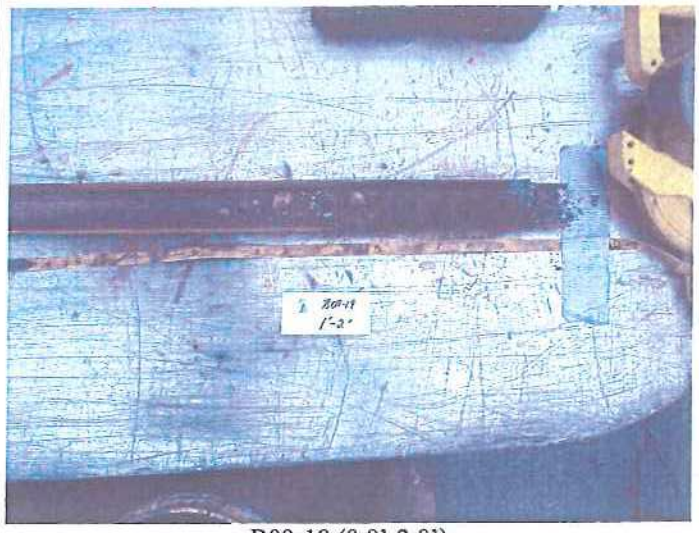
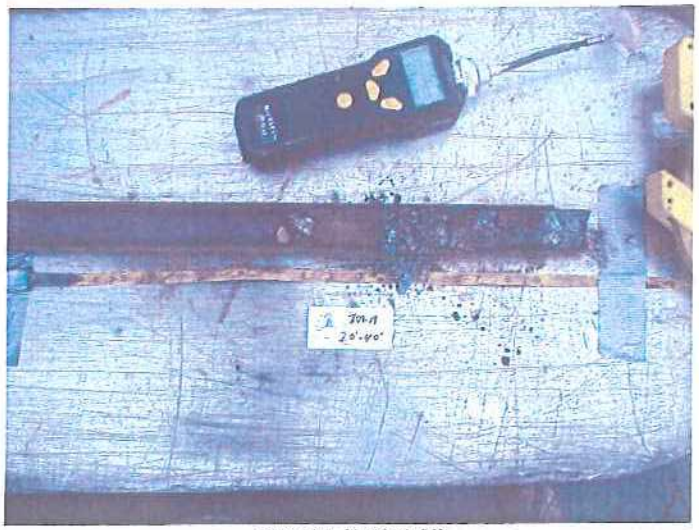
LABELLA

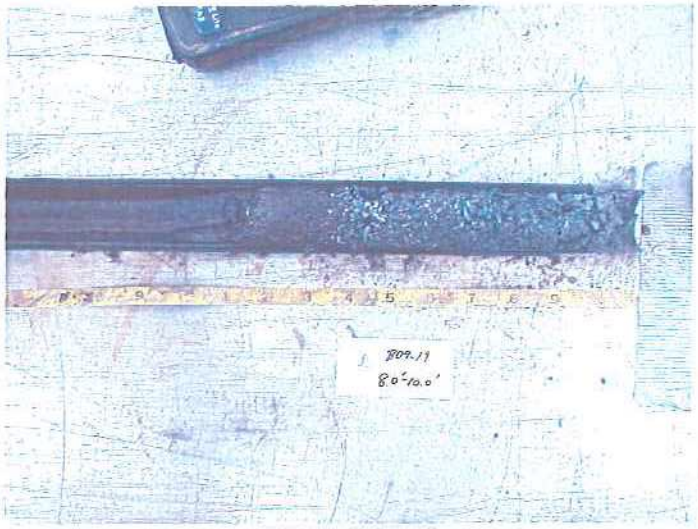


B09-19 (0.0'-2.0')

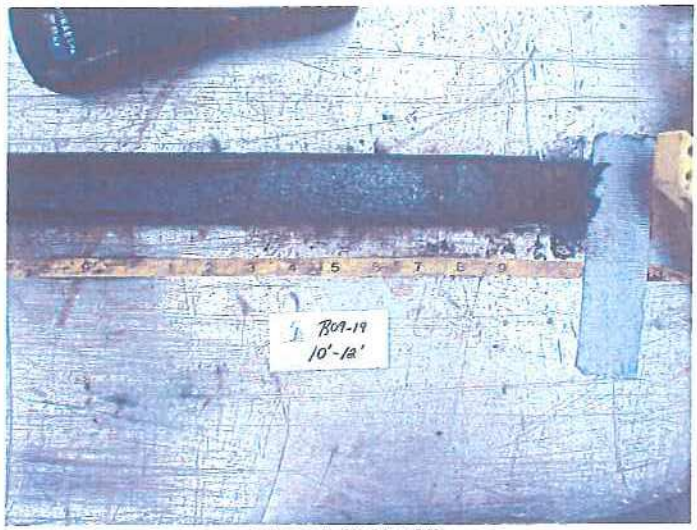


B09-19 (2.0'-4.0')

B09-19 (4.0'-6.0')



B09-19 (6.0-8.0')



B09-19 (8.0'-10')

B09-19 (10'-12')

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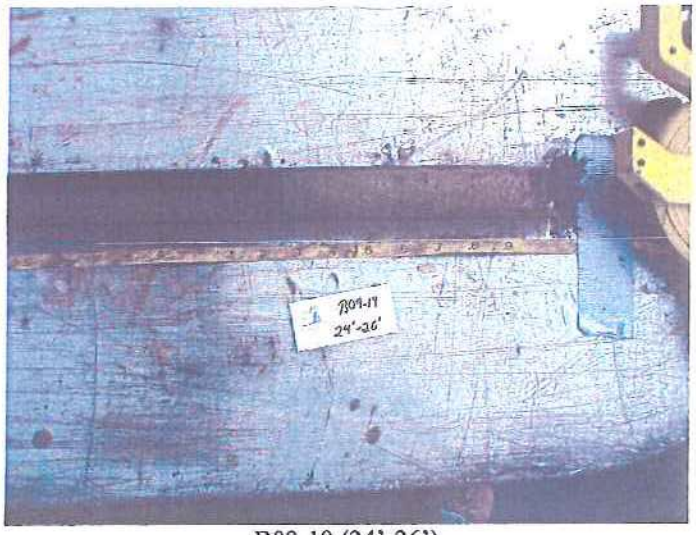
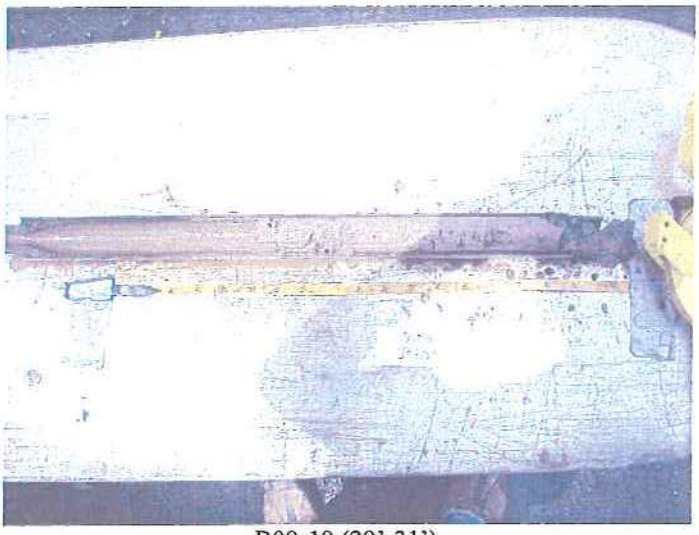
LABELLA

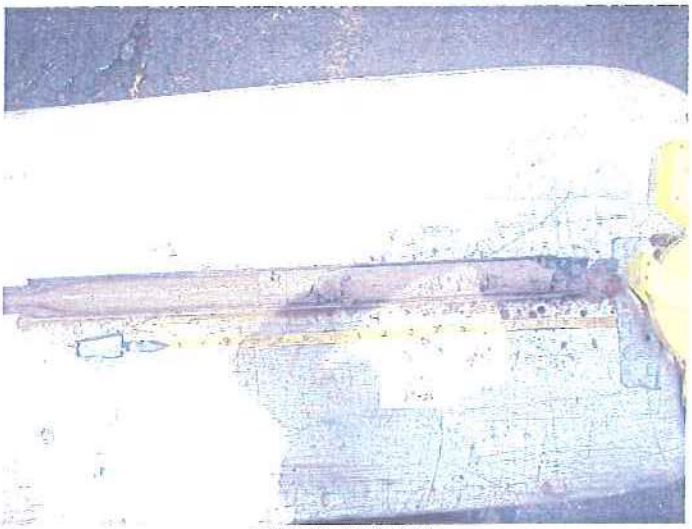
B09-19 (19'-21')



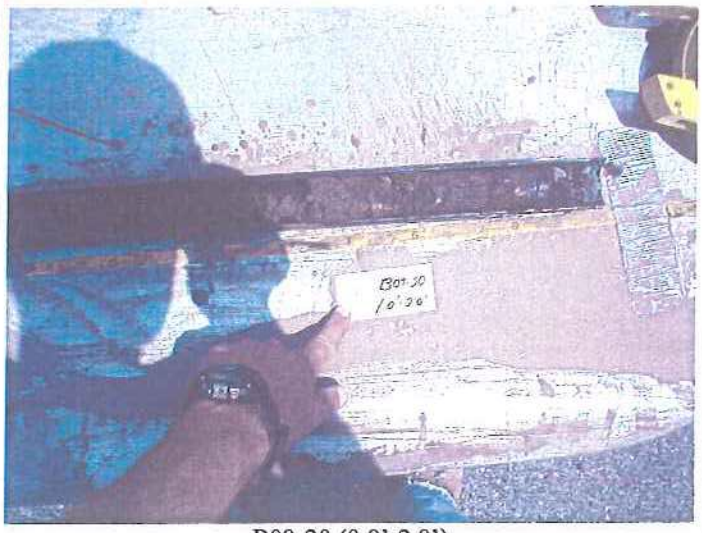
B09-19 (24'-26')



B09-19 (29'-31')

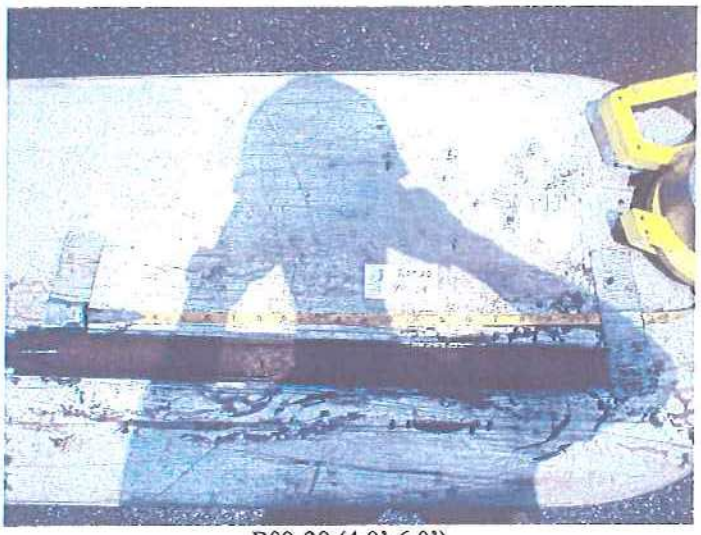


B09-19 (34'-36')

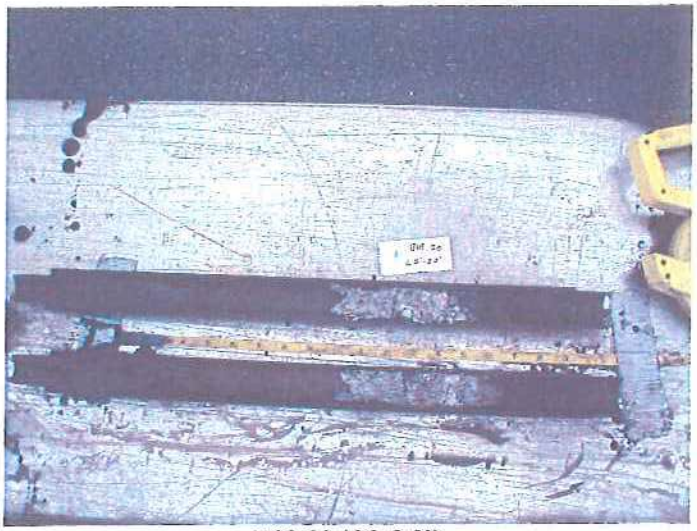


B09-20 (0.0'-2.0')

B09-20 (2.0'-4.0')



B09-20 (4.0'-6.0')



B09-20 (6.0-8.0')

B09-20 (8.0'-10')

Photo Not Available

B09-20 (10'-12')

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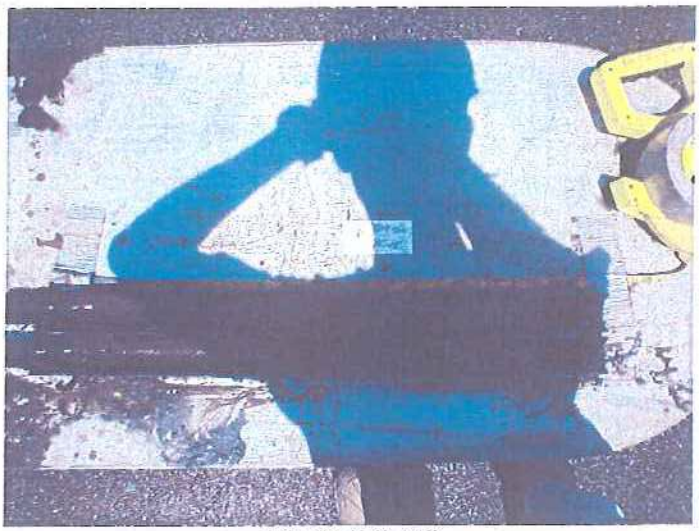
LABELLA

B09-20 (12'-14')

Photo Not Available

B09-20 (14'-16')



B09-20 (16'-18')

B09-20 (18'-20')

Photo Not Available

B09-20 (23'-25')

B09-20 (28'-30')

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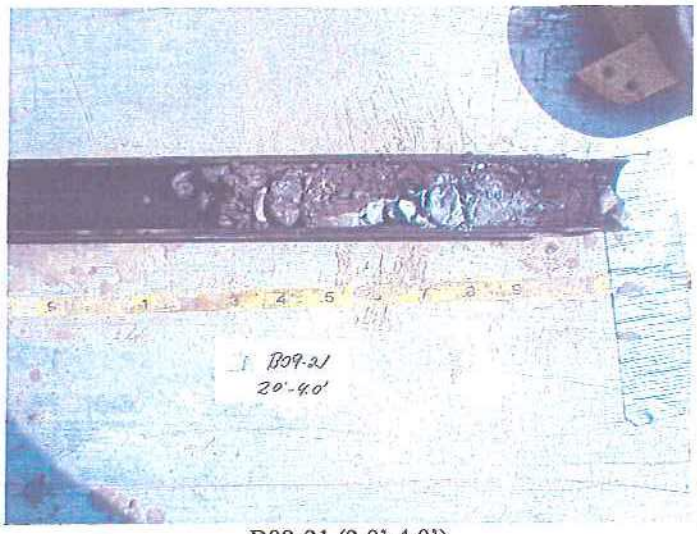
LABELLA

Photo Not Available

B09-21 (0.0'-2.0')

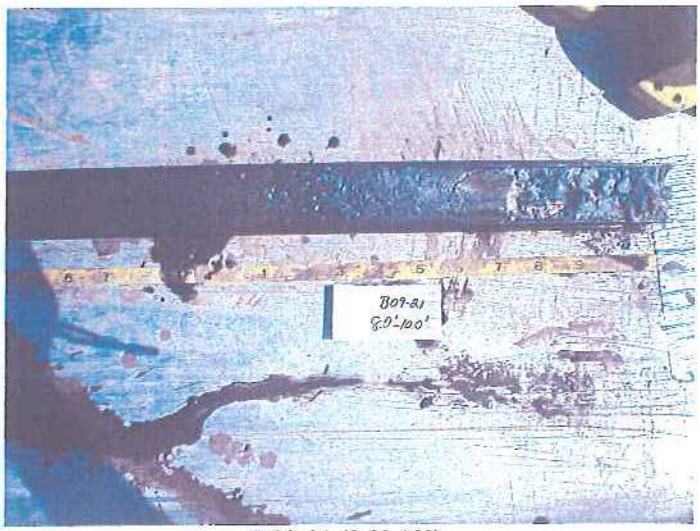


B09-21 (2.0'-4.0')

B09-21 (4.0'-6.0')

Photo Not Available

B09-21 (6.0-8.0')



B09-21 (8.0'-10')

Photo Not Available

B09-21 (10'-12')

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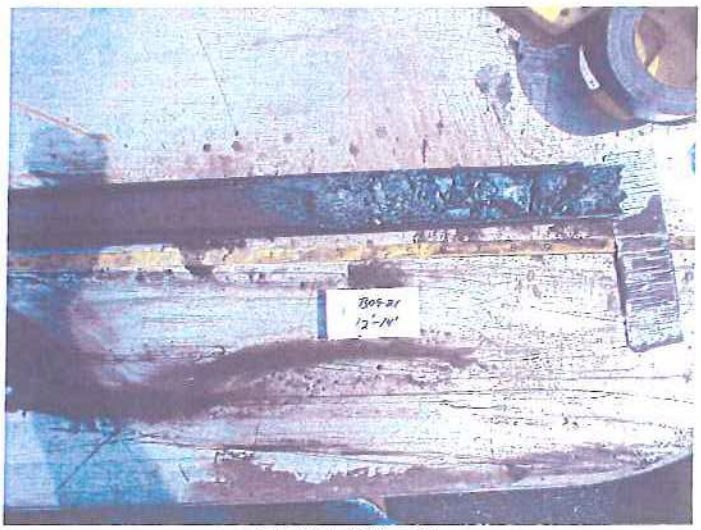
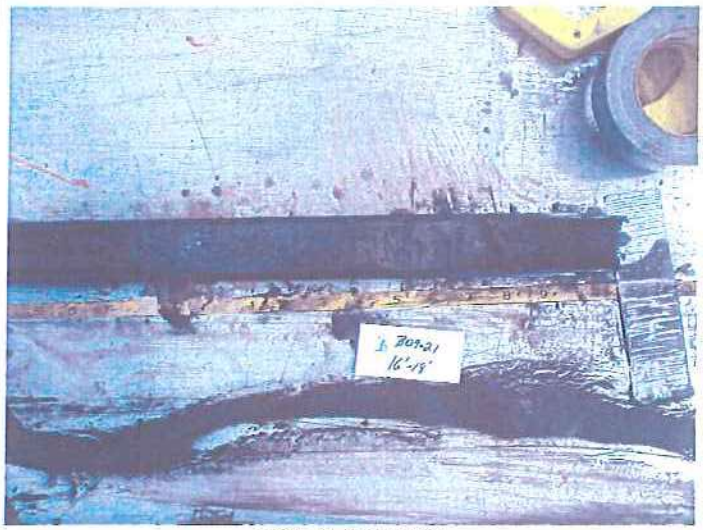
LABELLA

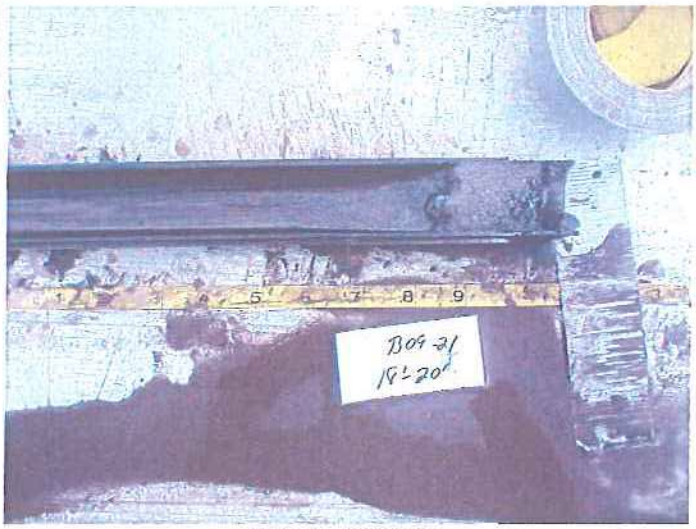


B09-21 (12'-14')

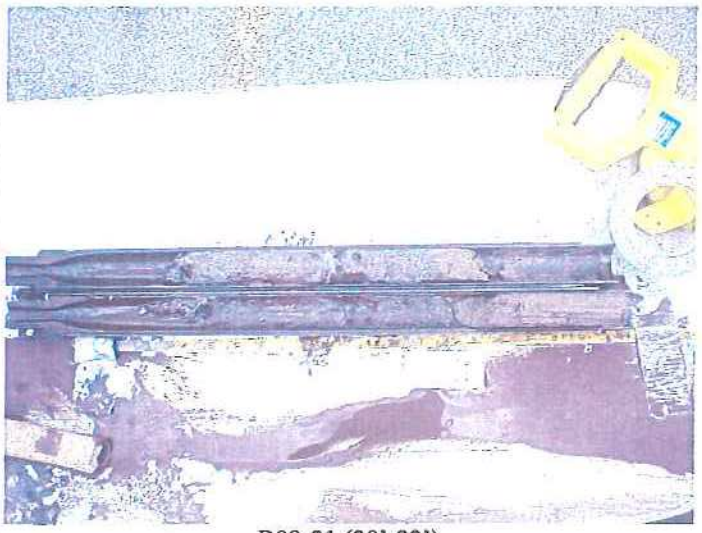
B09-21 (14'-16')



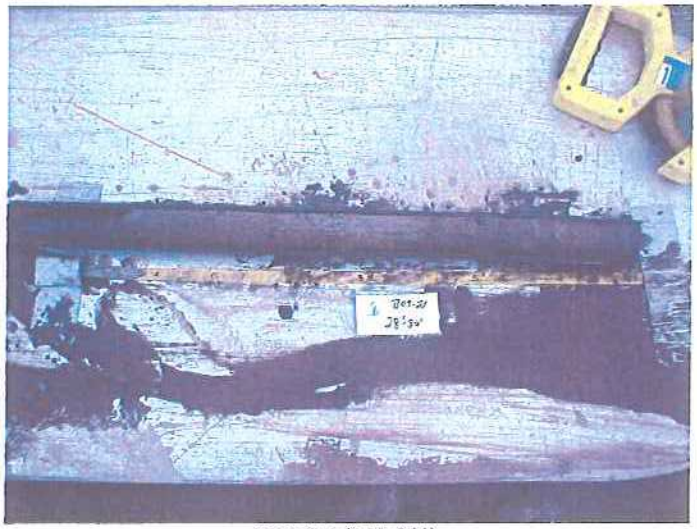
B09-21 (16'-18')



B09-21 (18'-20')



B09-21 (20'-22')



B09-21 (28'-30')

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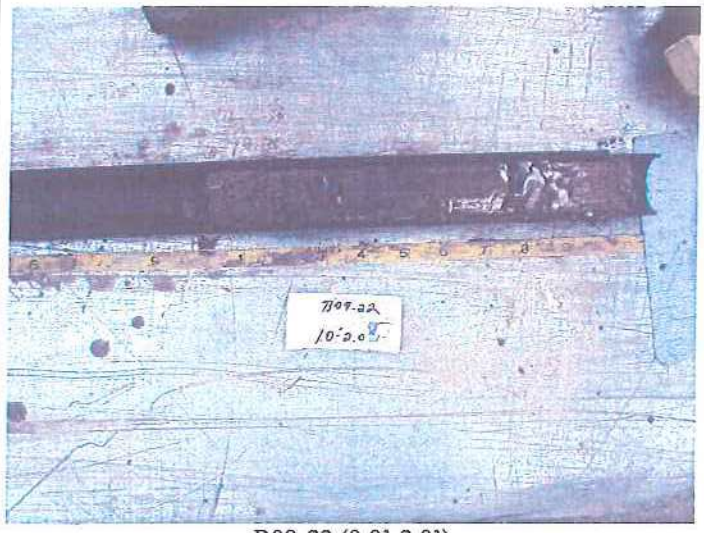
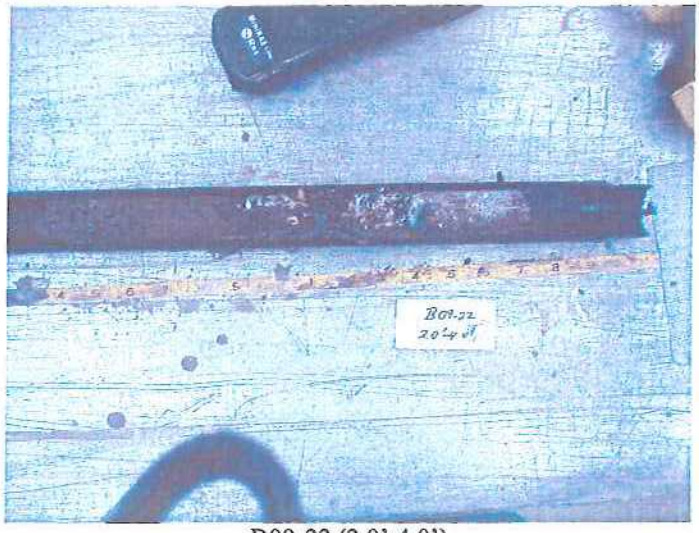
LABELLA



B09-22 (0.0'-2.0')



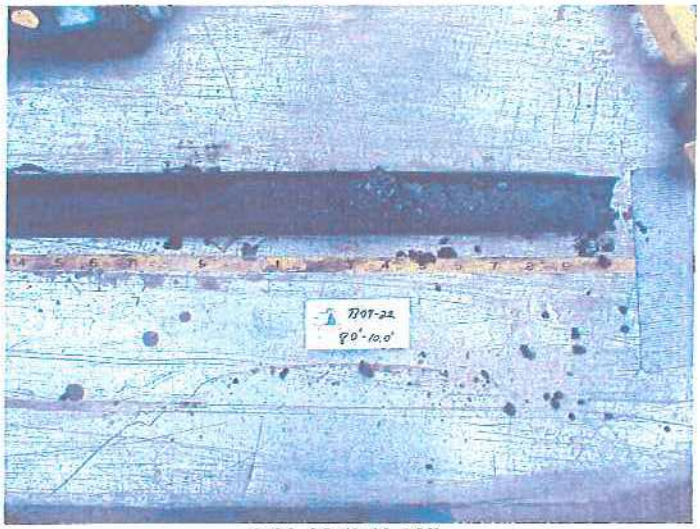
B09-22 (2.0'-4.0')

Photo Not Available

B09-22 (4.0'-6.0')

Photo Not Available

B09-22 (6.0-8.0')



B09-22 (8.0'-10')

Photo Not Available

B09-22 (10'-12')

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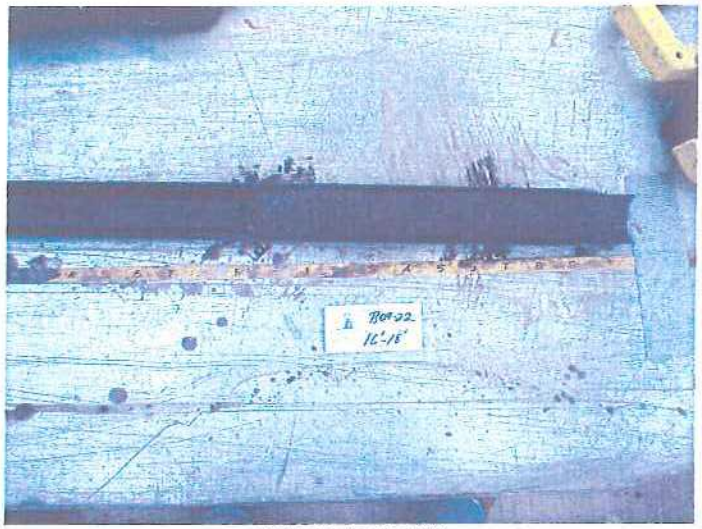
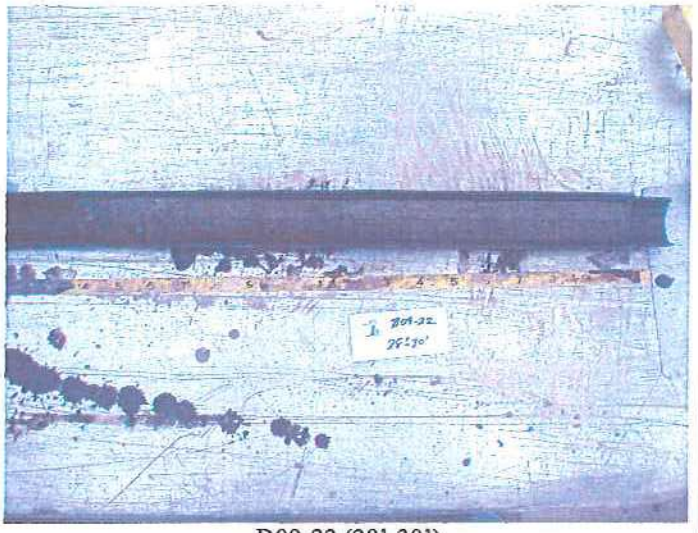
Photo Not Available B09-22 (12'-14')	Photo Not Available B09-22 (14'-16')
 B09-22 (16'-18')	Photo Not Available B09-22 (18'-20')
 B09-22 (20'-22')	 B09-22 (28'-30')

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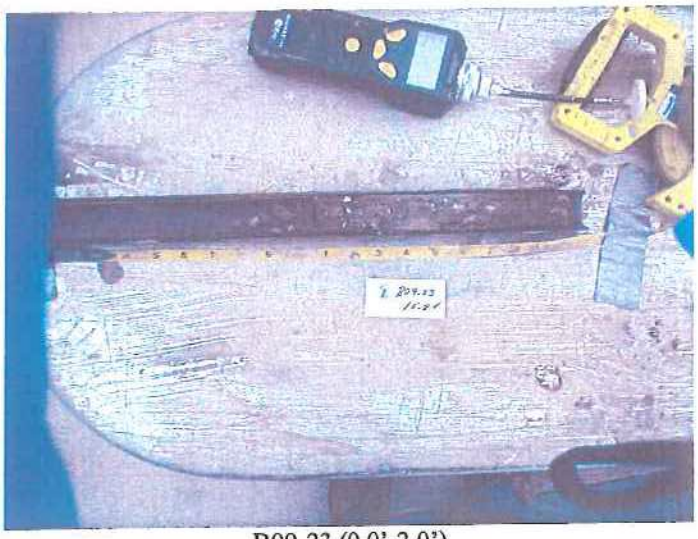
LABELLA



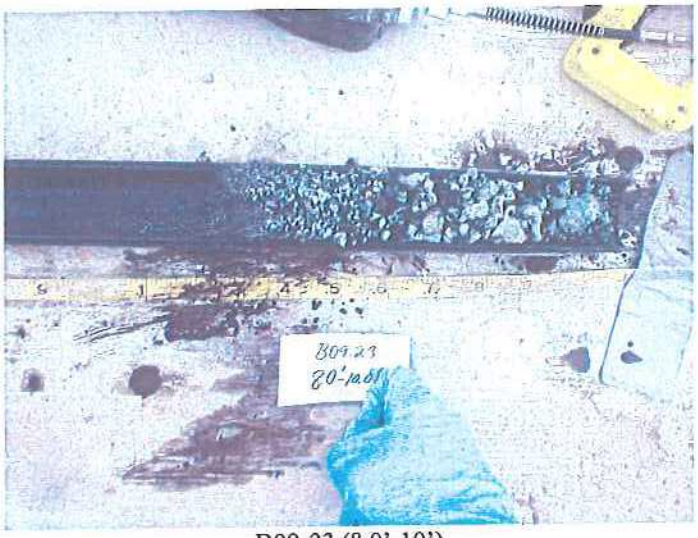
B09-23 (0.0'-2.0')

Photo Not Available

B09-23 (2.0'-4.0')

B09-23 (4.0'-6.0')

B09-23 (6.0-8.0')



B09-23 (8.0'-10')

B09-23 (10'-12')

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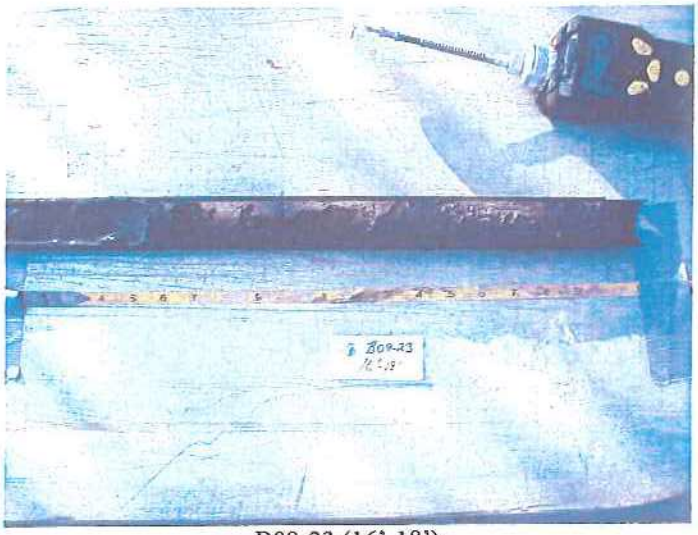
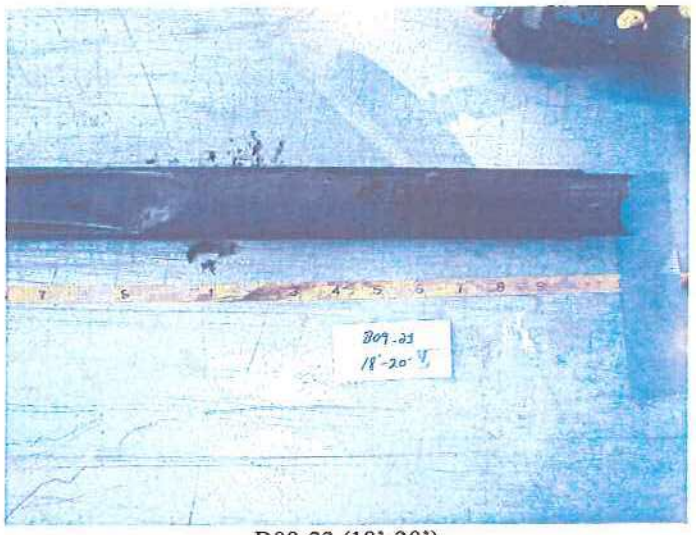
LABELLA

B09-23 (12'-14')

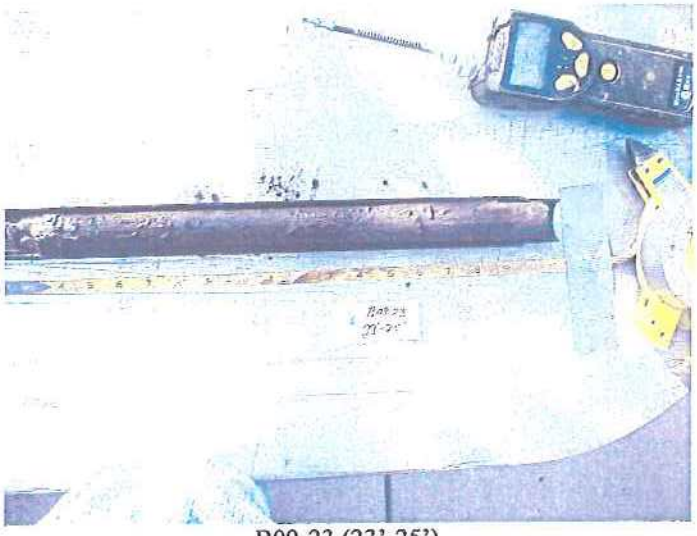
B09-23 (14'-16')



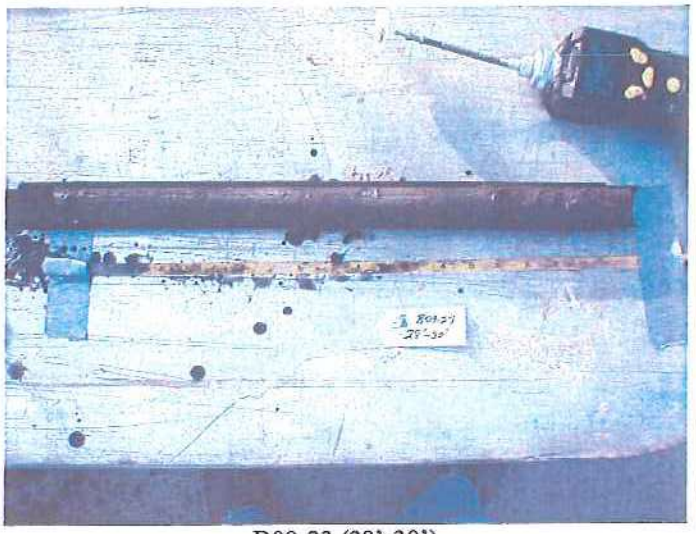
B09-23 (16'-18')



B09-23 (18'-20')



B09-23 (23'-25')



B09-23 (28'-30')

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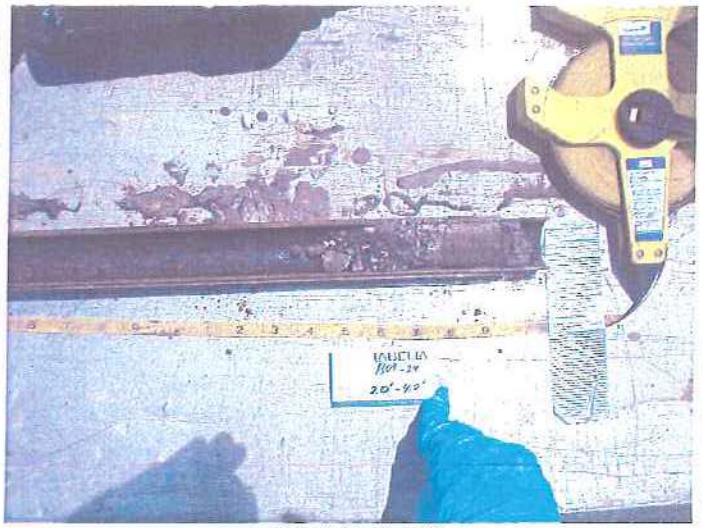
LABELLA

B09-24 (0.0'-2.0')



B09-24 (2.0'-4.0')

Photo Not Available

B09-24 (4.0'-6.0')

B09-24 (6.0-8.0')

B09-24 (8.0'-10')

Photo Not Available

B09-24 (10'-12')

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LABELLA

B09-24 (12'-14')

B09-24 (14'-16')

B09-24 (16'-18')

B09-24 (18'-20')

B09-24 (20'-22')

B09-24 (28'-30')

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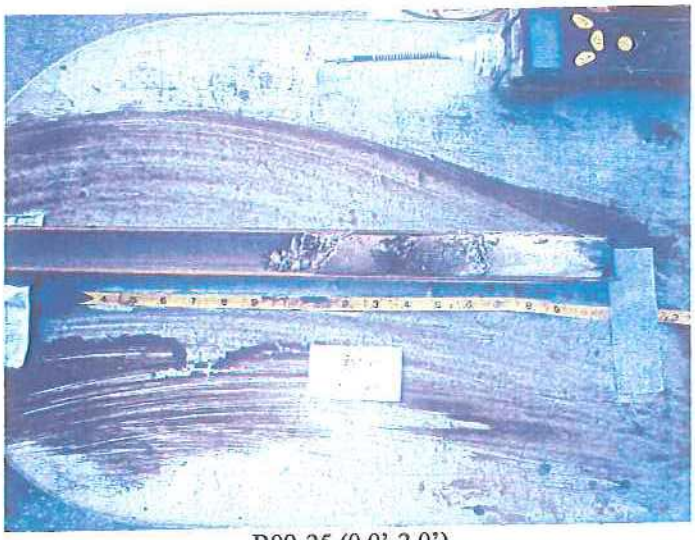
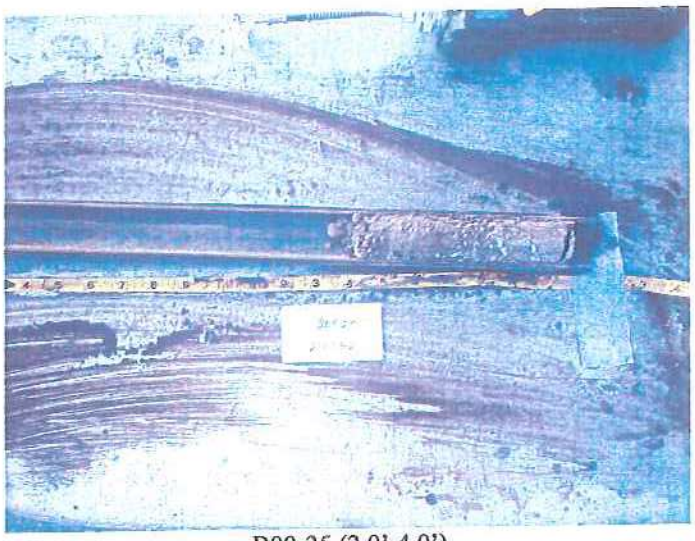
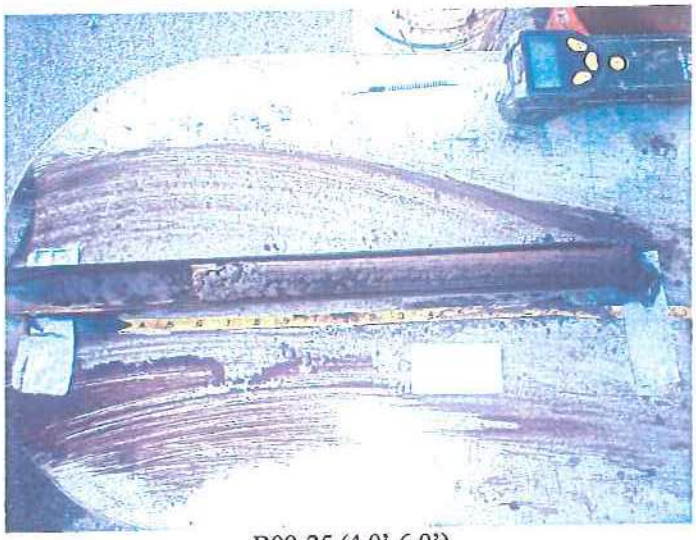
LABELLA



B09-25 (0.0'-2.0')



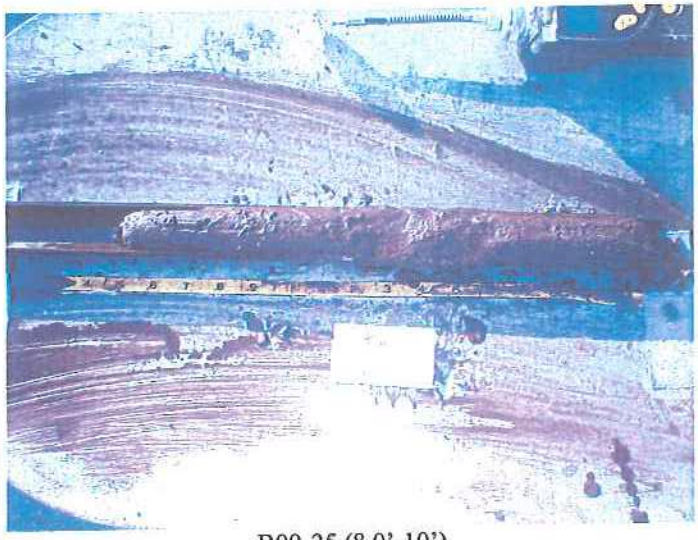
B09-25 (2.0'-4.0')



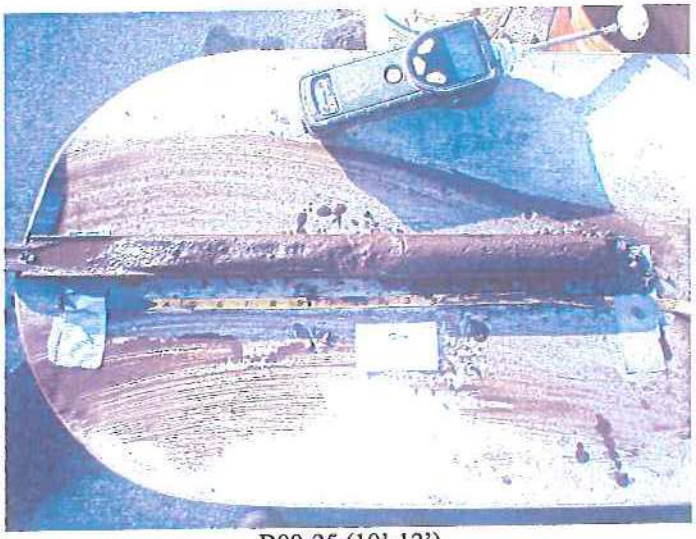
B09-25 (4.0'-6.0')

Photo Not Available

B09-25 (6.0-8.0')



B09-25 (8.0'-10')



B09-25 (10'-12')

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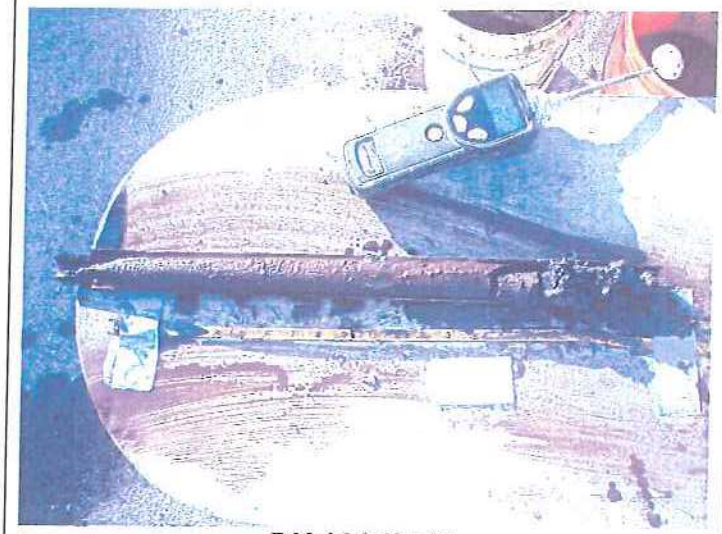
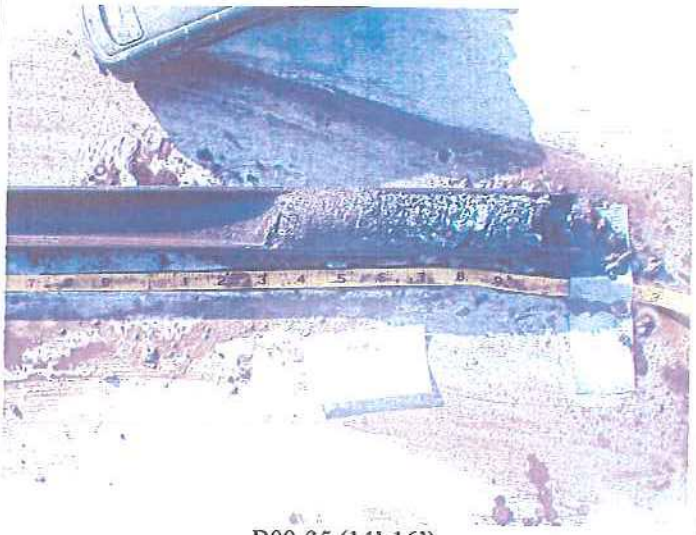
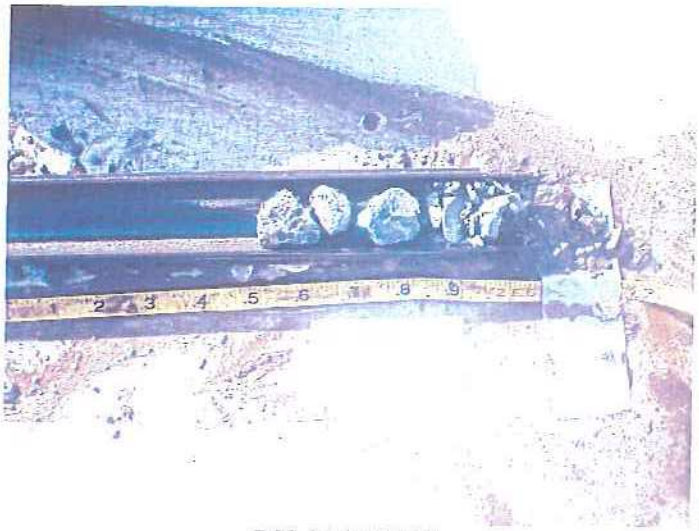
LABELLA



B09-25 (12'-14')



B09-25 (14'-16')



B09-25 (16'-18')

B09-25 (18'-20')

B09-25 (20'-22')

B09-25 (22'-24')

Port Marina Predevelopment Site Conditions Gap Investigation
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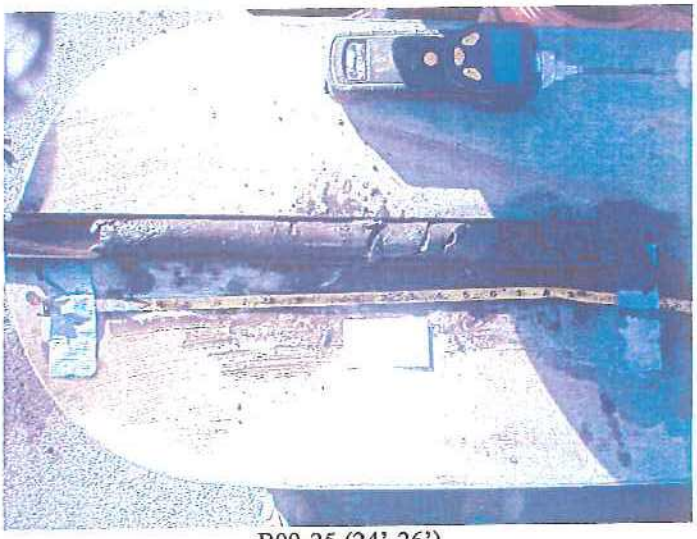
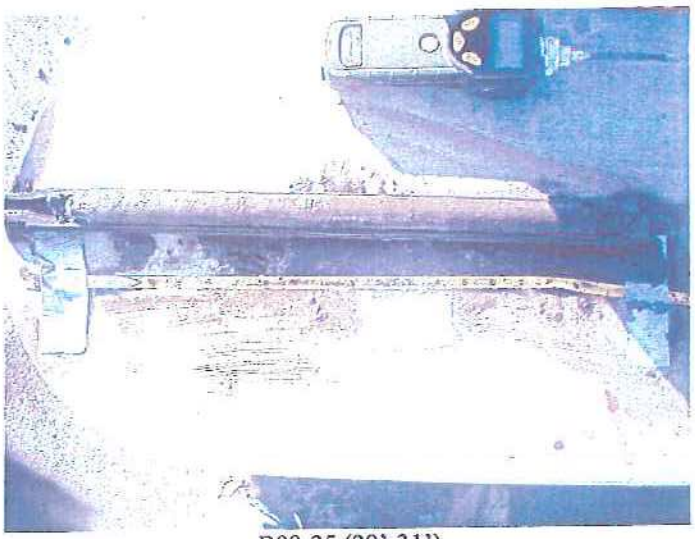
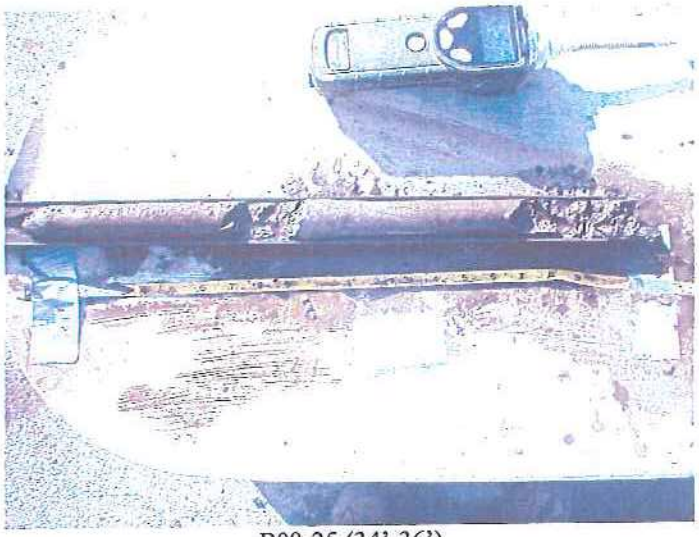
LABELLA



B09-25 (24'-26')



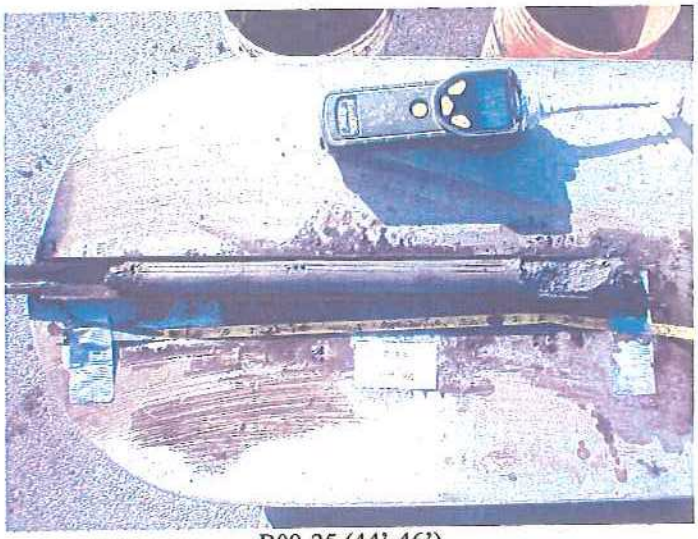
B09-25 (29'-31')



B09-25 (34'-36')

Photo Not Available

B09-25 (39'-41')



B09-25 (44'-46')

B09-25 (49'-51')

Port Marina Predevelopment Site Conditions Gap Investigation
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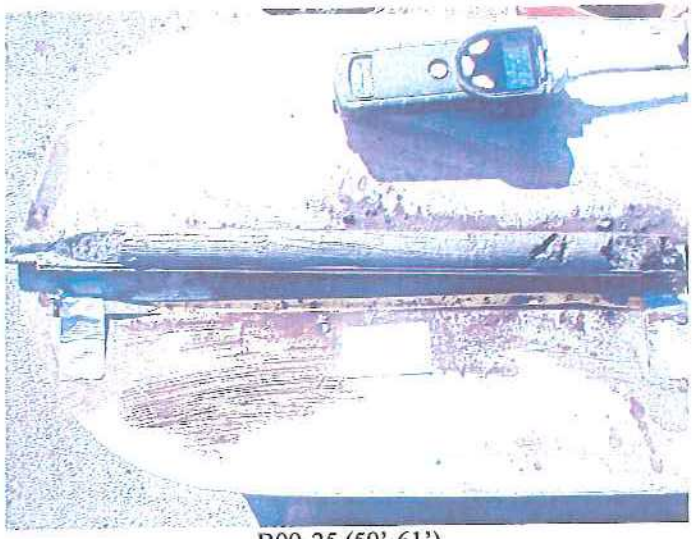
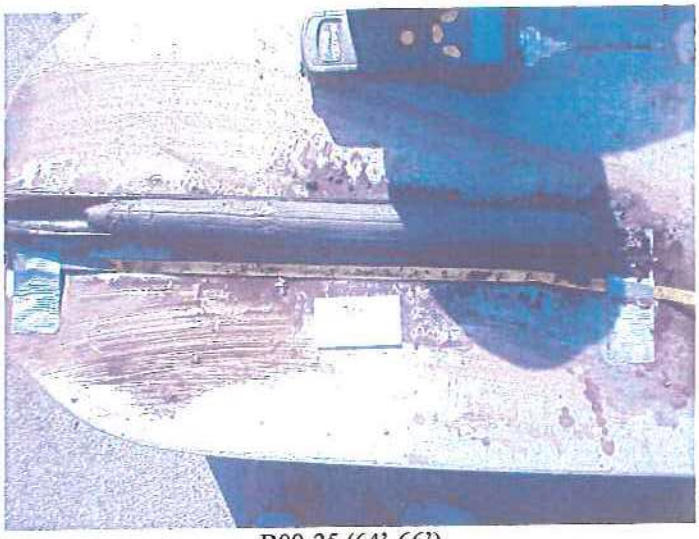
Soil Boring: B09-25
Port of Rochester,Rochester, New York 14606

LABELLA

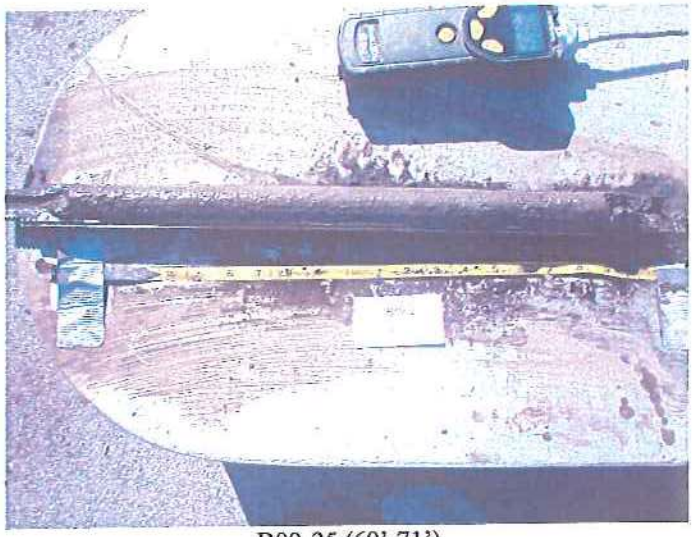
B09-25 (54'-56')



B09-25 (59'-61')

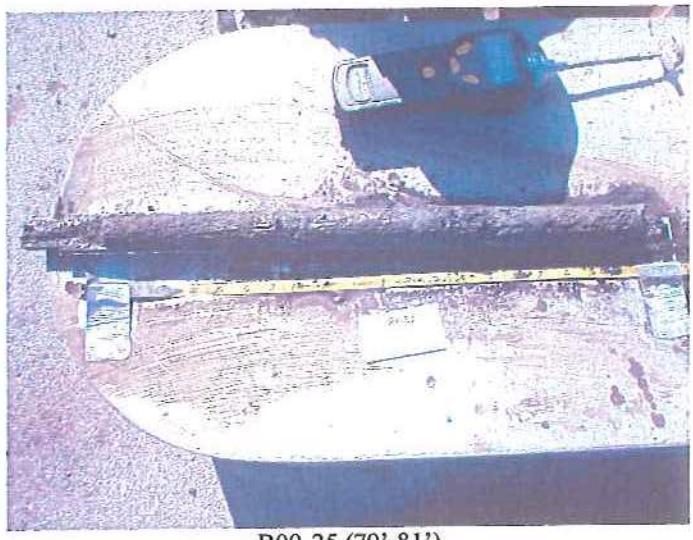


B09-25 (64'-66')



B09-25 (69'-71')

B09-25 (74'-76')



B09-25 (79'-81')

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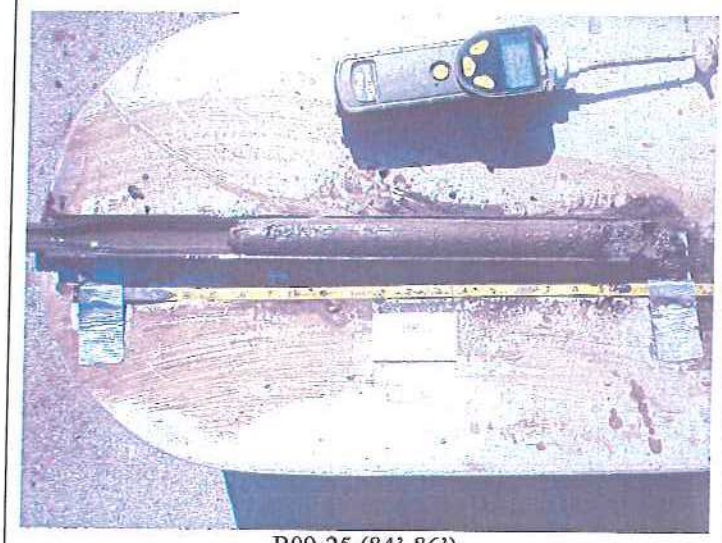
LABELLA



B09-25 (84'-86')

B09-25 (89'-91')

B09-25 (94'-96')

B09-25 (99'-101')

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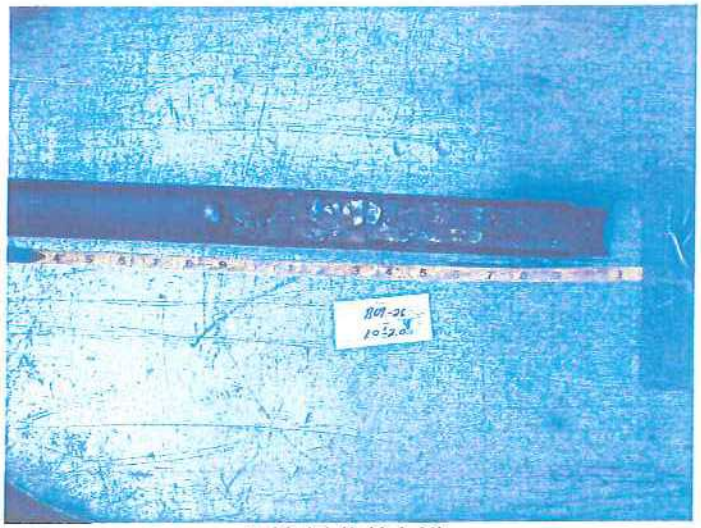
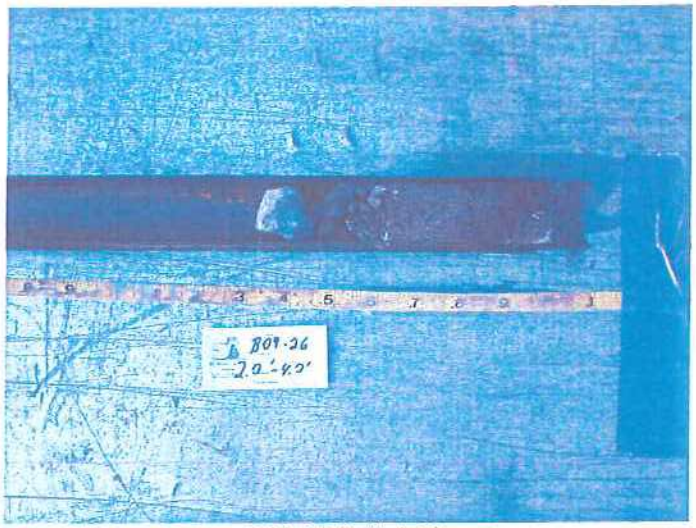
LABELLA



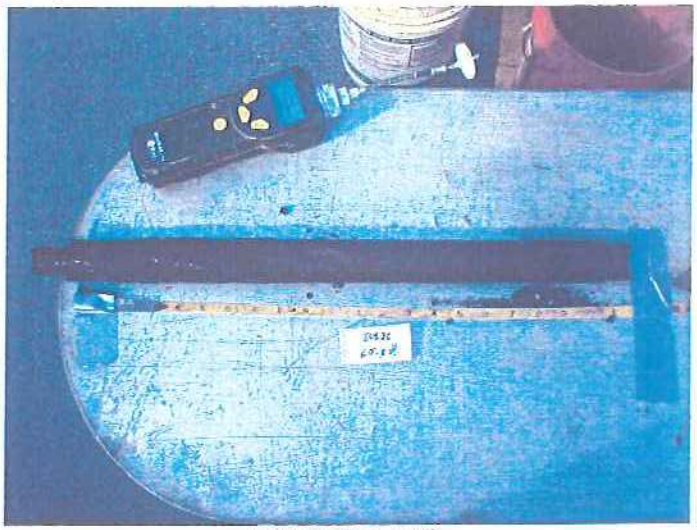
B09-26 (0.0'-2.0')



B09-26 (2.0'-4.0')

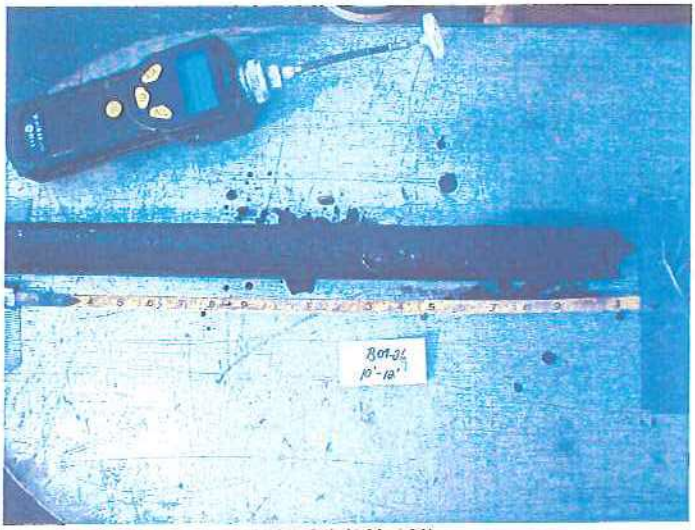
Photo Not Available

B09-26 (4.0'-6.0')



B09-26 (6.0-8.0')

B09-26 (8.0'-10')



B09-26 (10'-12')

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Soil Boring: B09-26
Port of Rochester,Rochester, New York 14606

LABELLA

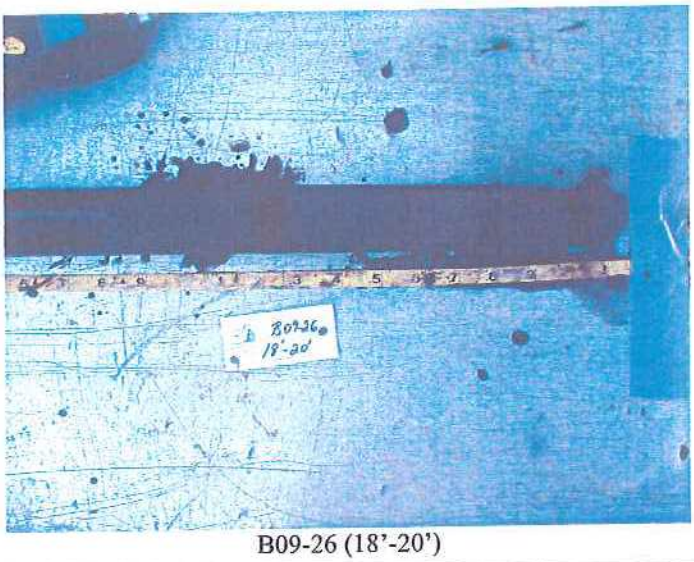
B09-26 (12'-14')

Photo Not Available
(no recovery)

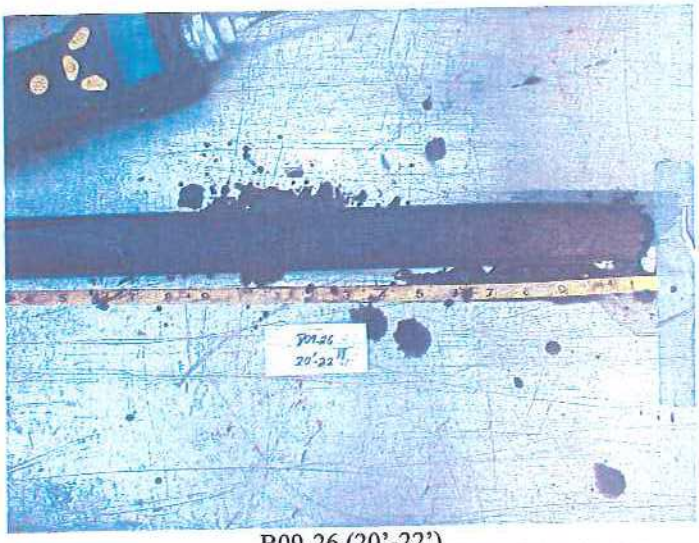
B09-26 (14'-16')

Photo Not Available
(no recovery)

B09-26 (16'-18')



B09-26 (18'-20')



B09-26 (20'-22')

B09-26 (22'-24')

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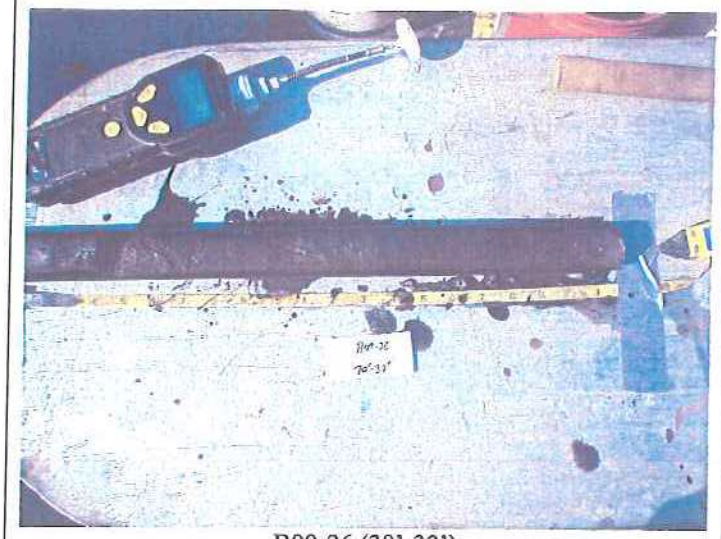
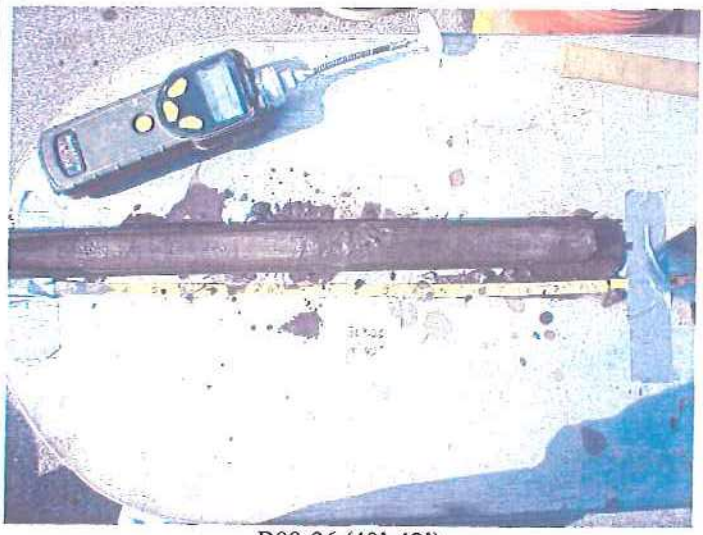
LABELLA



B09-26 (30'-32')

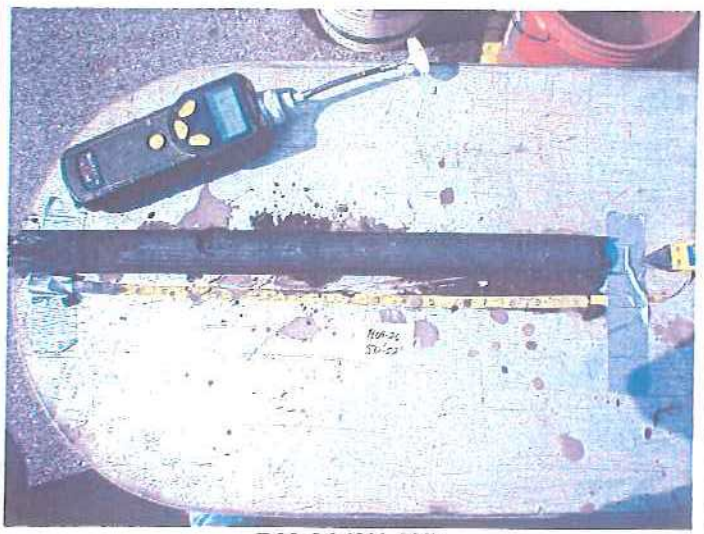
B09-26 (35'-37')



B09-26 (40'-42')

Photo Not Available

B09-26 (45'-47')



B09-26 (50'-52')

B09-26 (55'-57')

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LABELLA

B09-26 (60'-62')

B09-26 (65'-67')

B09-26 (70'-72')

B09-26 (75'-77')

B09-26 (80'-82')

B09-26 (85'-87')

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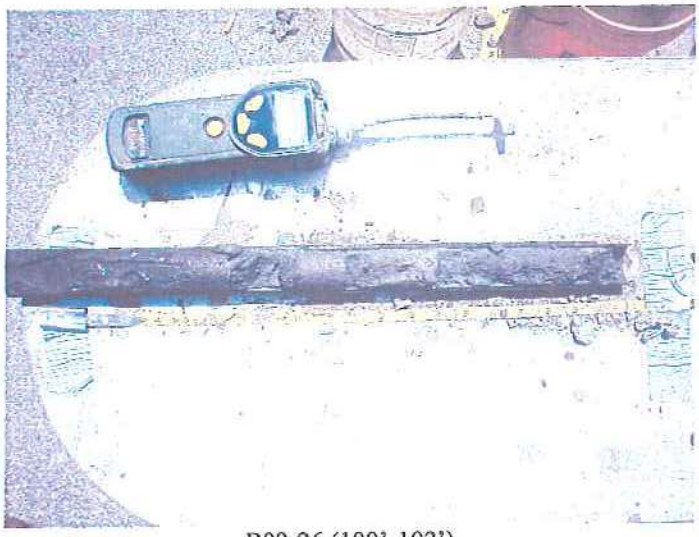
LABELLA

B09-26 (90'-92')

B09-26 (95'-97')

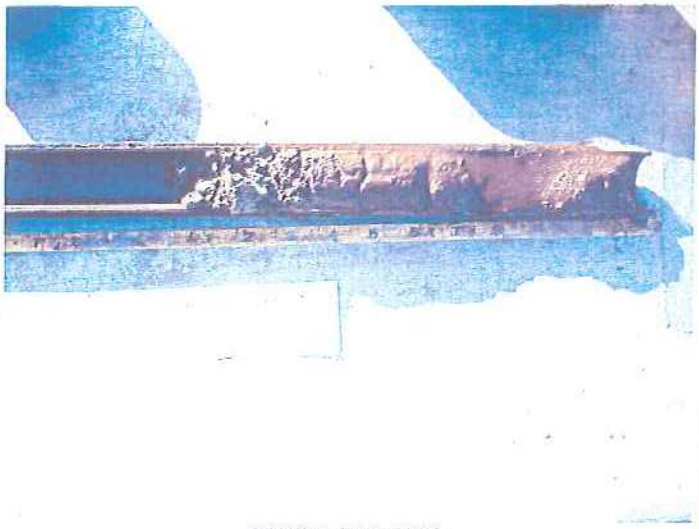


B09-26 (100'-102')

B09-26 (105'-107')

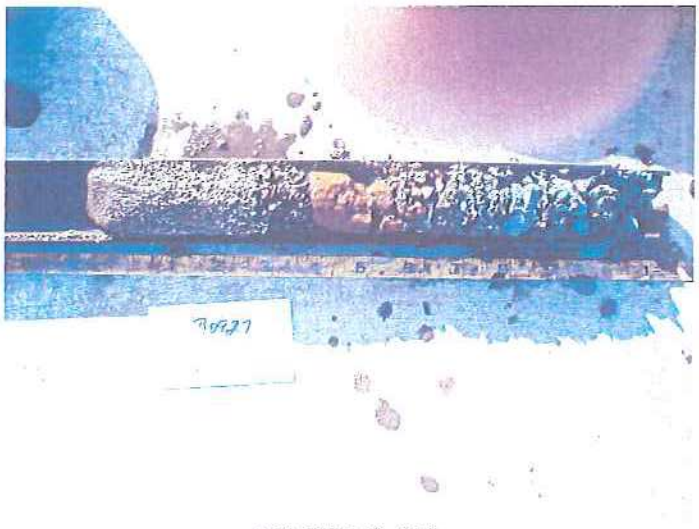
B09-27 (0.0'-2.0')

B09-27 (2.0'-4.0')

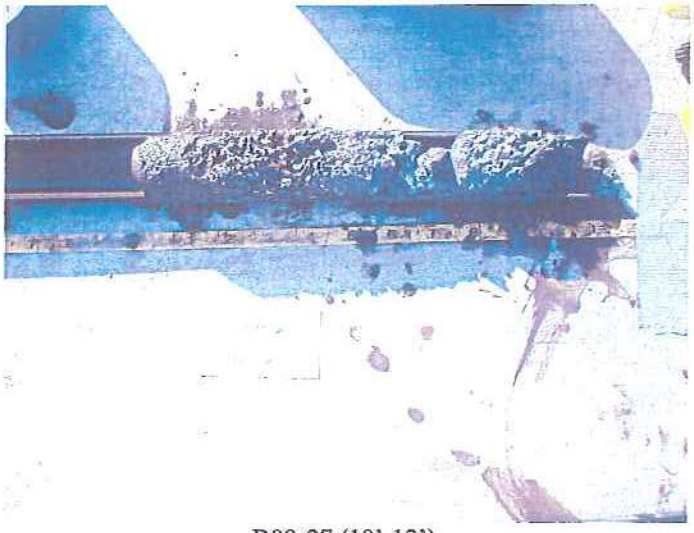


B09-27 (4.0'-6.0')

B09-27 (6.0-8.0')



B09-27 (8.0'-10')



B09-27 (10'-12')

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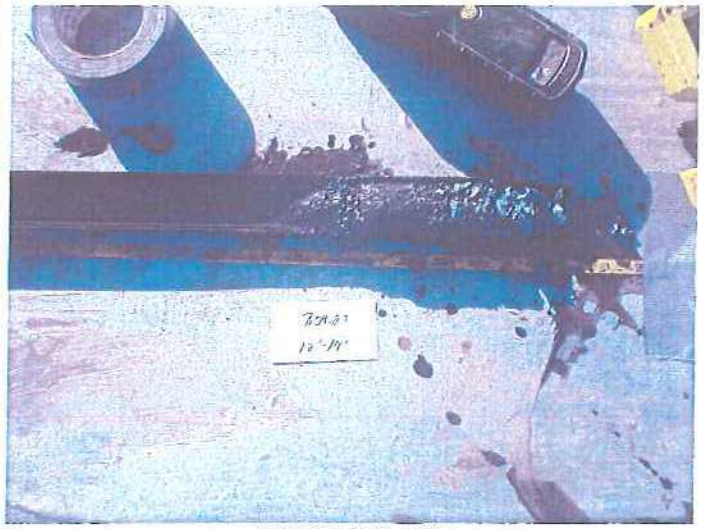
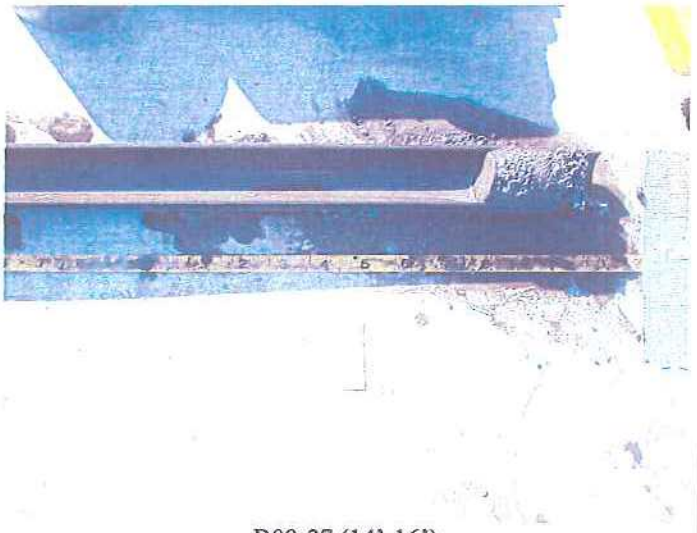
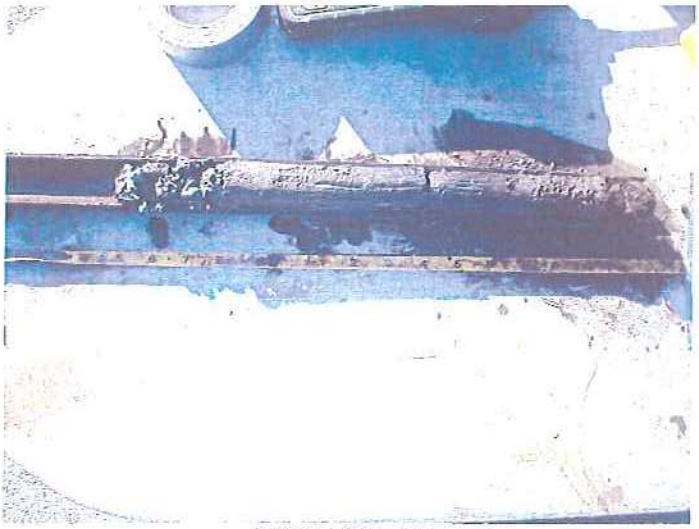
LABELLA



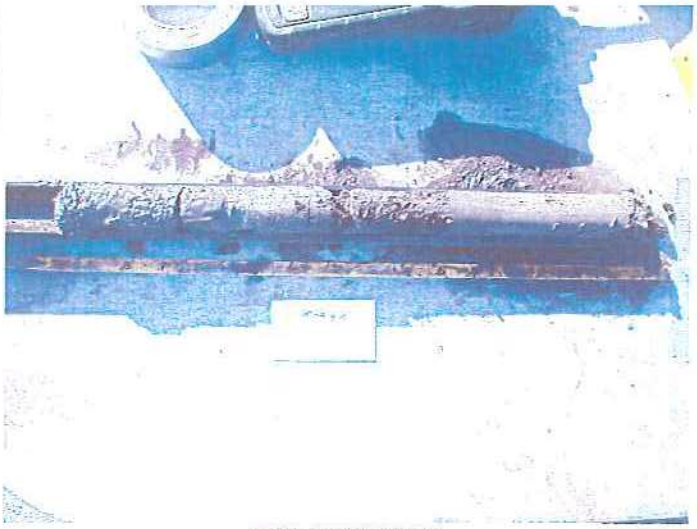
B09-27 (12'-14')



B09-27 (14'-16')



B09-27 (16'-18')



B09-27 (18'-20')

B09-27 (20'-22')

B09-27 (25'-27')

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LABELLA

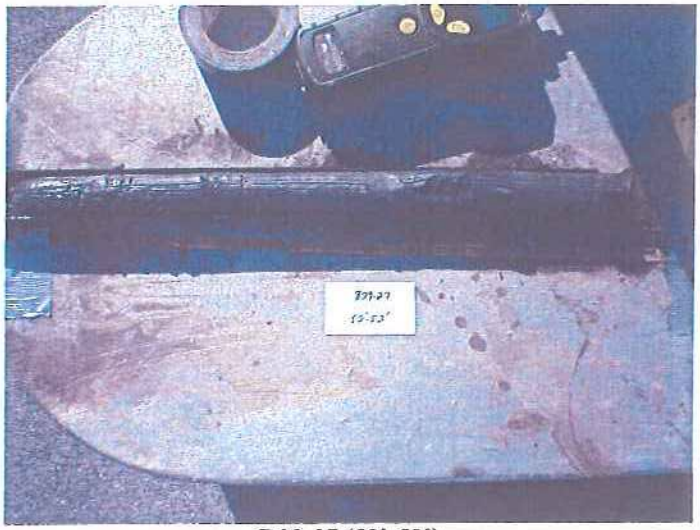
Photo Not Available
(no recovery)

B09-27 (30'-32')

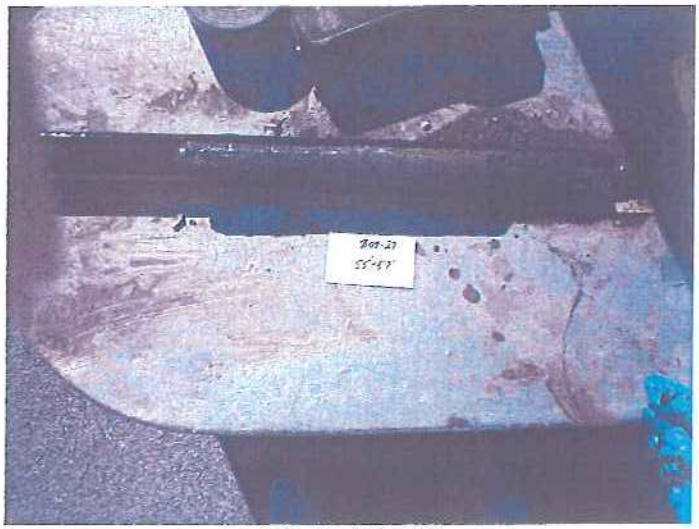
B09-27 (35'-37')

B09-27 (40'-42')

B09-27 (45'-47')



B09-27 (50'-52')



B09-27 (55'-57')

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Port of Rochester,Rochester, New York 14606

LABELLA

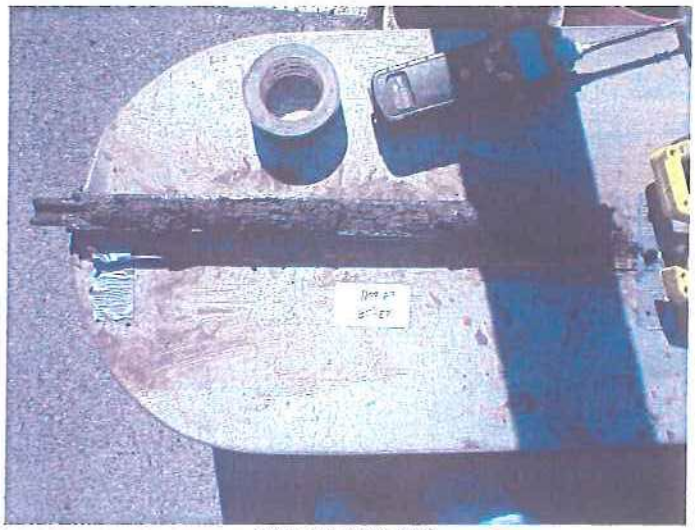
B09-27 (60'-62')

B09-27 (65'-67')

B09-27 (70'-72')

B09-27 (75'-77')

B09-27 (80'-82')



B09-27 (85'-87')

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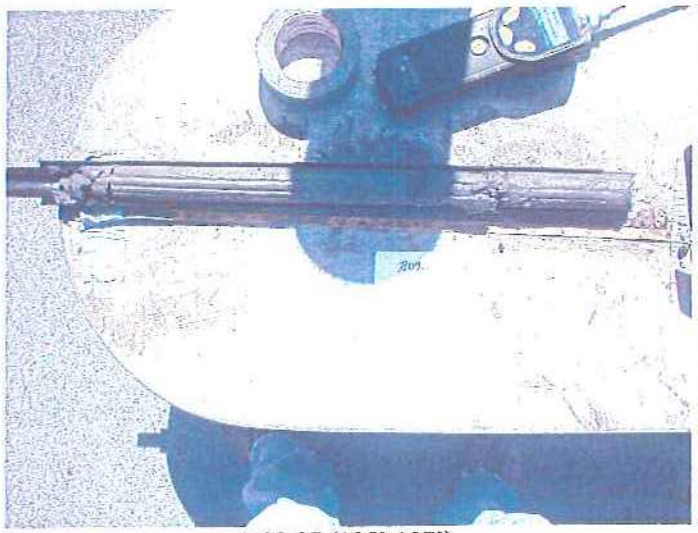
LABELLA

B09-27 (90'-92')

B09-27 (95'-97')

B09-27 (100'-102')



B09-27 (105'-107')

B09-27 (110'-112')

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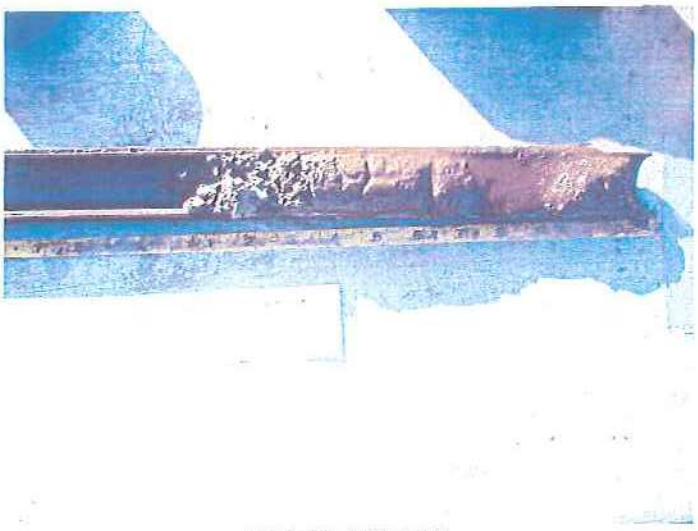
LABELLA

B09-28 (0.0'-2.0')

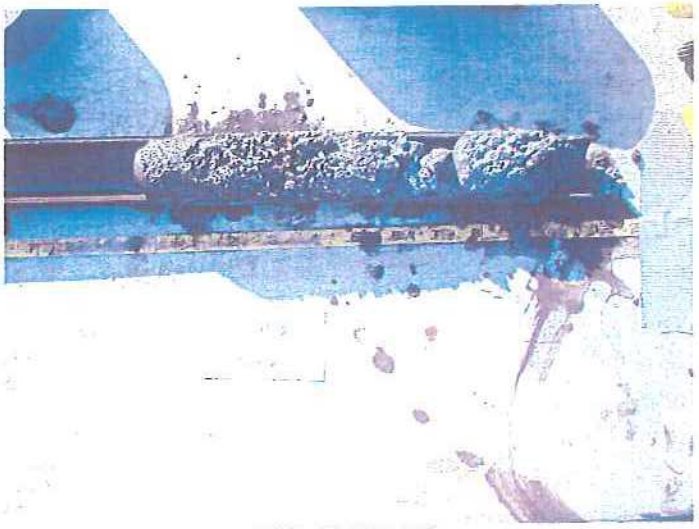
B09-28 (2.0'-4.0')



B09-28 (4.0'-6.0')

B09-28 (6.0-8.0')

B09-28 (8.0'-10')



B09-28 (10'-12')

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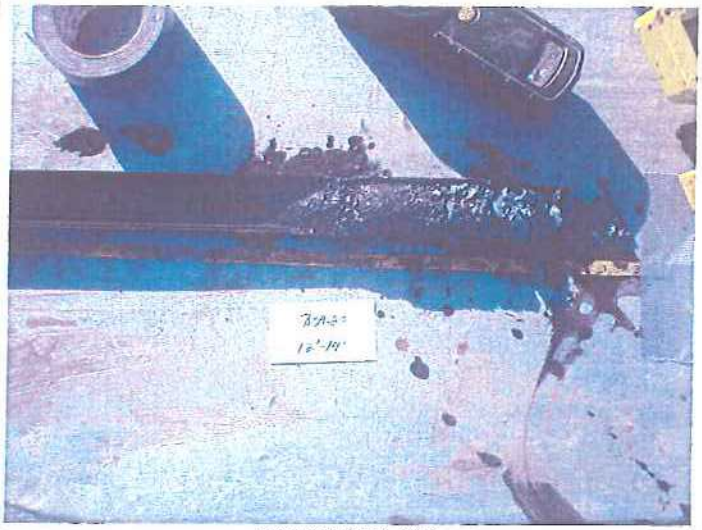
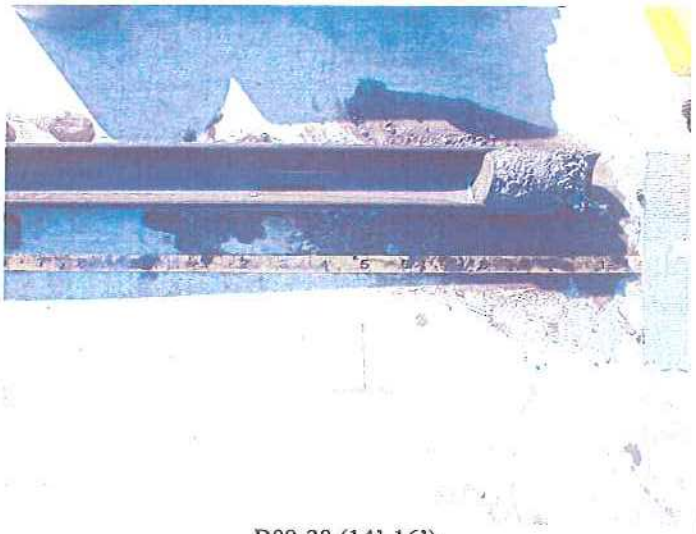
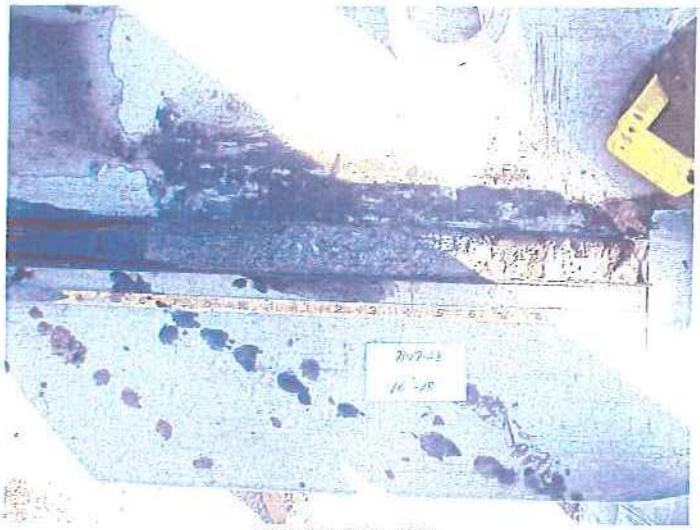
LABELLA



B09-28 (12'-14')



B09-28 (14'-16')



B09-28 (16'-18')

Photo Not Available
(no recovery)

B09-28 (18'-20')

B09-28 (20'-22')

B09-28 (25'-27')

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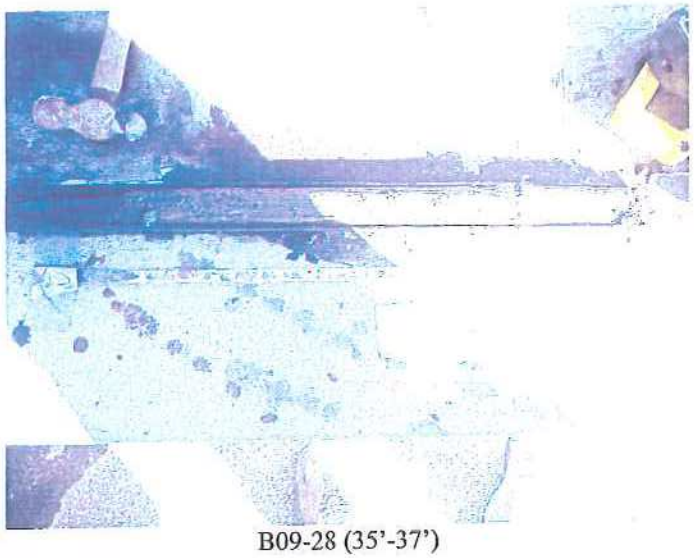
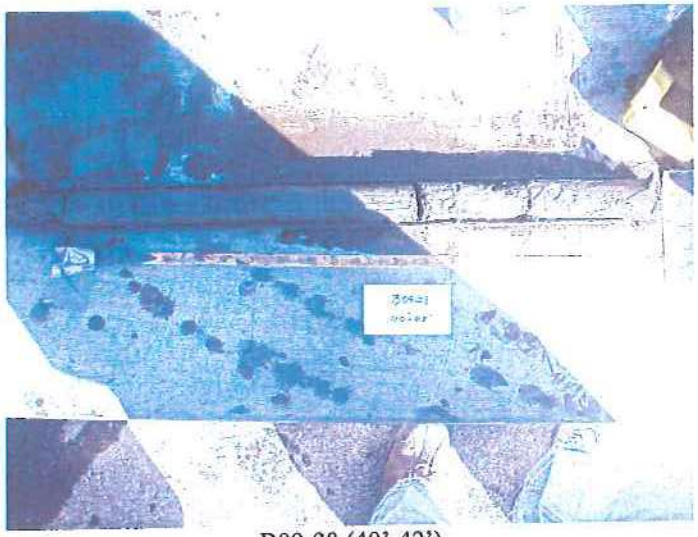
LABELLA

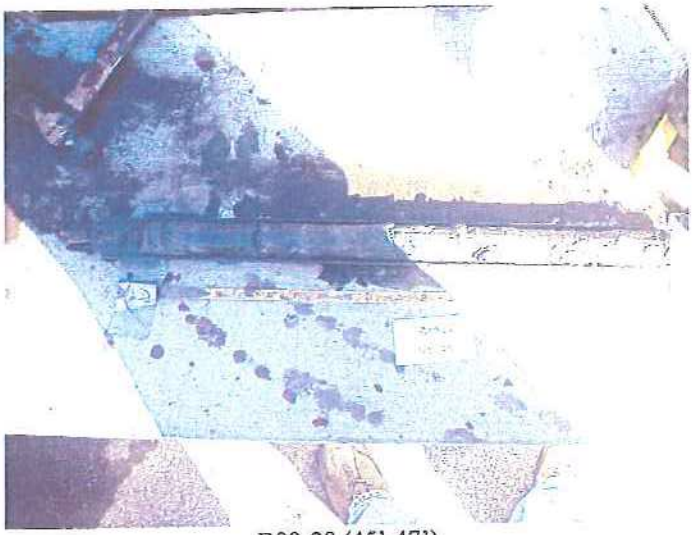
B09-28 (30'-32')



B09-28 (35'-37')

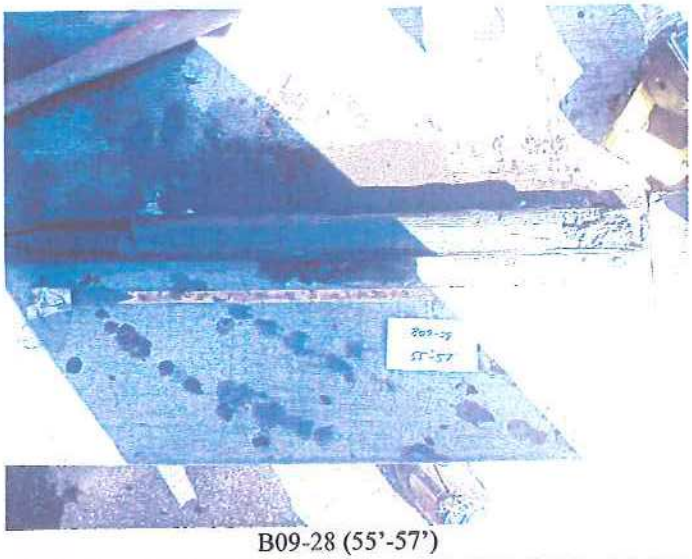


B09-28 (40'-42')



B09-28 (45'-47')

B09-28 (50'-52')



B09-28 (55'-57')

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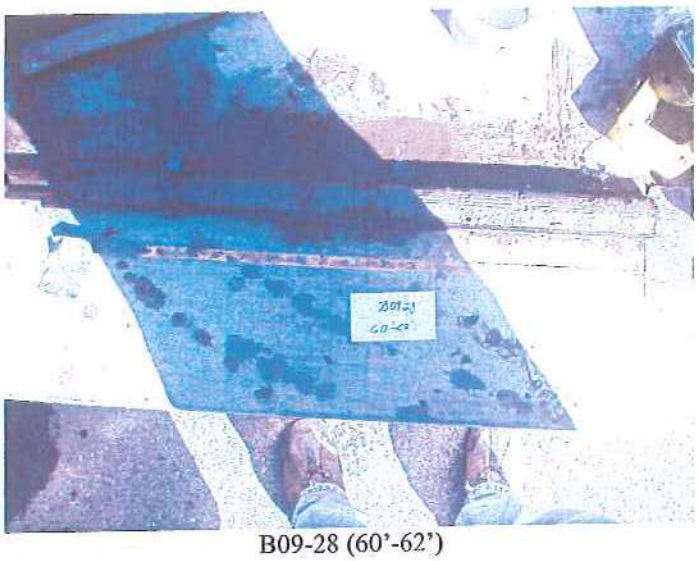
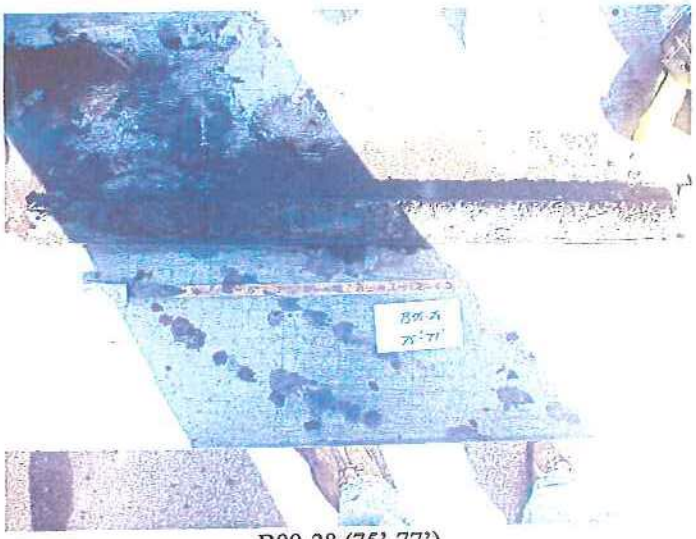
LABELLA



B09-28 (60'-62')

B09-28 (65'-67')

B09-28 (70'-72')



B09-28 (75'-77')

B09-28 (80'-82')

B09-28 (85'-87')

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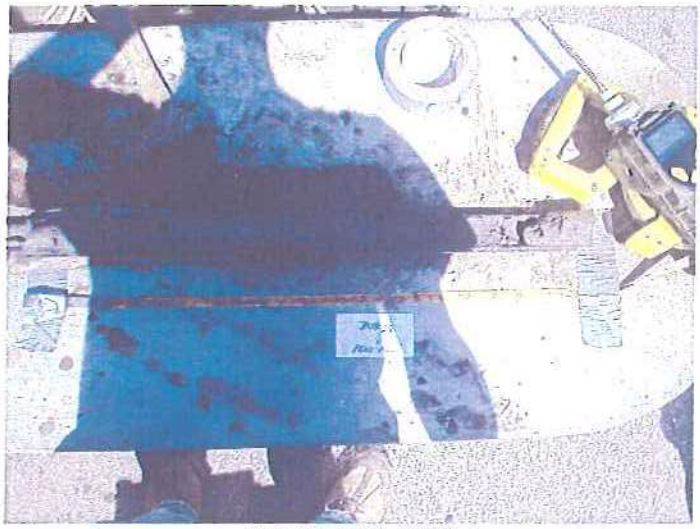
LABELLA

B09-28 (90'-92')

B09-28 (95'-97')



B09-28 (100'-102')

B09-28 (105'-107')

B09-29 (0.0'-2.0')

B09-29 (2.0'-4.0')

B09-29 (4.0'-6.0')

B09-29 (6.0-8.0')

B09-29 (8.0'-10')

B09-29 (10'-12')

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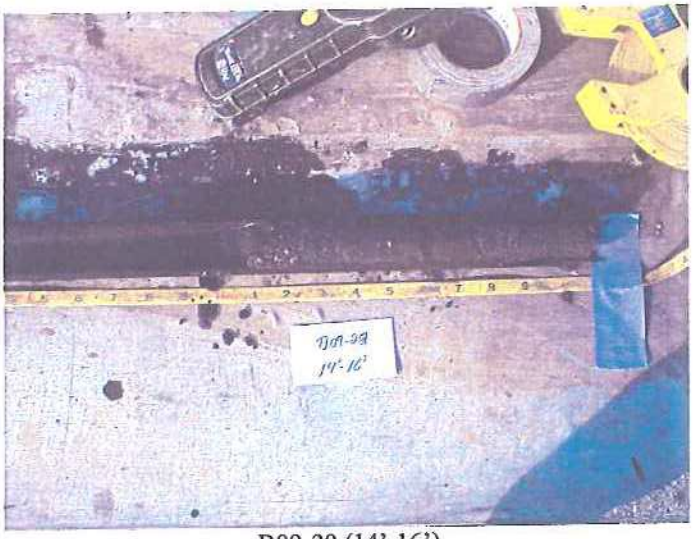
LABELLA

B09-29 (12'-14')



B09-29 (14'-16')

B09-29 (16'-18')

B09-29 (18'-20')

B09-29 (20'-22')

B09-29 (25'-27')

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LABELLA

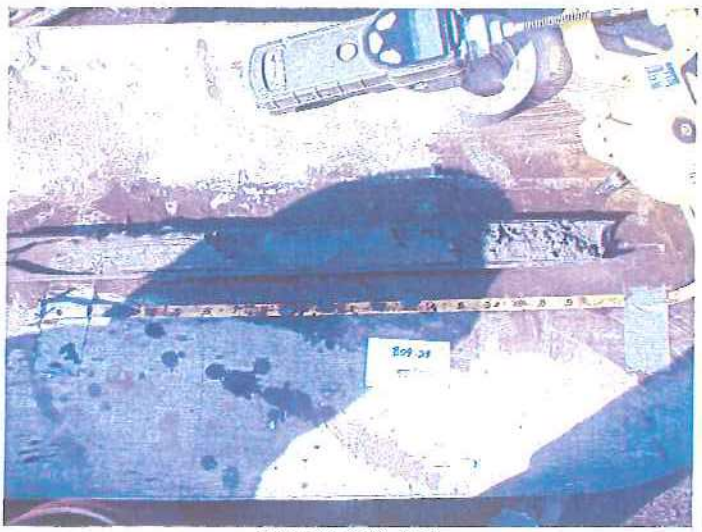
B09-29 (30'-32')


B09-29 (35'-37')


B09-29 (40'-42')


B09-29 (45'-47')


B09-29 (50'-52')


B09-29 (55'-57')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: B09-29
Port of Rochester,Rochester, New York 14606

LABELLA

B09-29 (60'-62')

B09-29 (65'-67')

B09-29 (70'-72')

B09-29 (75'-77')

B09-29 (80'-82')

B09-29 (85'-87')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: B09-29
Port of Rochester,Rochester, New York 14606

LABELLA

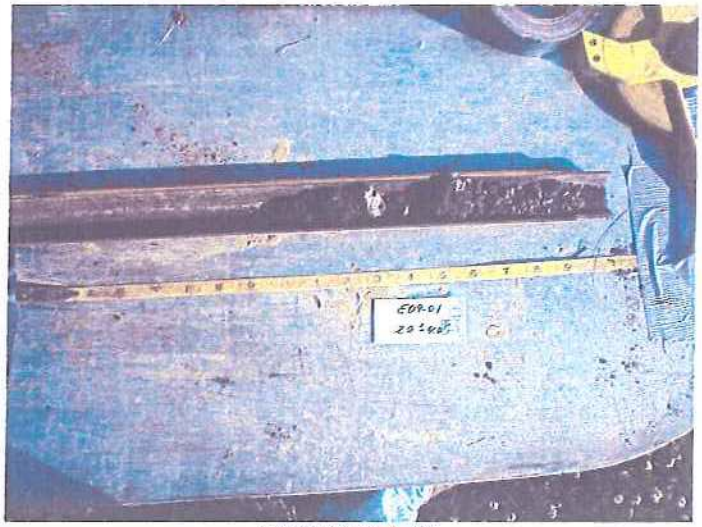
B09-29 (90'-92')

B09-29 (95'-97')

B09-29 (100'-102')

B09-29 (105'-107')

E09-1 (0.0'-2.0')



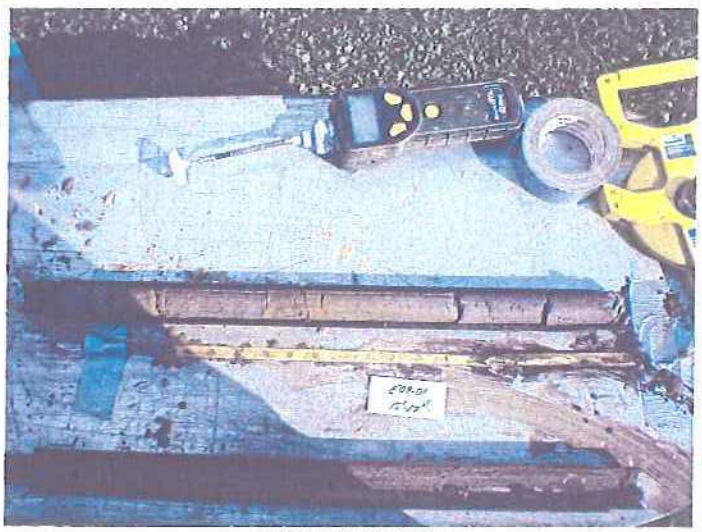
E09-1 (2.0'-4.0')

E09-1 (4.0'-6.0')

Photo Not Available

E09-1 (6.0'-8.0')

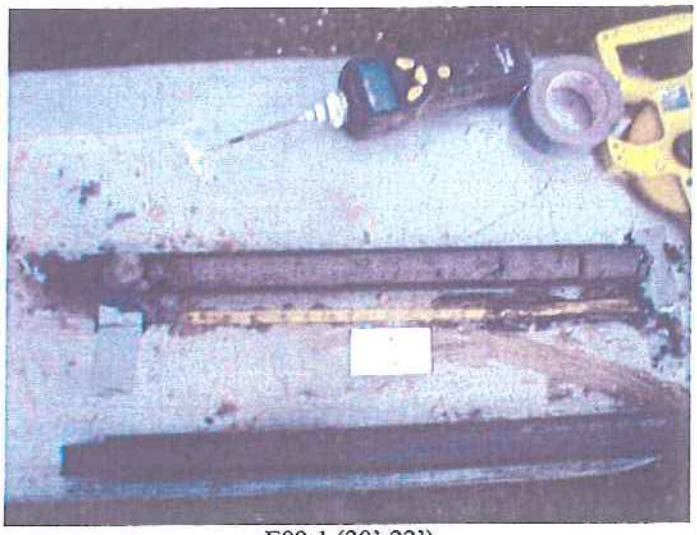
E09-1 (8.0'-10')



E09-1 (15'-17')

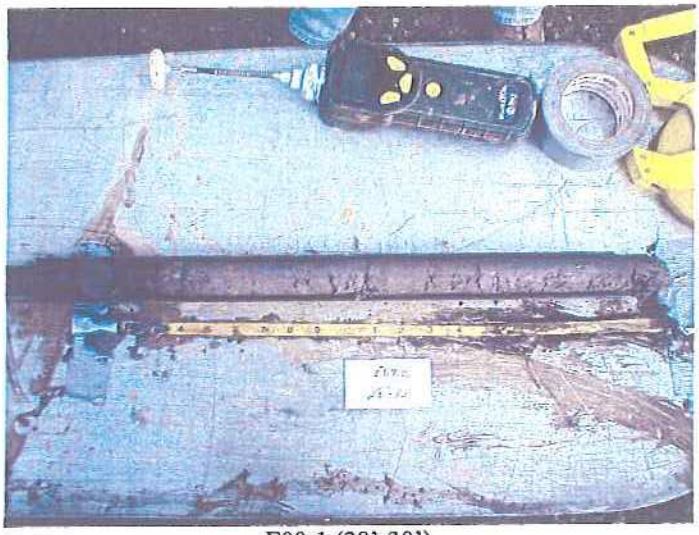
Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: E09-1
Port of Rochester,Rochester, New York 14606

LABELLA



E09-1 (20'-22')

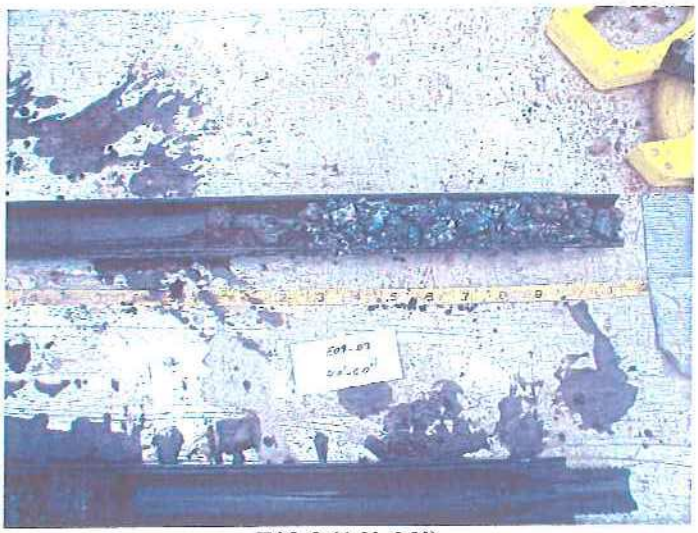
E09-1 (25'-27')



E09-1 (28'-30')

E09-2 (0.0'-2.0')

E09-2 (2.0'-4.0')



E09-2 (4.0'-6.0')

E09-2 (6.0'-8.0')

E09-2 (8.0'-10')

Photo Not Available
(no recovery)

E09-2 (10'-12')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: E09-2
Port of Rochester,Rochester, New York 14606

LABELLA

E09-2 (12'-14')

E09-2 (14'-16')

E09-2 (16'-18')

E09-2 (18'-20')

E09-2 (23'-25')

E09-2 (28'-30')

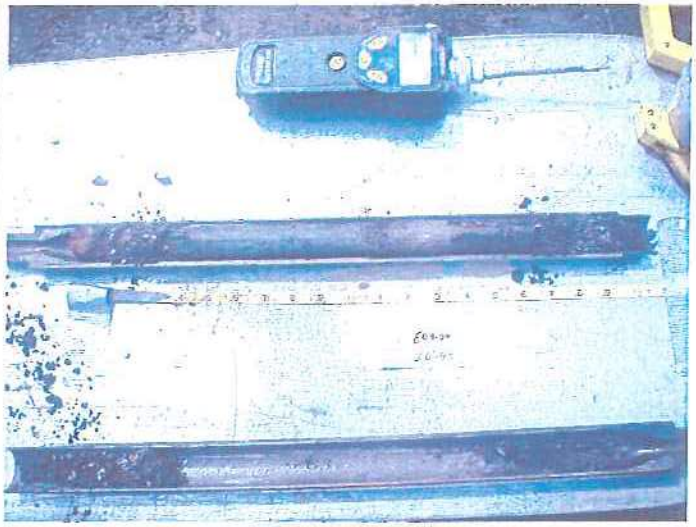
Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: E09-2
Port of Rochester,Rochester, New York 14606

LABELLA

Photos Not Available
(weather conditions did not allow for photos to be taken)

E09-3

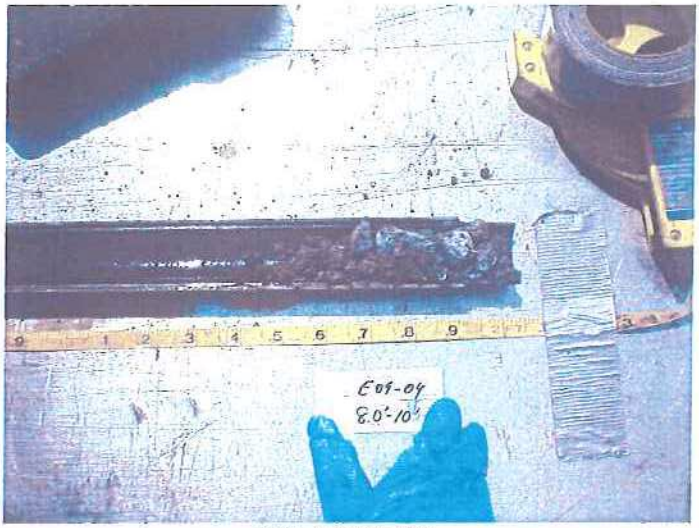
E09-4 (0.0'-2.0')



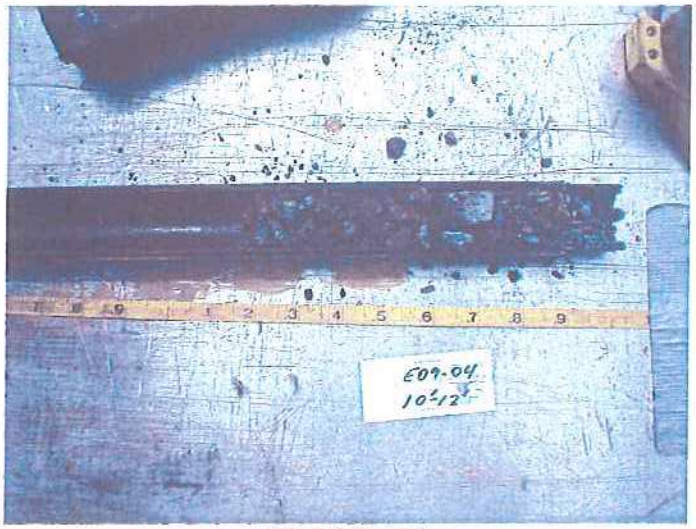
E09-4 (2.0'-4.0')

E09-4 (4.0'-6.0')

E09-4 (6.0'-8.0')



E09-4 (8.0'-10')



E09-4 (10'-12')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: E09-4
Port of Rochester,Rochester, New York 14606

LABELLA

Photo Not Available
(no recovery)

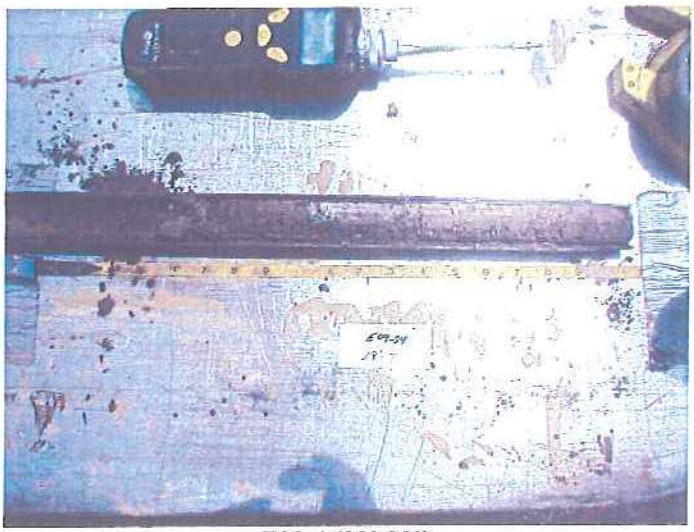
E09-4 (12'-14')

E09-4 (14'-16')

E09-4 (16'-18')

E09-4 (18'-20')

E09-4 (23'-25')



E09-4 (28'-30')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: E09-4
Port of Rochester,Rochester, New York 14606

LABELLA

E09-5 (0.0'-2.0')

E09-5 (2.0'-4.0')

E09-5 (4.0'-6.0')

E09-5 (6.0'-8.0')

E09-5 (8.0'-10')

Photo Not Available

E09-5 (13'-15')

Port Marina Predevelopment Site Conditions Gap Investigation
Proposed Marina
Soil Boring: E09-5
Port of Rochester,Rochester, New York 14606

LABELLA

Photo Not Available

E09-5 (18'-20')

E09-5 (23'-25')

E09-5 (28'-30')

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

Appendix 3

Groundwater Monitoring Well Construction Logs

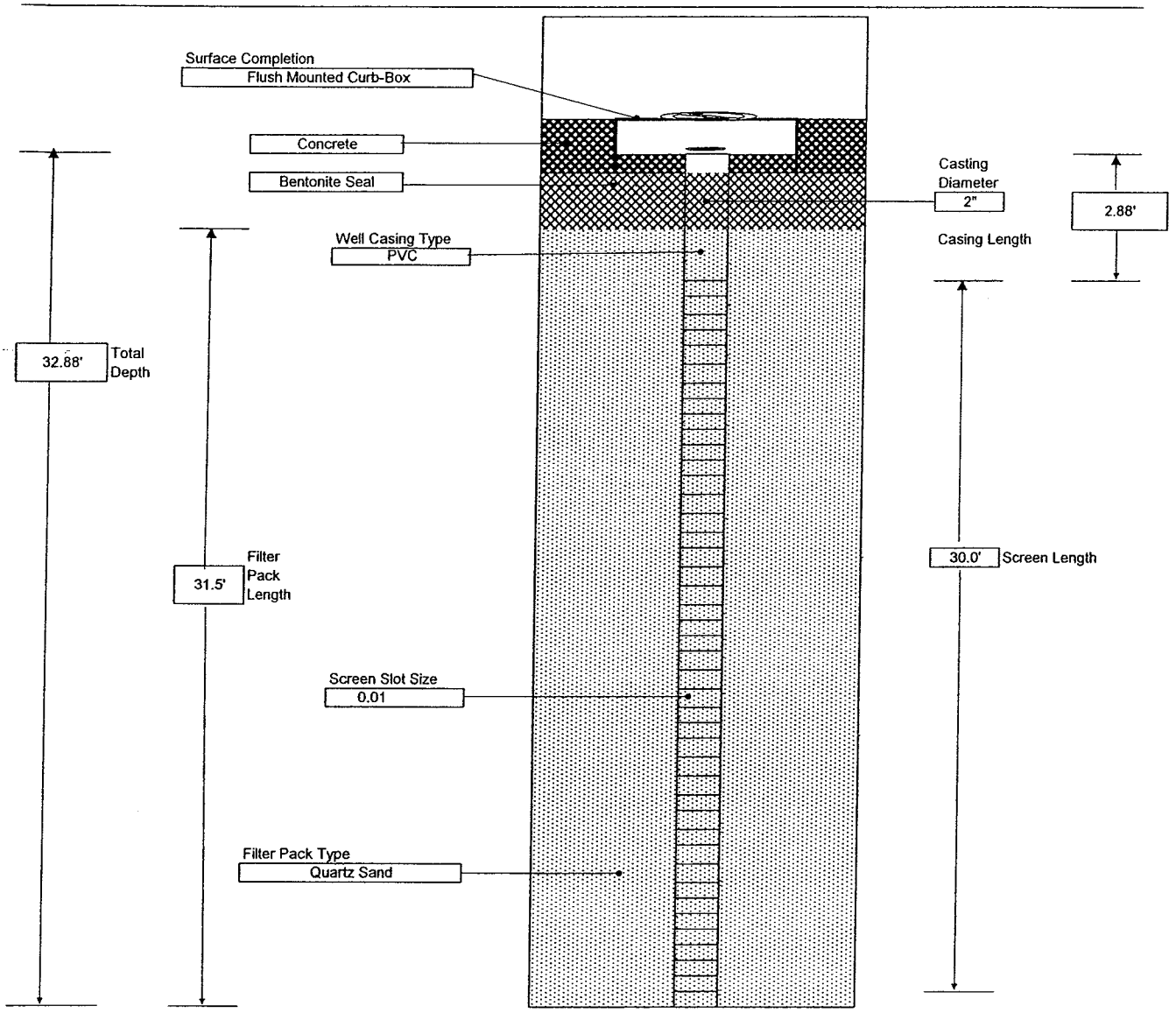
LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Predevelopment Site Conditions Data Gap Investigation Port of Rochester Rochester, New York	BORING: MW09-1 SHEET 1 OF 1 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: N. Short
LABELLA REPRESENTATIVE: Evan Dumrese

BORING LOCATION: B09-19
GROUND SURFACE ELEVATION: 253.20' DATUM: NAVD 88
START DATE: 6/30/09 END DATE: 6/31/09

TYPE OF DRILL RIG: Hollow Stem Auger Rig
AUGER SIZE AND TYPE: 5 1/4" Hollow Stem Auger
OVERBURDEN SAMPLING METHOD: Split Spoon
ROCK DRILLING METHOD: N/A

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



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, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Predevelopment Site Conditions Data Gap Investigation
Port of Rochester
Rochester, New York

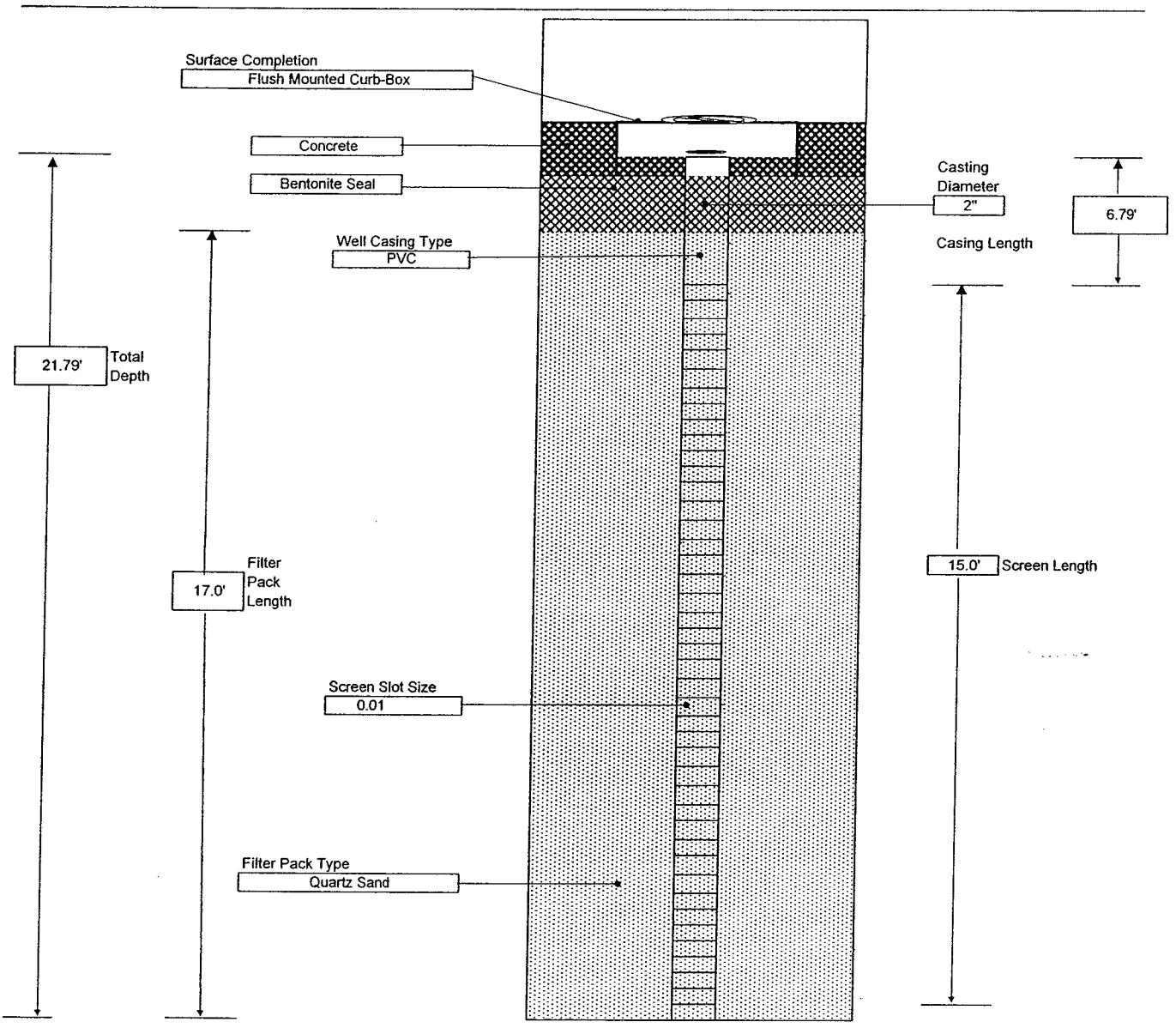
BORING: MW09-2
SHEET 1 OF 1
JOB # 209447
CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: N. Short
LABELLA REPRESENTATIVE: Evan Dumrese

BORING LOCATION: B09-13
GROUND SURFACE ELEVATION: 255.74' DATUM: NAVD 88
START DATE: 7/8/09 END DATE: 784/09

TYPE OF DRILL RIG: Hollow Stem Auger Rig
AUGER SIZE AND TYPE: 5 1/4" Hollow Stem Auger
OVERBURDEN SAMPLING METHOD: Split Spoon
ROCK DRILLING METHOD: N/A

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



TE: 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.

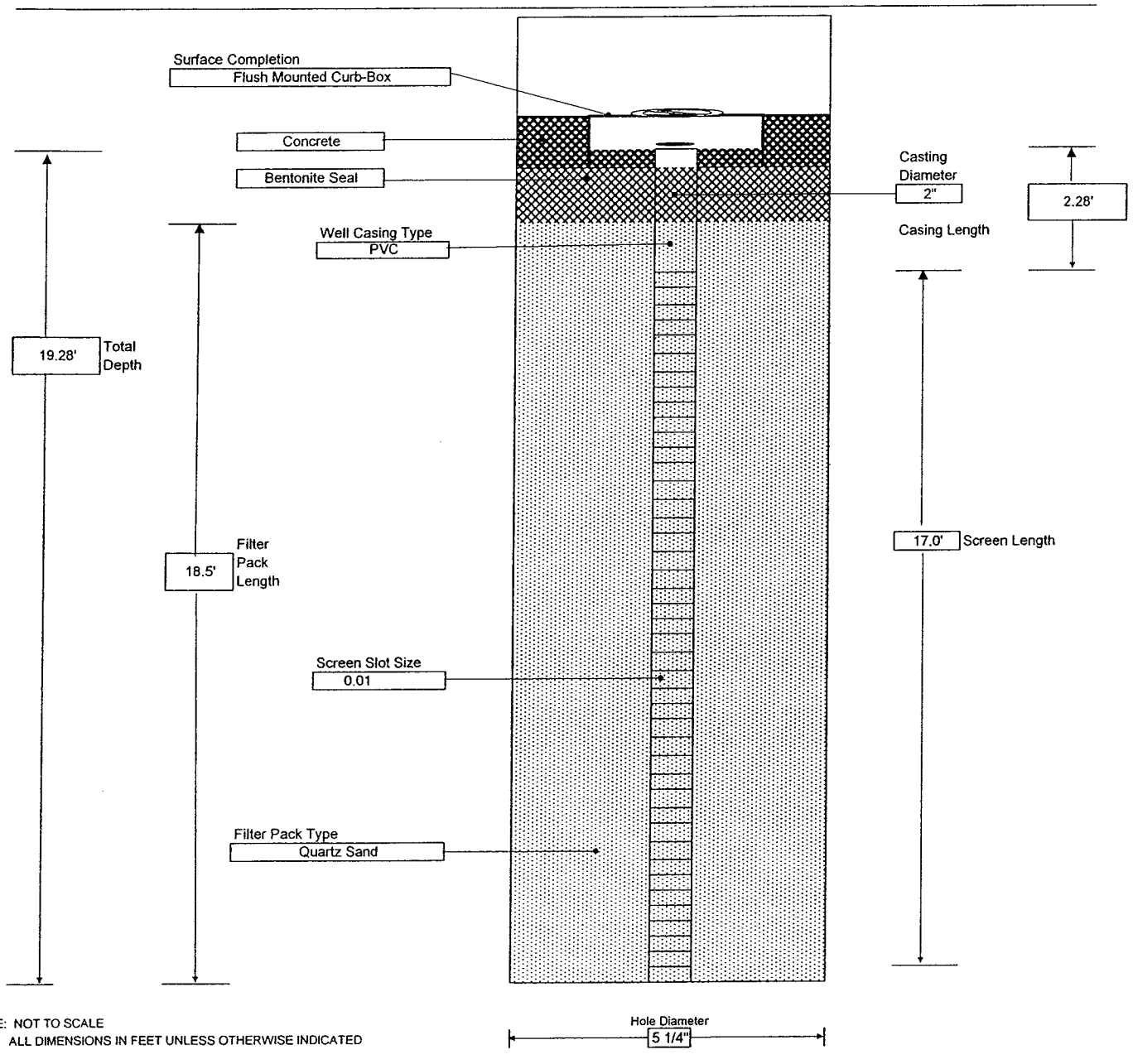
LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	PROJECT Predevelopment Site Conditions Data Gap Investigation Port of Rochester Rochester, New York	BORING: MW09-3 SHEET 1 OF 1 JOB # 209447 CHKD. BY: ED

CONTRACTOR: Nothnagle Drilling, Inc.
DRILLER: N. Short
LABELLA REPRESENTATIVE: Evan Dumrese

BORING LOCATION: B09-28
GROUND SURFACE ELEVATION: 252.04' DATUM: NAVD 88
START DATE: 7/14/09 END DATE: 714/09

TYPE OF DRILL RIG: Hollow Stem Auger Rig
AUGER SIZE AND TYPE: 5 1/4" Hollow Stem Auger
OVERBURDEN SAMPLING METHOD: Split Spoon
ROCK DRILLING METHOD: N/A

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS



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

Appendix 4

Low Flow Groundwater Sampling Logs

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

Project Name: Port of Rochester – Predevelopment Site Conditions Data Gap Investigation
Location: Port of Rochester, Rochester, New York
Project No.: 209447
Sampled By: E. Dumrese
Date: 7/27/2009
Weather: Sunny & Warm ~73 degrees F.

WELL I.D.: B09-19/MW09-1

WELL SAMPLING INFORMATION

Well Diameter: 2"
Depth of Well: 32.88'
Measuring Point: Top of PVC
Pump Type: QED Sample Pro Bladder Pump

Static Water Level: 3.75'
Length of Well Screen: 30.0' (2.0'-32.0')
Depth to Top of Pump: ~17.0'
Tubing Type: HDPE

FIELD PARAMETER MEASUREMENT

Time	Pump Rate	Gallons Purged	pH	Temp °C	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved O_2 (mg/L)	Redox (mV)	Depth to Water (ft)		Comments
			+/- 0.1		+/- 3%		+ 10%	+/- 10 mV			
1058	<0.2 L/min	0.0	7.70	15.10	2.13	-5.0	8.10	-40	4.50		
1100	<0.2 L/min	0.1	7.68	15.03	2.07	-5.0	6.02	-53	4.51		
1102	<0.2 L/min	0.2	8.94	14.09	1.86	-5.0	0.00	-98	4.52		
1104	<0.2 L/min	0.3	9.22	14.21	1.91	-5.0	0.00	-109	4.53		
1106	<0.2 L/min	0.4	9.35	14.14	1.85	-5.0	0.00	-117	4.53		
1108	<0.2 L/min	0.5	9.40	14.15	1.82	-5.0	0.00	-122	4.51		
1110	<0.2 L/min	0.6	9.41	14.32	1.82	-5.0	0.00	-127	4.50		
1112	<0.2 L/min	0.7	9.43	14.56	1.91	-5.0	0.00	-134	4.50		
1114	<0.2 L/min	0.8	9.45	14.86	1.94	-5.0	0.00	-137	4.51		

Total 0.8 Gallons Purged

Purge Time Start: 1058 Purge Time End: 1114 Final Static Water Level: 4.51

OBSERVATIONS

Notes: - One well volume = ~4.75 gallons
- Developed well by removing 3 well volumes = ~14.5 gallons

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

Project Name: Port of Rochester – Predevelopment Site Conditions Data Gap Investigation
Location: Port of Rochester, Rochester, New York
Project No.: 209447
Sampled By: E. Dumrese
Date: 7/27/2009
Weather: Sunny & Warm ~73 degrees F.

WELL I.D.: B09-13/MW09-2

WELL SAMPLING INFORMATION

Well Diameter: 2"
Depth of Well: 21.79'
Measuring Point: Top of PVC
Pump Type: QED Sample Pro Bladder Pump

Static Water Level: 7.13'
Length of Well Screen: 15.0' (7.0'-22.0')
Depth to Top of Pump: ~14.5'
Tubing Type: HDPE

FIELD PARAMETER MEASUREMENT

Time	Pump Rate	Gallons Purged	pH	Temp °C	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved O_2 (mg/L)	Redox (mV)	Depth to Water (ft)		Comments
			+/- 0.1		+/- 3%		+ 10%	+/- 10 mV			
1156	<0.2 L/min	0.0	9.11	18.55	19.0	680.0	2.82	-132	6.82		
1158	<0.2 L/min	0.1	9.60	18.45	21.1	662.0	2.68	-146	7.10		
1200	<0.2 L/min	0.2	10.21	16.92	223.1	482.0	0.00	-177	7.12		
1202	<0.2 L/min	0.3	10.63	16.27	22.9	371.0	0.00	-200	7.12		
1204	<0.2 L/min	0.4	10.97	16.07	22.6	307.0	0.00	-227	7.12		
1206	<0.2 L/min	0.5	11.23	16.17	22.4	261.0	0.00	-261	7.13		
1208	<0.2 L/min	0.6	11.47	16.17	22.2	224.0	0.00	-289	7.13		
1210	<0.2 L/min	0.7	11.71	16.10	22.1	202.0	0.00	-318	7.14		
1212	<0.2 L/min	0.8	11.81	15.90	21.9	187.0	0.00	-331	7.14		
1214	<0.2 L/min	0.9	11.87	15.98	21.9	143.0	0.00	-339	7.15		
1216	<0.2 L/min	1.0	11.94	15.69	21.8	110.0	0.00	-347	7.15		
1218	<0.2 L/min	1.1	11.98	15.81	21.6	91.0	0.00	-352	7.16		
1220	<0.2 L/min	1.2	11.97	15.99	21.7	65.0	0.00	-356	7.16		
1222	<0.2 L/min	1.3	11.99	16.02	21.8	48.0	0.00	-353	7.17		

Total 1.3 Gallons Purged

Purge Time Start: 1156 Purge Time End: 1222 Final Static Water Level: 7.17'

OBSERVATIONS

Notes: - One well volume = ~2.39 gallons
- Developed well by removing 3 well volumes ~7.17 gallons

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

Project Name: Port of Rochester – Predevelopment Site Conditions Data Gap Investigation
Location: Port of Rochester, Rochester, New York
Project No.: 209447
Sampled By: E. Dumrese
Date: 7/27/2009
Weather: Sunny & Warm ~ 73 degrees F.

WELL I.D.: B09-28/MW09-3

WELL SAMPLING INFORMATION

Well Diameter: 2"
Depth of Well: 19.28'
Measuring Point: Top of PVC
Pump Type: QED Sample Pro Bladder Pump (Low Flow)

Static Water Level: 3.62'
Length of Well Screen: 17.0' (3.0'-20.0')
Depth to Top of Pump: ~12.5'
Tubing Type: HDPE

FIELD PARAMETER MEASUREMENT

Time	Pump Rate	Gallons Purged	pH	Temp °C	Conductivity (µS/cm)	Turbidity (NTU)	Dissolved O_2 (mg/L)	Redox (mV)	Depth to Water (ft)		Comments
			+/- 0.1		+/- 3%		+ 10%	+/- 10 mV			
1322	<0.2 L/min	0.0	10.05	20.18	5.26	-5.0	10.99	-141	3.67		
1324	<0.2 L/min	0.1	10.00	20.17	5.13	-5.0	0.85	-133	3.68		
1326	<0.2 L/min	0.2	9.33	18.52	4.90	-5.0	0.80	-125	3.60		
1328	<0.2 L/min	0.3	9.29	17.53	4.87	-5.0	0.00	-129	3.62		
1330	<0.2 L/min	0.4	9.25	17.24	5.00	-5.0	0.00	-131	3.62		
1332	<0.2 L/min	0.5	9.23	16.97	5.19	-5.0	0.00	-133	3.63		
1334	<0.2 L/min	0.6	9.22	16.95	5.15	-5.0	0.00	-130	3.63		

Total 0.6 Gallons Purged

Purge Time Start: 1322 Purge Time End: 1334 Final Static Water Level: 3.63'

OBSERVATIONS

Notes: - One well volume = ~2.55 gallons
- Developed well by removing three well volumes = ~7.66 gallons

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

Appendix 5

Hydraulic Conductivity Worksheets

Exhibit 1

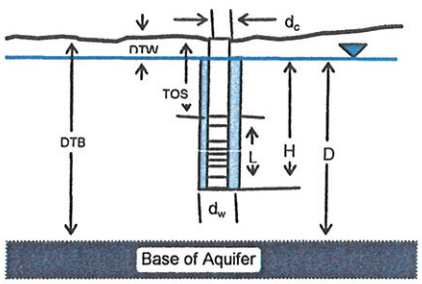
Electronic Figures

WELL ID: MW09-1

Local ID: B09-19/MW09-1
Date: 7/21/2009
Time: 10:27

INPUT

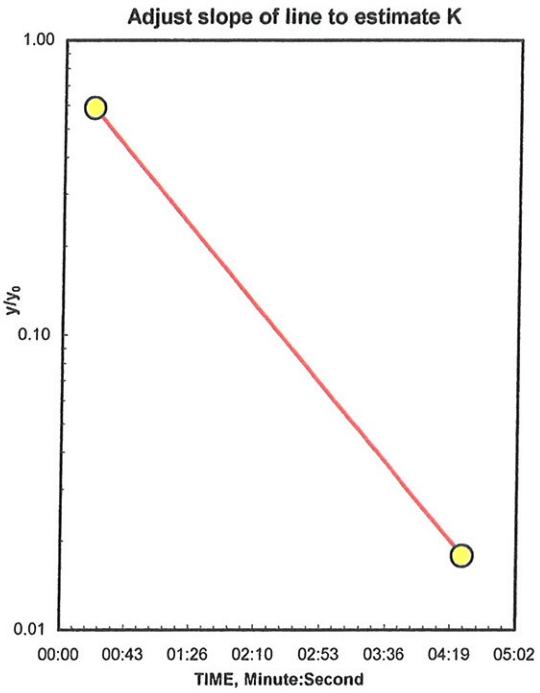
Construction:		
Casing dia. (d_c)	2	Inch
Annulus dia. (d_w)	5.25	Inch
Screen Length (L)	30	Feet
Depths to:		
water level (DTW)	3.77	Feet
top of screen (TOS)	2	Feet
Base of Aquifer (DTB)	32	Feet
Annular Fill:		
across screen --	Coarse Sand	
above screen --	Bentonite	
Aquifer Material --	Fine Sand	



COMPUTED

L_{wetted}	28.23	Feet
D =	28.23	Feet
H =	28.23	Feet
L/r_w =	129.05	
$y_{0\text{-DISPLACEMENT}}$ =	3.77	Feet
$y_{0\text{-SLUG}}$ =	1.69	Feet
From look-up table using L/r_w		
Fully penetrate C =	5.294	
ln(Re/rw) =	3.740	
Re =	9.21	Feet
Slope =	0.006147	$\log_{10}$/sec
$t_{90\%}$ recovery =	163	sec

K = 0.561993 Feet/Day



Bouwer and Rice analysis of slug test, WRR 1976

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	10:27:00.0	0.00
2	10:27:07.0	0.08
3	10:27:14.0	0.10
4	10:27:21.0	-0.13
5	10:27:28.0	-0.15
6	10:27:35.0	-0.16
7	10:28:42.0	-0.18
8	10:28:49.0	-0.19
9	10:28:56.0	-0.21
10	10:29:03.0	-0.21
11	10:29:10.0	-0.23
12	10:29:17.0	-0.24
13	10:29:24.0	-0.25
14	10:29:31.0	-0.26
15	10:30:38.0	-0.27
16	10:30:45.0	-0.28
17	10:30:52.0	-0.28
18	10:30:59.0	-0.30
19	10:31:06.0	-0.30
20	10:31:13.0	-0.31
21	10:31:20.0	-0.31
22	10:31:27.0	-0.32
23	10:31:34.0	-0.33
24	10:32:41.0	-0.34
25	10:32:48.0	-0.34
26	10:32:55.0	-0.35
27	10:33:02.0	-0.36
28	10:33:09.0	-0.36
29	10:33:16.0	-0.36
30	10:33:23.0	-0.36
31	10:33:30.0	-0.38
32	10:34:37.0	-0.38
33	10:34:44.0	-0.39
34	10:34:51.0	-0.39
35	10:34:58.0	-0.40
36	10:35:05.0	-0.40
37	10:35:12.0	-0.40
38	10:35:19.0	-0.41
39	10:35:26.0	-0.42
40	10:35:33.0	-0.42
41	10:36:40.0	-0.42
42	10:36:47.0	-0.43
43	10:36:54.0	-0.44

WELL ID: MW09-2

Local ID: 12/MW09-2
Date: 7/21/2009
Time: 9:27

INPUT

Construction:

Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	5.25 Inch
Screen Length (L)	15 Feet

Depths to:

water level (DTW)	7.13 Feet
top of screen (TOS)	7 Feet
Base of Aquifer (DTB)	23 Feet

Annular Fill:

across screen -- Coarse Sand
above screen -- Bentonite

Aquifer Material -- Fine Sand

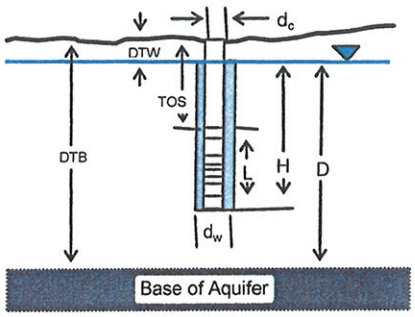
COMPUTED

L_{wetted}	14.87 Feet
D =	15.87 Feet
H =	14.87 Feet
L/r_w =	67.98
$y_{0\text{-DISPLACEMENT}}$ =	7.13 Feet
$y_{0\text{-SLUG}}$ =	1.59 Feet

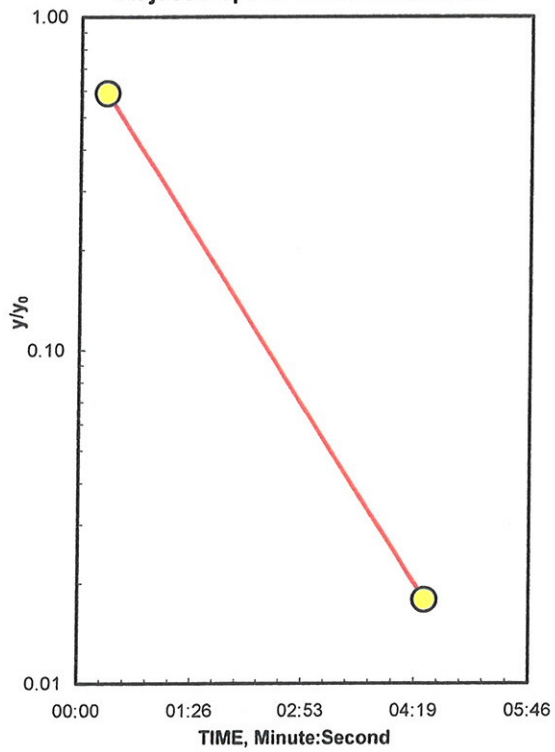
From look-up table using L/r_w

Partial penetrate A =	3.629
B =	0.590
ln(Re/rw) =	3.055
Re =	4.64 Feet
Slope =	0.006147 $\log_{10}$/sec
$t_{90\%}$ recovery =	163 sec

K = 0.8715 Feet/Day



Adjust slope of line to estimate K



Bouwer and Rice analysis of slug test, WRR 1976

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	9:27:00.0	0.00
2	9:27:06.5	0.18
3	9:27:13.0	0.07
4	9:28:19.5	0.04
5	9:28:26.0	0.02
6	9:28:32.5	0.01
7	9:28:39.0	0.01
8	9:28:45.5	0.01
9	9:28:52.0	0.01
10	9:28:58.5	0.01
11	9:29:05.0	0.01
12	9:29:11.5	0.01
13	9:29:18.0	0.01
14	9:30:24.5	0.01
15	9:30:31.0	0.01
16	9:30:37.5	0.01
17	9:30:44.0	0.01
18	9:30:50.5	0.01
19	9:30:57.0	0.01
20	9:31:03.5	0.01
21	9:31:10.0	0.01
22	9:31:16.5	0.01
23	9:32:23.0	0.00
24	9:32:29.5	0.01
25	9:32:36.0	0.00
26	9:32:42.5	0.01
27	9:32:49.0	0.01
28	9:32:55.5	0.01
29	9:33:02.0	0.01
30	9:33:08.5	0.01
31	9:33:15.0	0.01
32	9:34:21.5	0.01
33	9:34:28.0	0.01
34	9:34:34.5	0.00
35	9:34:41.0	0.01
36	9:34:47.5	0.01
37	9:34:54.0	0.01
38	9:35:00.5	0.01
39	9:35:07.0	0.01
40	9:35:13.5	0.01
41	9:36:20.0	0.01
42	9:36:26.5	0.01
43	9:36:33.0	0.01
44	9:36:39.5	0.01
45	9:36:46.0	0.01

WELL ID: MW09-3

Local ID: B09-28/MW09-3
Date: 7/21/2009
Time: 9:51

INPUT

Construction:

Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	5.25 Inch
Screen Length (L)	16 Feet

Depths to:

water level (DTW)	3.63 Feet
top of screen (TOS)	4 Feet
Base of Aquifer (DTB)	20 Feet

Annular Fill:

across screen -- Coarse Sand
above screen -- Bentonite

Aquifer Material -- Fine Sand

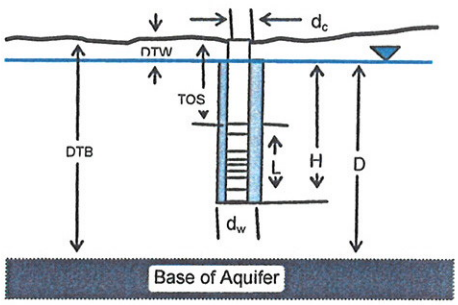
COMPUTED

L_{wetted}	14.37 Feet
D =	17.37 Feet
H =	14.37 Feet
L/r_w =	65.69
$y_{0\text{-DISPLACEMENT}}$ =	3.63 Feet
$y_{0\text{-SLUG}}$ =	1.59 Feet

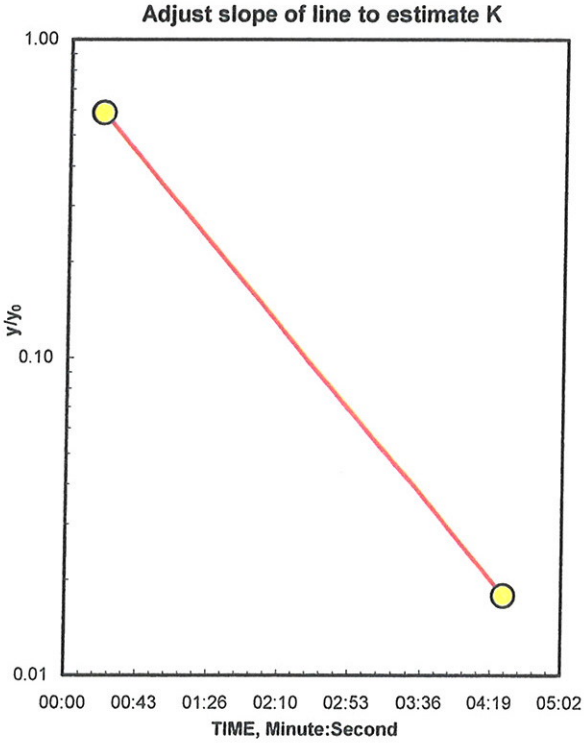
From look-up table using L/r_w

Partial penetrate A =	3.566
B =	0.578
ln(Re/rw) =	2.940
Re =	4.14 Feet
Slope =	0.006147 $\log_{10}$/sec
$t_{90\%}$ recovery =	163 sec

K = 0.867673 Feet/Day



Adjust slope of line to estimate K



Bouwer and Rice analysis of slug test, WRR 1976

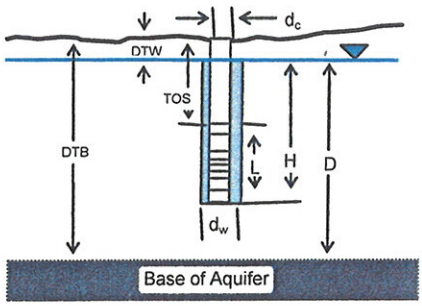
Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	9:51:00.0	0.00
2	9:51:06.5	-0.41
3	9:51:13.0	-0.48
4	9:51:19.5	-0.49
5	9:51:26.0	-0.50
6	9:51:32.5	-0.50
7	9:51:39.0	-0.50
8	9:51:45.5	-0.50
9	9:51:52.0	-0.50
10	9:52:58.5	-0.51
11	9:53:05.0	-0.50
12	9:53:11.5	-0.50
13	9:53:18.0	-0.50
14	9:53:24.5	-0.50
15	9:53:31.0	-0.50
16	9:53:37.5	-0.50
17	9:53:44.0	-0.50
18	9:53:50.5	-0.51
19	9:54:57.0	-0.50
20	9:55:03.5	-0.50
21	9:55:10.0	-0.50
22	9:55:16.5	-0.50
23	9:55:23.0	-0.50
24	9:55:29.5	-0.51
25	9:55:36.0	-0.50
26	9:55:42.5	-0.50
27	9:55:49.0	-0.50
28	9:56:55.5	-0.50
29	9:57:02.0	-0.50
30	9:57:08.5	-0.50
31	9:57:15.0	-0.50
32	9:57:21.5	-0.50
33	9:57:28.0	-0.50
34	9:57:34.5	-0.50
35	9:57:41.0	-0.50
36	9:57:47.5	-0.50
37	9:57:54.0	-0.51
38	9:59:00.5	-0.50
39	9:59:07.0	-0.50
40	9:59:13.5	-0.50
41	9:59:20.0	-0.51
42.	9:59:26.5	-0.51
43	9:59:33.0	-0.51
44	9:59:39.5	-0.51
45	9:59:46.0	-0.50

WELL ID: B08-2 MW-1

Local ID: B08-2/MW-1
Date: 7/21/2009
Time: =

INPUT

Construction:	
Casing dia. (d_c)	2 Inch
Annulus dia. (d_w)	5.25 Inch
Screen Length (L)	10 Feet
Depths to:	
water level (DTW)	9.27 Feet
top of screen (TOS)	13 Feet
Base of Aquifer (DTB)	23 Feet
Annular Fill:	
across screen --	Coarse Sand
above screen --	Bentonite
Aquifer Material --	Fine Sand



COMPUTED

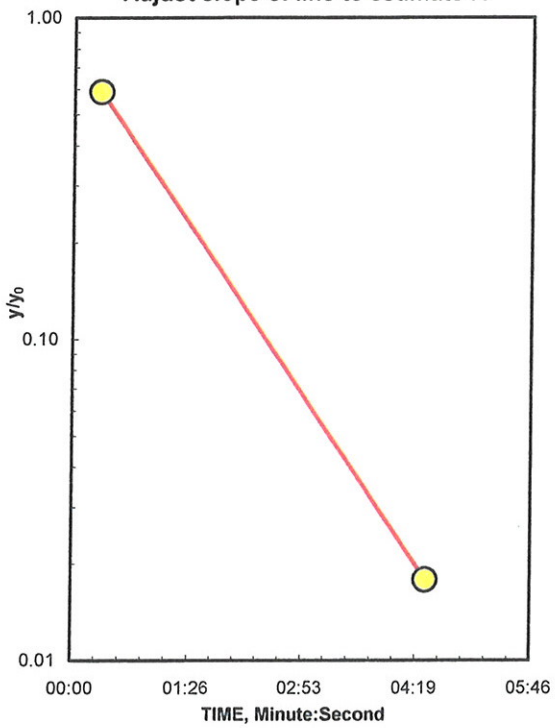
L_{wetted}	10 Feet
D =	13.73 Feet
H =	13.73 Feet
L/r_w =	45.71
$y_{0\text{-DISPLACEMENT}}$ =	1.33 Feet
$y_{0\text{-SLUG}}$ =	1.59 Feet

From look-up table using L/r_w

Fully penetrate C =	2.623
ln(Re/rw) =	3.095
Re =	4.83 Feet
Slope =	0.006147 $\log_{10}$/sec
$t_{90\%}$ recovery =	163 sec

K = 1.312746 Feet/Day

Adjust slope of line to estimate K



Bouwer and Rice analysis of slug test, WRR 1976

Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	0:00:00.0	0.00
2	0:00:07.0	-0.24
3	0:00:14.0	-0.43
4	0:00:21.0	-0.59
5	0:00:28.0	-0.71
6	0:00:35.0	-0.83
7	0:00:42.0	-0.93
8	0:00:49.0	-0.99
9	0:00:56.0	-1.05
10	0:01:03.0	-1.10
11	0:01:10.0	-1.14
12	0:01:17.0	-1.17
13	0:01:24.0	-1.20
14	0:01:31.0	-1.22
15	0:01:38.0	-1.24
16	0:01:45.0	-1.26
17	0:01:52.0	-1.27
18	0:01:59.0	-1.28
19	0:02:06.0	-1.28
20	0:02:13.0	-1.30
21	0:02:20.0	-1.31
22	0:02:27.0	-1.31
23	0:02:34.0	-1.31
24	0:02:41.0	-1.31
25	0:02:48.0	-1.32
26	0:02:55.0	-1.32
27	0:03:02.0	-1.32
28	0:03:09.0	-1.32
29	0:03:16.0	-1.32
30	0:03:23.0	-1.32
31	0:03:30.0	-1.32
32	0:03:37.0	-1.33
33	0:03:44.0	-1.32
34	0:03:51.0	-1.33
35	0:03:58.0	-1.33
36	0:04:05.0	-1.33
37	0:04:12.0	-1.33
38	0:04:19.0	-1.33
39	0:04:26.0	-1.33
40	0:04:33.0	-1.34
41	0:04:40.0	-1.33
42	0:04:47.0	-1.33
43	0:04:54.0	-1.33

Exhibit 2

Electronic Laboratory Analytical Data Report