LABELLA Associates, P.C.

Engineering
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Planning

Guidance for Waste-fill Management During Site Development on the Former Emerson Street Landfill

Location:

Former Emerson Street Landfill
Lexington Ave
Rochester, New York

Prepared For:

City of Rochester
Division of Environmental Quality
Rochester, New York 14614

LaBella Project No. 210173

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1.0 Introduction

This document provides guidance for property owners, contractors, developers or other parties who intend to disturb sub-surface materials at properties within the footprint of the Former Emerson Street Landfill (FESL). The FESL parcels consist of approximately 255-acres of land in the City of Rochester, Monroe County, New York (City) and are depicted on Figure 1. This guidance document was developed by LaBella Associates, P.C. (LaBella), on behalf of the City of Rochester's Division of Environmental Quality (DEQ), to update the document titled "Guidance for Waste-fill Management During Site Development" dated July 1995 by Haley and Aldrich (H&A) of New York and Revised July 1997 by the City. These updates reflect information obtained since 1997 on the FESL (historic and subsurface data) and changes in the Regulatory Guidance (most notably NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation).

As an institutional control (IC), the City has "flagged" each property located on the FESL on the City's computerized Building Information System (BIS) with a red flag that notifies City staff and the permit applicant that the flagged parcel requires additional environmental review by City DEQ. This requires that environmental conditions are evaluated and addressed prior to issuing new permits or site plan approvals for any work that has the potential to disturb FESL waste fill. This process ensures that the proposed permit activities do not result in disturbances to the existing monitoring wells or other environmental monitoring points, or disturb existing soil vapor mitigation systems. In addition, the flagging system allows the City to work with the permit applicant to develop plans to properly manage any regulated waste or waste-fill materials that may be generated as a result of the permit activities. This flagging process also allows the City to require:

1) Referral of the proposed permit or site plan to the NYSDEC Region 8 for review, comments and approvals;

2) Implementation of a site-specific health and safety plan and/or environmental management plan for the specific proposed scope of work;

3) Installation of new engineering controls such as soil vapor intrusion mitigation systems, and

4) Modifications to environmental monitoring points or existing soil vapor intrusion mitigation systems.

1.1 Background

1.1.1 History Overview

The FESL was operated by the City from about the early 1940's to 1971 as a landfill. The landfill was used to dispose of ash derived from the incineration of municipal waste at the City's incinerators. Although a majority of the material placed is ash fill, construction and demolition debris was also placed into the landfill in some areas. In addition, partially incinerated materials and direct burial were documented in the later years of operation as noted below. Landfilling began south of Emerson Street and gradually expanded northward and eastward to include areas between Emerson Street and Lexington Avenue and east of Colfax Street and south of Emerson Street and generally west of McCrackanville Street. Fires due to incomplete incineration and open burning of refuse reportedly occurred in the late 1960s and early 1970s due to operational problems with the incinerators. Fill during this time frame was reportedly being placed north of

Emerson Street. In May of 1971 the City's incinerators were shut down; however un-incinerated municipal refuse continued to be placed north of Emerson Street until August of 1971. In August 1971, refuse disposal was ceased at FESL and disposal shifted to a different county landfill. In 1971 the landfill was officially closed and a contract for the closure of the eastern half of the landfill specified two feet of cover material (preferred to be a sandy loam) to be placed and compacted to 30% in one foot lifts. In September 1971, a contract was awarded for the closure of the western portion of the landfill. Since closure, portions of the Site have been developed by various private parties. As of the date of this report, the landfill consists of forty-five (45) individual parcels of land, which are shown on Figure 2. Figure 3 provides the approximate FESL fill limits associated with the time frames of deposition.

A portion of the FESL, (four parcels), are listed as a NYSDEC Class 3 Inactive Hazardous Waste Disposal Site (IHWDS), Site #828023, while the remaining parcels within the FESL have been de-listed. The four (4) parcels listed as IHWDS are identified on Figure 2. A "3" classification indicates a site "at which hazardous waste does not presently constitute a threat to the environment".

1.1.2 FESL Documented Fill Materials

The general types of wastes encountered during investigations, remediation and development projects over the past 35 years at the FESL site include the following:

- Municipal Incinerator Ash – Generally consisting of ash, cinders, charred refuse, glass and metal slag. Most ash observed during site investigations appears to be fly ash and bottom ash (clinker) from the municipal solid waste incinerators.
- Construction and Demolition Debris – Construction and demolition debris observed in past investigations generally fits the definition of construction demolition debris contained in NYSDEC's Part 360 and is considered regulated solid waste. Construction demolition debris fill is common in areas adjacent to current and former roadways onsite and particularly in the lobe of fill south of Emerson Street and east of Colfax Street.
- Soil and Municipal Refuse - This regulated solid waste generally consists of silty sand cover material and Regulated Solid Waste (un-incinerated municipal refuse).

It should be noted that one discrete location of low-activity radioactive waste was identified on the FESL. This material generally consisted of a sludge-like waste material associated with glass lenses. The sludge was found to contain low levels of radioactive thorium. This material was encountered in a relatively small area in the southwest portion of the FESL and was not associated with incinerator ash and refuse fills. The material appears to have been associated with surficial dumping which occurred after the FESL closure. Figure 4 depicts a radiological survey performed by Recra Environmental, Inc in 1988, which identified the areas of radioactive waste. This material was removed by Sevenson Environmental Services on behalf of the City (see Figure 4). Radioactive waste has not been identified elsewhere on the FESL.

The majority of the existing landfill has a soil cover. Cover ranges in thickness from 0 ft. up to approximately 6 ft. Cover materials generally consist of topsoil with grass, gravel, asphalt, or glacial till-derived sandy silt.

1.1.3 Summary of Significant Previous Environmental Reports

Numerous subsurface geotechnical and environmental investigations have been conducted at the FESL since its closure in 1971 and as recently as 2013. A list of reports available currently is included as Appendix 1.

Reports include document reviews, groundwater evaluations and sub-surface investigations and have been performed to characterize the type, nature, extent, and impact resulting from waste contained in the FESL. Figure 5 depicts the cumulative subsurface investigation points within the FESL as well as a model interpretation of fill thickness. It should be noted that additional private testing has also been completed but this information is not included herein. The approximate limits of FESL fill materials based on the previous studies and aerial photograph interpretations are shown on Figure 3. Studies completed after 1990 were completed solely by the City. A summary of the information obtained during these studies is presented in Section 2 on a location basis; below is a brief summary of the significant reports:

- A Soil Vapor Intrusion Assessment Report (SVI Report) by LaBella on behalf of the City dated June 2011. This report includes a comprehensive review of previous testing completed at the FESL. Although the intent of this report was to evaluate SVI, a detailed review of landfill history was completed for a comprehensive analysis. The landfill review included a review of historic documents (maps, reports, letters, memos, etc.), investigation data, landfilling operations (filling locations, dates, material, etc.) and development projects. This SVI Report work also included advancing additional soil borings, installing monitoring wells and sampling soil and groundwater at the FESL.

- Former Emerson Street Landfill Remedial Investigation Report by LaBella/Geomatrix dated April 2001 on behalf of the City – This report includes a remedial investigation study of three (3) specific parcels on the FESL with the purpose of characterizing environmental conditions, assessing the potential human health risks and evaluating remedial alternatives. Field investigations performed during this report included surface soil samples, a subsurface vapor assessment and a subsurface soil and water assessment. Analytical results confirmed and further delineated the presence of chlorinated volatile organic compounds (CVOCs) in the IHWDS portion of the landfill.

  Specifically, the groundwater CVOC plume (P-1 Plume) was partially delineated during work conducted for this report. The P-1 Plume may be attributable to the FESL or potentially due to post landfilling operations. The plume is contained within the FESL and predominantly located at the 1655 Lexington Avenue parcel. The P-1 Plume area is generally defined and significantly influenced by the storm sewer system that runs through McCrackanville Street, west down Emerson Street and then south parallel to (but west of) 'W' Street and eventually to an outfall into the Barge Canal. Analytical results have indicated a significant reduction in CVOC concentrations beyond the location of the storm sewer on both the southerly and easterly directions.

- Former Emerson Street Landfill Modified Remedial Investigation by H&A of New York dated January 1994 – Work associated with this report included the provision of historic data to the NYSDEC, a request to delist specific properties from the NYSDEC IHWDS and an extensive field investigation. The field investigation work included the advancement of soil borings, monitoring wells, landfill gas sampling, gas emission monitoring in and around buildings/structures, sampling of stormwater, sampling groundwater and performing hydrogeological testing. In support of the field investigation activities; a photogrammetric survey, fill history evaluation, and an evaluation of existing utilities and cover material were also conducted.

The above reports provide the most information on subsurface conditions at the FESL; however, additional reports exist (refer to Appendix 1) and private investigations may also exist for individual parties. The inferred extent of the CVOC plume discussed above is shown on Figure 6.

1.2 Objective and NYSDEC Part 360

Due to the environmental history of the property, any waste-fill generated during site disturbances requires special consideration and management. The NYSDEC regulations regarding management of solid waste can be found in 6 NYCRR Part 360. Part 360 contains a provision that allows for non-hazardous solid waste to be properly managed and replaced within the confines of an inactive solid waste landfill with NYSDEC approval (see Part 360-1.7(b)(9)). Proper management requires that care be taken in planning, monitoring and testing excavated waste-fill material to confirm non-hazardous nature of the excavated materials and allow proper replacement and covering onsite (within the confines of the landfill).

The objective of this document is to provide guidance on any subsurface management of soil, fill materials, and water that will be disturbed during activities at the FESL.

2.0 Supporting Analytical Data/Site Characterization

This Plan utilizes existing analytical data for the FESL in order to develop management practices for fill and soil encountered during excavations within the FESL boundaries. As noted above, fill materials at the FESL have been studied through extensive subsurface evaluations which have included: soil borings, test pits and groundwater monitoring wells. Appendix 2 contains a summary table of all the sub-surface investigations conducted on the FESL as well as the investigation logs. Specific data relating to the Site is summarized below:

FESL Fill Materials and Soil Gas:

Previous investigations have characterized the landfill based on numerous soil borings, test pits and groundwater monitoring wells. The Soil Vapor Intrusion Assessment Report prepared by LaBella on behalf of the City, June 2011 included a comprehensive review of all the subsurface investigation work at the FESL. This review resulted in categorizing the FESL subsurface into four distinct quadrants, which are described below and are shown on Figure 3.

Quadrant A (North of Emerson Street, West of Colfax Street):

Quadrant A is characterized by the presence of both insufficiently incinerated highly putrescible waste, and illegally disposed chemical waste, resulting in the presence of anthropogenic methane gas due to the decomposition of putrescible materials, as well as CVOC contamination in soil vapor and groundwater. Methane flux was measured at levels ranging from 33 to 1,200 ug/ m^2-min, and/ or soil gas methane concentrations were recorded above 5,000 parts per million (ppm). Modeled groundwater CVOC contamination contours are depicted on Figure 6. Soil vapor CVOC contours are depicted on Figure 7. The fill material in this area ranges in thickness from no fill material observed in the western portion of the quadrant to approximately 23-ft. thick in the central portion of the quadrant. Fill thickness contours are depicted on Figure 5. The cover thickness in this quadrant ranges from less than 1-ft. in the northeastern portion of the quadrant to greater than 3-ft. in the central portion of the quadrant. Underlying the cover material, the fill consists of putrescible waste (wood, paper, misc. refuse,), metal, plastic, rubber, brick, glass and some ash in the central and northern portions of the quadrant and predominantly ash in the southern portion of the quadrant in proximity to Emerson Street. These findings are consistent with the historic information reviewed. Some locations within this quadrant were noted to have fill material placed directly on top of bedrock, which would indicate portions of the quadrant were excavated prior to filling. Some testing

locations indicated apparent native material beneath the fill materials and overlying the bedrock. This native material included in some locations silt and peat deposits which would be consistent with a marsh/swamp area. Locations without fill materials are generally located in the western portion of the quadrant and consist of native silts and sands.

This quadrant was generally the last to be filled, Figure 3, and as such the fill material varies from fully combusted ash material in the southeastern corner to partially incinerated or direct burial of un-incinerated or putrescible solid waste in the central portions. The western portion of this quadrant was generally not filled and the 500 Lee Road parcel underwent a fill relocation project during construction; as such, fill materials are not located beneath the main building or power house building. Additionally, the 1770 Emerson Street parcel underwent a fill relocation project during construction of a new building from 2010 to 2011; as such, fill material is not located beneath this new structure. The central portion of Quadrant A contains the CVOC plume depicted in Figure 6 and designated as the "P-1 plume". This plume is likely due to either 1) direct disposal of waste solvents sometime around the closing of the landfill (1971); 2) post-landfill dumping; or 3) fire training operations by GM, at which time the property was owned by the State of New York. Additionally, the presence of methane due to the FESL was recorded on field meter at concentrations within the explosive range; however, laboratory analysis has indicated that the field meters overestimated the methane concentrations (refer to Section 4.1 for more information of the limitations of methane gas meters). According to analytical laboratory results, the methane concentrations were just below the lower explosive limit (LEL). In addition to the methane gas, CVOCs have been documented in soil gas in the central portion of this quadrant.

Quadrant B (North of Emerson Street, East of Colfax Street):

Quadrant B was active as a landfill during the periods of high and low incinerator efficiency, resulting in areas consisting of well incinerated ash fill material, putrescible waste, and methane. Investigations in the northern portion of Quadrant B, within the Edison Tech parcel, revealed only sparse amounts of un-incinerated material. Methane flux readings in this quadrant ranged from 15 to 140 ug/ m^2-min. An apparent discrete CVOC plume is also present in this quadrant (i.e., separate from the P-1 plume in Quadrant A); see Figure 6. This plume appears limited in extent, generally within the 535 Colfax Street parcel and is believed to be related to post-landfill operations. CVOCs in soil gas were not extensively studied within this quadrant.

The impacted CVOCs in groundwater within the southeastern portion of this quadrant may be due to post-landfill operations. The City was not accepting liquid waste, at least for direct burial, beginning at least as early as July 1969. Incineration of solvents, even when incomplete, would likely provide complete combustion. Furthermore, this area was developed in 1985 as a metal fabrication facility which could have used chlorinated solvents. Concentrations of CVOCs in this area have been found to increase over time.

The fill material thickness in this area ranges from no fill material in the northeast portion of the quadrant to 22.5-feet thick in the western-central portion of the quadrant (Figure 5). The cover thickness in this quadrant ranged from less than 6-inches to up to 2-feet thick. Underlying the cover material, the fill consists of ash, putrescible waste (wood, paper, and misc. refuse), metal, plastic, rubber, brick, glass, etc. in the central and northern portions of the quadrant and predominantly ash with some putrescible waste in the southern portion of the quadrant. Fill material in some locations was noted to be directly on top of bedrock, while other locations indicated apparent native material between the fill and bedrock. Native organic materials (peat) were noted in several borings overlying the bedrock. In locations without fill materials (generally the western portion of the quadrant), the native material consisted of silts and sands.

This quadrant began to be filled sometime around 1960 and until 1970 (Figure 3). Based on a review of contract documents and a 1971 aerial photograph, it appears that a majority of this quadrant was covered and seeded in 1970. Few soil gas points have been installed in this quadrant, and thus methane in soil gas is not well characterized; however, the available data shows significantly lower concentrations in soil gas than in the central portion of Quadrant A. The fill materials in this quadrant consist of ash material in the southern portion and some partially incinerated or direct burial/ putrescible waste in the central -northern portions. The thickness of fill material ranges from no fill to greater than 20 feet in the western central portion of the quadrant. The 655 Colfax Street building (Edison Tech) contains a basement constructed directly on top of bedrock and thus a complete removal of fill material was completed for the northern and southern portions of the main building (see Site Specific Investigation for more information regarding 655 Colfax Street). Partial removal of fill material has also occurred at the 655 Colfax Street parcel. During construction, most of the site was excavated to bedrock and filled with reworked material including a mixture of clean fill and historic landfill material. Additionally, the 1560 Emerson Street building has undergone two additions, both of which received partial fill removals at that time.

Quadrant C (South of Emerson Street, West of Colfax Street):

Quadrant C was landfilled during the years of maximum incinerator efficiency, resulting in the lowest methane detections of the FESL quadrants.

Based on aerial photography it appears this quadrant began to be filled in the 1940s in the southeastern corner and expanded north and west until about 1961 when landfilling likely ceased in this quadrant. The fill materials generally consist of ash materials; however, some paper and wood were noted in select testing locations. Portions of this quadrant were also noted to have fill material placed directly on top of bedrock and in other locations to contain marsh deposits between the fill material and bedrock. Soil gas testing in this quadrant is limited; however, the testing completed did not indicate significant landfill gas flux readings. Four fill material removal actions have occurred in this quadrant during redevelopment work; specifically, all fill material beneath the 55 Vanguard Parkway building was removed during construction and all fill material encountered on the 105 Vanguard Parkway was removed during site development. Partial removals of fill occurred at 1667 Emerson Street during a parking lot expansion project and at 1555 Emerson Street during a development project. Additionally, a small removal was conducted to address radiological contamination; the general location of the fill removed and the extent of a 1988 radiological survey are included on Figure 4. Fill thickness and areas of partial removal are included on Figure 5.

Methane flux readings in Quadrant C were nearly identical to the control sample, at 33 to 35 ug/ m^2-min; however, only two soil gas sampling locations were located within this quadrant. In addition, the presence of organic, rich, marsh-derived soils at depths in this quadrant could also be a natural source of methane.

CVOCs are present in groundwater in the north-central portion of Quadrant C, immediately south of Emerson Street to a limited extent and east of Vanguard Parkway (Figure 6). It is possible that this plume is related to the P-1 plume in Quadrant A, from an entirely different source, or a combination of both. The groundwater contamination present along Emerson Street likely stems from the P-1 plume, while the shallow soil contamination further to the south may be derived from its own source.

The fill material in this area ranges from no fill material in the western portion of the quadrant to 11.2-feet thick in the central and north-central portion of the quadrant. The cover thickness in this quadrant ranged from no cover to up to 3-feet thick. Underlying the cover material, the fill consists predominantly of ash material with some slag and cinders. It should be noted that some borings

indicated lesser (trace) amounts of paper or wood; however, these were not the predominant material. Some locations within this quadrant were noted to contain fill material directly overlying bedrock, while others contained native materials between the fill and bedrock. The native materials included apparent marsh deposits (clayey silt with organics) in some locations up to 5-feet thick.

Quadrant D (South of Emerson Street, East of Colfax Street):

Quadrant D received material from the Smith Street incinerator prior to the 1954 construction of the on-site incinerator (Figure 3). Native marsh soils are present in this quadrant and likely account for methane flux readings of up to 190 ug/ m^2-min in the central portion of the quadrant. A small plume of CVOCs was detected along Colfax Street (Figure 6), but this plume has been determined to have been caused by industrial site operations subsequent to the closure and re-development of the FESL.

The fill material in this area ranges from no fill material in the eastern and portions of the northern section of the quadrant to 11.5-feet thick in the central portion of the quadrant (Figure 5). The cover thickness in this quadrant ranged from approximately 6-inches to 3-feet thick. Underlying the cover material, the fill consists predominantly of ash with some cinders, slag and glass noted. In addition, some wood and charred paper was noted in select borings. Some locations within this quadrant were noted to have fill material overlying bedrock, while other locations noted apparent native material between the fill material and bedrock. The native material in some locations included apparent marsh deposits (clayey silt with organics) in some locations up to 6.8-feet thick.

Groundwater:

Groundwater has been investigated at the FESL site beginning in approximately 1988. Previous investigations have documented groundwater conditions across most of the site, on both a site-wide and parcel-specific scale. These investigations have resulted in the installation and sampling of a total of 53 wells at the Site. This includes 45 shallow bedrock (or overburden/ bedrock interface) and 8 deep bedrock wells. During the subsequent years, several of the historic monitoring wells were damaged, lost or otherwise rendered unusable, some due to development and new construction. As part of a 2010 investigation, an inventory and assessment of all existing wells on the site was performed. The resulting inventory indicates that a total of 47 monitoring wells were still present on the site and in a serviceable condition.

The 2010 investigation also included the sampling of 29 of these monitoring wells and analysis for VOCs, using USEPA Method 8260B. Appendix 3 provides a summary of the 2010 groundwater analytical results. Twenty of the twenty nine recently-sampled wells contained VOCs at levels at or above the method detection limit (MDL); nine wells showed no detectable VOC presence. Of the twenty wells with VOCs detected, eleven did not contain VOCs at concentrations in excess of the NYSDEC's Part 703 Drinking Water Standards. The remaining nine wells contained one or more VOCs at a concentration that exceeded the standards. Seven of these nine wells exhibiting exceedances were located on or in close proximity to the IHWD site, and are related to the previously-identified VOC plume. The remaining two wells (GW-7R and GW-9) are located on Colfax Street and appear to represent sources of VOCs separate from the IHWD site.

The following is a summary of significant findings from these previous investigations:

- The groundwater flow system at the Site is comprised of two hydro-stratigraphic units, an Upper Water Bearing Zone (UWBZ) and Intermediate Water Bearing Zone (IWBZ). Both

zones are located in bedrock.

- Water levels typically reside in the rock but occasionally exist in the lower portions of the overburden/ fill.

- Groundwater in the UWBZ is influenced by large diameter storm sewers running north-south along the eastern edge of McCrackanville Street and east-west within Emerson Street. These storm sewers were reportedly installed in blasted bedrock. All storm sewer inverts appear to be below bedrock in McCrackanville and Emerson Streets. Invert elevations of these sewers correspond closely to groundwater elevations. The table below illustrates the approximate bedrock elevation, and groundwater elevation for select wells and the nearest invert elevation available from Monroe County mapping.

Well	Bedrock Elevation	Groundwater Elevation	Nearest Sewer Invert Elevation
GMX-MW-3	525.39’	519.86’	517.08’ (90 feet Southeast)
GMX-MW-6S	524.26’	516.51’	515.93’ (150 feet East)
LAB-106	531.16’	514.06’	514.33’ (90 feet North/Northeast)

Note: All elevations are NGVD 29.

As shown in the table above, the bedrock elevations range between about 6 and 16 feet above the groundwater elevation and about 8 and 17 feet above the elevation of the sewer inverts. The groundwater levels range between about 2.8 feet above the sewer inverts to about 0.3 feet below the sewer invert. Although the invert elevations are 90-feet or more away from the wells, this indicates that the sewers in McCrackanville and Emerson Street are likely at least 6 feet below the top of bedrock and appear to extend deeper into rock down Emerson Street and the portions west of W Street. Additionally, the groundwater levels correlate closely with the invert elevations, which indicate that groundwater is influenced by the fracture network in the bedrock in close proximity to the storm sewers which provide a preferential pathway for groundwater and thus a flow zone.

- A CVOC plume in groundwater is located on the City-owned parcel at 1655 Lexington Avenue (Quadrant A), which comprises approximately 60% of the approximate 24 acre NYSDEC-listed IHWD Site. Given that total CVOCs in Monitoring Well P-1, located in the apparent source area of the plume, have historically been as high as approximately 54 ppm, dense non-aqueous phase liquid (DNAPL) may be present based upon the > 1% solubility for CVOCs per DER-10.

- The most recent sampling event (July 2010) showed a decrease in CVOC concentrations to 34,007 parts per billion (ppb), which is a decrease of 37 percent from the previous event. Relatively low levels (19.2 ppb) of petroleum-related VOCs (benzene, toluene, ethylbenzene and xylene, or BTEX) were also detected in the 2010 event.

- The CVOC plume extends generally toward the east and south from well P-1. Interference of the impacted groundwater by the storm sewers located along the east and south limits of the IHWDS appears to have limited the extent of the plume. Some extension of the plume has occurred to the south and east beyond the storm sewers in Emerson Street and McCrackanville Street; however, the extent is limited and CVOC concentrations were significantly lower in wells on the opposing side of these sewers (Figure 6).

- CVOCs at significantly lower concentrations than the IHWDS area described above have been identified in other areas of the FESL. These occurrences appear to be limited in lateral extent and may be the result of post-landfill site uses (Figure 6).

3.0 Development and Pre-Excavation Planning

Projects planned within the FESL boundaries should be evaluated to determine their location with respect to the location of fill material. If the proposed development is located outside of the footprint of the waste-fill area as shown on Figure 5, fill materials derived from FESL operations are unlikely to be encountered and; therefore, would not be subject to the guidance described in this document. However, proposed development locations located near the edge or within the footprint of the waste-fill area are subject to this guidance. In this case, a thorough review of previous investigations to evaluate information pertinent to the intended project location should be conducted. A list of previous investigations is presented in Appendix 1; additionally, all of the available boring logs from previous investigation are located in Appendix 2.

A geophysical survey, using ground penetrating radar, may also be used prior to invasive work to help identify subsurface features; however, due to the nature of historic fill material and the results of previous surveys it appears that geophysical surveys do not contribute much value to subsurface evaluations.

4.0 Pre-Construction Sampling

A site specific pre-construction investigation following NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, May 2010 guidelines (DER-10) is recommended to characterize the type of material that is expected to be excavated during construction activities. This type of investigation can fill site specific data gaps. Waste-fill materials may vary considerably from one location to the next over relatively short distances; as such, site specific investigations can provide valuable information and allow proper preparation. The overall objective of such characterization is to obtain, observe, and analyze samples that are representative of the waste-fill that will be excavated during construction. This section contains guidance on sampling methods, sample frequency, and laboratory analysis that may be used to characterize waste-fill.

Prior to initiating a pre-characterization sampling event, a plan for such work should be developed. The plan should include at a minimum the following:

- Summary of Development – Include details on areas of excavation, depths, volume of material to be excavated/ disturbed and anticipated volumes of spoils generated.
- Proposed Field Screening – This should include meters and personnel qualifications.
- Proposed Sampling – Include basis for locations and number of samples based on the above. Also include proposed laboratory.

4.1 Investigation and Sampling

Conventional subsurface exploration methods consisting of test pits, test borings, or other methods may be used for sampling waste-fill materials. Overall, the intent of such explorations is to view materials that may be excavated during construction for observable signs of contamination. Such signs typically include:

- Staining

- Odors
- Gases, fumes or vapors detected by monitoring instruments
- Observable Sheens

Field Meters

In addition to the observable signs indicated above the following instruments should be used for screening during the investigation:

- Photoionization detector instruments (PID) - These instruments operate by drawing a sample of ambient air or gas into a chamber where the gas is ionized using a light source of a specific energy (either 10.2 or 11.7 eV). The intensity of ionization energy is then measured and converted to a signal and a scale reading in parts-per-million (ppm) of total volatile organics concentration. It should be noted the ionization potentials of measureable constituents varies and the PID lamp utilized may need to be evaluated to ensure accurate results.

- Radiation Meter – These portable survey instruments can detect alpha, beta, and/or gamma radiation, and display the radiation level over a specified time period (e.g., counts per minute, milli-Roentgens per hour, etc.). A scintillation probe, radiation ion chamber, or GM probe is typically used to detect the radiation. Each meter detects different forms of ionizing radiation with different levels of efficiencies. Geiger Muellen (GM) meters are often used as survey meter to detect gamma radiation and would be an appropriate instrument to use at this site (i.e., Ludlum Meter).

- Landfill Gas Meter – the gas meter utilized should be capable of detecting the following; carbon dioxide, carbon monoxide, methane, and hydrogen sulfide. The capabilities of the gas meter utilized should be identified prior to usage. Interference of the gas meter may occur from the detection of non-target gases. Such interferences can significantly impact the meter readings and may be biased high for methane concentrations and not representative of the actual vapor concentrations. If warranted, analytical testing may be necessary to determine actual concentrations.

These instruments are generally available in the Rochester, NY area and can be rented from several sources. They should; however, only be operated by individuals trained and experienced in their use, limitations, and capabilities for data generation. The observations and sample collection described above should be documented on test pit logs, test boring logs, or other field notes by a qualified environmental professional.

Laboratory Testing

The investigation explorations may be used to gather samples that can be used for laboratory analysis waste characterization. Sampling should obtain a sufficient number of samples to be representative of the total mass of material that is expected to be excavated during construction. Sample collection should incorporate the results of onsite monitoring equipment. If laboratory analysis demonstrates that the samples are non-hazardous, then the material excavated can be managed within the FESL boundaries.

All samples should be collected in accordance with DER-10 unless the fill has been previously sampled. Per DER-10 Section 3.11, a minimum of four (4) samples per acre should be collected to characterize historic fill materials and if different types of historic fill material are encountered (e.g. ash, construction debris, etc.) each type of material must be sampled.

Soil samples should be sent under standard chain-of-custody procedures to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory (or appropriate certification at the time of work).

In addition to the general sampling indicated above, targeted investigation and sampling should be considered in order to generate samples that are representative of the overall waste-fill mass to be excavated. Specifically, regular sampling along foundation elements and utility cuts is recommended. The developer and/or design engineer is cautioned that test pit or test trench type explorations should be limited only to the depth and extent of anticipated construction excavation. Such excavation should not be advanced to depths greater than anticipated construction excavation depths. The appropriate geotechnical investigations should be conducted to ensure the sub-surface material can provide adequate support.

The designer/ developer is cautioned that information derived from grab and composite samples may be limited as a result of the method of sampling. Grab samples are representative of a single location and conditions at that location may vary from similar-appearing material located nearby the sample location. Composite samples tend to average conditions from the locations that the composite represents and; therefore, may result in laboratory analytical results that dilute elevated contaminant concentrations or obscure non-detect results. These limitations should be considered in developing a sample plan. Per DER-10 composite samples may not be used for those samples analyzed for volatile organic compounds. Additionally, composite samples are generally not acceptable in determining the nature of material (DER-10 Section 3.2(d)).

Variations to sampling methods dictated in DER-10 may be acceptable and should be described in a Sampling Method Plan.

4.2 Material Characterization Sample Analysis

The intent of pre-construction sample laboratory analysis is to characterize the material to be excavated. Previously gathered data, as well as the history of operation of the site should be used in collaboration with analytical results during characterization. The developer/designer should consider past site information and these factors in planning lab analyses. The following analysis should be considered for characterization:

- CP-51 SVOCs
- TCL VOCs
- RCRA Metals

In the event that excessive spoils are anticipated and disposal offsite appears necessary, disposal facility requirements for analysis should also be considered when sampling, particularly the requirements for non-hazardous and hazardous waste classifications (see Section 5.5).

5.0 Excavation Management

5.1 Management Plan

Previous investigations and laboratory analyses of the waste-fill material in the FESL have shown the majority of it to be non-hazardous solid waste. However, hazardous waste has also been encountered at discrete locations and in very limited quantities. Any waste material that is excavated during construction or site development must be properly managed; therefore, the development process can be greatly simplified by

planning to minimize excavation needed for construction and anticipating the waste-fill that will be handled during excavation and construction in a Management Plan.

A Site Specific Management Plan should be developed for each project and depending on project size should include the following in some level of detail:

1. Historic Information and Pre-Characterization Testing Data – This should include previous testing locations, depths, materials encountered and laboratory results.

2. Summary of Development Proposed – This should include proposed project summary, mapping with excavation areas and depths and estimates on volumes of material to be generated.

3. Comparison of Pre-Characterization Work in Relation to Development Work - This should identify methods of handling excavated materials which do not coincide with the site-specific pre-characterization. Materials which do not coincide with the pre-characterized material should be sampled and analyzed to determine the appropriate disposal or re-use measures.

4. Classification and Handling of Excavated Materials – This should include a description of the anticipate material, volumes and management onsite or disposal offsite. This should include both soil/fill and water.

5. Environmental Monitoring – This should define the monitoring to be completed, including specific meters, area to be monitored and anticipated frequency of monitoring.

6. Roles and Responsibilities – This should define entities/companies involved and the key contact people, responsibilities and contact information. At a minimum this should include:

    - Property Owner
    - City DEQ
    - Engineer/Architect
    - Environmental Monitor
    - Contractor

7. Community Air Monitoring Plan (CAMP) – This should include the NYSDOH Generic CAMP or a site specific CAMP.

8. Health and Safety Plan – Additional details on the components of such a plan are provided in Section 8.

5.2 Development Considerations

NYSDEC regulations under Part 360 (Part 360-1.7 (b) (9)) allow solid waste from non-hazardous inactive landfills, which is excavated as part of construction project, to be returned to the same excavation, or other excavations containing similar solid waste. Such materials may also be relocated within the landfill's existing footprint with the property owner’s approval, provided there is an acceptable location and the handling, relocation, and disposal practices are deemed acceptable to NYSDEC in writing and in advance of the project.

Hazardous waste that is generated as part of the excavation cannot be replaced on the site and must be properly characterized, managed, and disposed off-site at a permitted facility. The party responsible for generating the excavated material (developer or property owner) would be responsible for such characterization, management, and proper disposal. Accordingly, construction planning and development design that allows minimal site excavation means less material needs to be handled on-site (solid waste) or disposed off-site (hazardous waste).

Developers and design engineers for planned development should also consider that the following elements of construction may be affected by waste characterization and management:

- Construction De-Watering: Groundwater in some areas of the landfill has been found to contain chemicals at concentrations that warrant proper handling, management and disposal. Construction design and planning should consider existing data regarding groundwater quality and depths to allow for proper management of groundwater flow into excavations during construction, if de-watering is necessary for construction purposes. See Section 6 for further information regarding excavation dewatering.

- Waste Variability: Construction schedules should allow contingency time and measures to address potential unanticipated conditions.

- Basements: If possible, new structures with basements should not be constructed within the waste fill area. If basements are necessary, waste materials must be removed from beneath and adjacent to the basement structure. Basement structures should have adequate drainage to prevent the accumulation of groundwater, and they should be adequately ventilated to prevent the accumulation of landfill gases and/or volatile organic compounds.

- Schedules: Scheduling of construction will need to allow for potential sampling, monitoring, and management of waste-fill material that is excavated during the course of construction. Sampling, in particular, may lead to laboratory analysis. Analytical results typically take from several days to several weeks to be generated. Therefore, design and construction schedules should allow for adequate sample analysis turn-around time.

Site development plans and designs should allow for placement of the waste-fill as backfill (if the material is deemed acceptable by a geotechnical engineer) and subsequent grading and covering of the material with soil and vegetation, or a structure (building, parking lot, etc.). The objective of placing cover over the solid waste material is to prevent routine contact with the waste. Therefore coverage should generally consist of approximately 18 inches (compacted) of clean soil cover and vegetation, or a substantial barriers consisting of concrete slab, the building slab, or asphalt cover. It also meets the minimum cover thickness criteria for ash monofills specified in NYSDEC's Part 360.

Material management planning should include a possible need to temporarily stockpile excavated solid or hazardous waste and measures to prevent its contamination of other materials. Stockpile locations should not be in the vicinity of storm sewers and drainage courses and downwind property boundaries. Stockpiles should be placed on impervious material (minimum 6-mil Poly sheeting) with perimeter berms. Stockpiles or exposed waste areas should be covered to prevent migration by wind-blown dust or storm water runoff until final placement and final cover is established. The cover must be maintained and monitored daily until the materials are placed back into the excavation or disposed of off-site.

If quantities of excavated material are too great to be incorporated in site grading, then placement off-site within the confines of the FESL footprint may be possible. Such placement, however, will require permission of the receiving property owner, NYSDEC, and possibly the City and Monroe County Department of Health. The proposed method of placement and cover material will need to be identified to the agencies. Therefore, wherever possible, site development should allow for replacement of excavated solid waste-fill back on the site to be developed.

5.3 Geotechnical Considerations

Typical structures constructed at the FESL site generally consist of slab-on-grade foundations or, for larger structural loads, spread footings, piers, or other foundation elements that provide greater bearing capacity and minimize waste fill disturbances. The extent and nature of fill at the site is a limiting factor on the types of structures which can be placed at the site and requires that careful consideration be given to foundation design of proposed structures so that adequate structural support is maintained. Therefore, developers and design engineers will need to carefully balance the extent and methods of subsurface excavation that will be necessary for foundation construction against the goal of minimizing the amount of waste-fill that needs to be excavated and properly managed during construction.

5.4 Screening and Sampling Procedures for Excavated Soil and Fill

Monitoring of waste-fill excavated during construction should be considered for the following reasons:

- To determine that the waste-fill actually excavated during construction is consistent with the characterization of fill developed prior to construction.
- To allow characterization of the non-hazardous or hazardous nature of solid waste excavated in the event that no pre-construction planning, sampling, or analysis was performed.
- To segregate materials based on impacts and avoid overpaying for disposal.
- Health and safety of onsite staff, and the community.

During excavation, soils should be screened intermittently and anytime the general conditions of the excavated materials change or as otherwise specified in the Management Plan. Screening will consist of visual and olfactory observations, supplemented by a photoionization detector, landfill gas meter (i.e. methane and hydrogen sulfide) and radiation meter. Any significant findings including staining, non-soil fill types, odors, elevated PID readings above background, gas meter or radiation readings two times above the background reading will be noted in the site log book, and the associated material will be segregated for management as described below. Additionally, a Community Air Monitoring Plan (CAMP) should be instituted during excavations. Details on screening and the responsibilities of the Environmental Monitor are provided in Section 7.1.

Sampling of excavated waste-fill materials during construction should be considered if either of the following conditions exists:

- No pre-construction planning or sampling was performed.

- If conditions during actual construction are significantly different than those observed during pre-construction investigations (pre-characterized material) or described in the approved management plan.

- Waste disposal characterization.

The recommended frequency of sampling during construction should follow the guidelines of DER-10, or as dictated in the NYSDEC approved Management Plan. Laboratory analysis of samples during the excavation phase can be used to determine whether the waste material excavated is hazardous or non-hazardous. By USEPA and NYSDEC regulation a generator of such waste is also allowed to make this determination using knowledge of the waste. Therefore, previously gathered data for an intended development site, as well as the history of operation of the site may be used to form knowledge of the waste.

5.5 Hazardous Waste Characterization

Generally the waste-fill material excavated at the FESL site will be considered to be non-hazardous solid waste provided laboratory analysis does not show it to be a "Characteristic Hazardous Waste". It is also possible that waste encountered in the fill such as a labeled drum may be a "Listed Hazardous Waste". The generator of the waste will need to use knowledge of the waste and how it was generated to determine if a listed waste is present. Please note that "Characteristically Hazardous" and "Listed Hazardous Waste" are both defined terms within USEPA and NYSDEC regulation.

Solid waste will be considered as hazardous if it exhibits a Hazardous Characteristic, namely, ignitability, corrosivity, reactivity, or toxicity. If Listed Waste is contained within the solid waste sample, the mixture may also be considered as hazardous waste. If it is determined that listed waste is present in the excavated soil, the NYSDEC's Technical Administration Guidance Memorandum No. 3028 of November 30, 1992, "Contained-In" Criteria for Environmental Media, provides guidance on how the listed waste may be managed.

Past analyses from the FESL site have generally identified waste as hazardous when they exhibit a hazardous waste characteristic by toxicity test (see below). In most cases, it should be possible to limit laboratory analyses for waste to be excavated during site development to the following parameters:

- Hazardous Waste Characteristics – ignitability, corrosivity, reactivity and toxicity.

- Hazardous Waste Characteristic of Toxicity – this analysis is performed by using the Toxicity Characteristic Leaching Procedure (TCLP)

- Volatile Organic Analysis

Disposal facility requirements for analysis should also be determined when sampling the excavated soil, particularly the requirements for non-hazardous waste landfills as these usually have the most stringent analytical requirements.

Because the majority of waste-fill within the FESL site consists of incinerator ash, waste analyses have not to date shown the characteristics of ignitability, corrosivity or reactivity to be present. Potential leachability of heavy metals has been the primary reason that a sample may be characterized as hazardous waste by the TCLP procedure. Therefore, it may be possible to limit TCLP analyses to metal constituents. If TCL VOC analysis indicated elevated levels then it would be appropriate to also include the VOC constituent portion of

the TCLP analyses. The developer/designer should consider past site information and these factors in planning lab analyses.

5.6 Non-FESL Related Areas of Concern

While the sub-surface material within the FESL footprint contains historic fill material, it should be noted that impacts from other non-landfill related sources may be present. Several industrial and manufacturing facilities operate or have operated within the FESL foot print. Many of these operations require the use and storage of solvents and petroleum products which are inherent with the potential for environmental impacts. Section 2 provides an overview of the extensive information available regarding the FESL site. Individual properties should be researched to determine the potential for post landfill issues

Consideration should be taken to identify impacts as non-FESL related when impacts are identified near potential onsite point sources or if the impacts are inconsistent with pre-characterization or previous site knowledge.

5.7 Classification and Handling of Excavated Soil and Fill

Excavated materials should be classified utilizing excavation monitoring, historic knowledge and pre-construction investigation data. Material classifications should be established considering the material re-use, disposal requirements and handling requirements. Materials classifications and the handling of each should be addressed in a site specific Management Plan.

Re-use options should be considered during the classification of fill materials anticipated for excavation. Solid waste excavated may be maintained and replaced on-site with similar materials (assuming non-hazardous), or otherwise within the footprint of the inactive landfill when covered appropriately. Specifically, excavated materials may be relocated to another parcel which lies within the FESL boundaries and properly covered.

The Table below provides an example of how site specific sub-surface materials may be pre-characterized. Management Plans should also include an expanded section on the management of each classified material.

Table 1 Example of Material Classifications and Management

Class of Material	Physical Description	Screening Parameter	Management

Class of Material	Physical Description	Screening Parameter	Management
Class 1 Material	Clean soil, clean fill materials, and visually identifiable non contaminated solid waste (e.g. Brick, concrete, rock – i.e., construction and demolition debris)	No Discernable Odor PID readings less than 50 ppm No ash/cinders/slag or other regulated waste	Staging on-site for subsequent reuse.
Class 2 Material	FESL Ash/Fill and smaller pieces of metal, plastic, wood, paper, etc.	Visibly identifiable as ash/cinders/slag or other regulated solid waste (grey color, characteristic appearance)	Staging on-site for subsequent reuse or off-site disposal as a regulated solid waste
Class 3 Material	Soil and Fills with Moderate Petroleum/Cl-VOC Impacts that may Exceed CP-51 Soil Cleanup Objectives	Moderate Petroleum Odor Moderate Staining PID Readings Greater than 50 PPM and less than 1000 PPM	Material should be analyzed per DER-10. Material could be reused on site if lab results below Part 375-6 criteria or otherwise sent off-site for disposal.
Class 4 Material	Solid waste Physically unacceptable for re-use (e.g. larger pieces of refuse, metal scrap, rail road ties)	May or may not contain evidence of Impairment or regulated waste	Off-site Disposal to be determined based on waste stream characterization.
Class 5 Material	Significantly impacted soils either solid waste impacted with Petroleum or Possibly solid waste impacted by other chemicals	Strong Petroleum or other odor Significant Staining or presence of free phase liquids PID Readings of 1000 PPM or greater Laboratory analysis required for characterization	Off-site Disposal to be determined based on waste stream characterization.
Class 6 Material	Radiation Contaminated Soil/Fill	Ludlum Radiation Meter readings 2x greater than background	Off-site Disposal at regulated facility

As indicated previously, it is possible that characteristic hazardous waste could be encountered during site development. If such waste is encountered and excavated, it will be the responsibility of the site developer or owner (as the generator of the hazardous waste) to properly handle this waste. Management of such hazardous waste will require characterization, management, and off-site disposal at an appropriate approved facility, consistent with NYSDEC and USEPA hazardous waste management regulations.

6.0 Management Plan for Excavation Derived Water

Groundwater and/or rainwater may enter excavations and require removal (dewatered) to facilitate construction activities will require proper handling, treatment, and disposal (i.e., small quantities of water that do not interfere with construction activities may not require removal). In the event that groundwater is encountered, the groundwater will be containerized, characterized and disposed of in accordance with applicable regulations. The following should be considered to manage excavation derived water:

- Adequate storage (frac tank) of excavation derived waters.
- The appropriate number and size of pumps to dewater the excavation.
- Best management practices to minimize sediments during pumping.
- Discharge, if applicable and under permit, to the Monroe County Pure Waters (MCPW) sanitary system. The excavation waters must be containerized, sampled and analyzed for parameters specified by MCPW.
- Onsite treatment (activated carbon, air stripping, etc.) if warranted to meet MCPW sewer use criteria.
- In the event that off-site transportation of impacted water is necessary, a valid 6 NYCRR Part 364 Waste Transporter Permit shall be required. All disposal documentation at an approved treatment storage and disposal facility should be provided to the City.

7.0 Environmental Monitoring

It is strongly recommended an Environmental Monitor, preferably one with previous experience with the FESL site, be assigned to projects disturbing the sub-surface material within the FESL boundaries on a full time basis during those activities which will result in subsurface disturbances. This will significantly reduce the potential for any improper management, transportation or disposal of materials.

7.1 Environmental Monitor Duties

The responsibilities of the Environmental Monitor should include the following:

- Working with the contractor to pre-determine offsite disposal locations.
- Preparation of waste stream profile(s) if offsite disposal of excavated material is anticipated.
- Work closely with the contractor to monitor excavations for evidence of environmental impairment, and/or the presence of regulated solid waste. Specifically, this monitoring will include use of a photo-ionization detector (PID), a radiation meter and a gas meter.
- Make all determinations with regard to the classification of materials as detailed in the site specific Management Plan.
- Direct the contractors as to the proper placement and covering materials at the site.
- Assist the contractors as to the proper staging, covering, characterizing, transporting and disposing of materials requiring off-site disposal.
- Sampling, analysis, and any additional waste stream profiling material sent off-site as required by the receiving part 360 landfill, or the NYSDEC.
- Implementation of a Health and Safety Plan (HASP) for personnel at the Site. All contractors are responsible for their own health and safety plans (Section 8).

- Implementation of the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan (CAMP) and Fugitive Dust and Particulate Monitoring Plan during all fill relocation/grading work where there is exposed fill materials. See Appendix 4 for generic plans.

7.2 Responsibilities of the Contractor

It is recommended that all contactors involved with subsurface work at FESL be made aware of the history and provided all available information regarding a site. In addition contactors should be aware of these additional requirements for subsurface work:

- Dust/particulate and VOC suppression (i.e., wetting excavations, equipment, etc.) may be necessary, as directed by the Environmental Monitor.

- Maintain stockpiled regulated materials that are staged onsite (i.e., covering with polyethylene sheeting).

- Decontamination of the contractors' equipment prior to removing it from the site.

8.0 Health and Safety Plan

Past investigations of the FESL site have shown that materials encountered during subsurface exploration or construction activities may require special care and monitoring. These include constituents in materials associated with the known FESL filling and undocumented direct burial of materials and potentially naturally occurring from bedrock at the site, and include:

- Volatile organic compounds - these include petroleum derived constituents as well as a limited number of chlorinated volatile organic compounds.

- Heavy metals from incinerator ash - a variety of heavy metals are present in detectable concentrations in the incinerator ash. Past analyses of incinerator ash have only shown lead to be present at concentrations that exceed TCLP toxicity limits. Health and safety planning should generally consider measures to prevent exposure to heavy metals through engineering controls (dust suppression) or use of personnel protective equipment, or other measures.

- Radioactivity - a radiation survey and subsequent sampling and laboratory analysis revealed the presence of a relatively small volume of low-activity radioactive waste material associated with glass lenses and refuse fills in the southwest portion of the FESL. Approximately 12 tons of the low-level radioactive waste material was excavated at 1645-1685 Emerson St. and disposed of off-site. Although unlikely, it is possible that other low-level radioactive materials could be encountered during construction. Health & safety planning should consider measures to monitor waste materials for radiation levels above background.

- Landfill derived gases - these may include methane, hydrogen sulfide, or carbon monoxide. Landfill gas sampling and characterization performed during previous investigations has not shown significant levels of these gases to be generated from the waste fill at the locations sampled. A brief description of the landfill gases identified in each Quadrant are presented below:

  Quadrant A (Northwest Portion of FESL):

Quadrants A is characterized by landfill gas flux measurements between 100 and 1200 µg/m^2-minute, and/or soil gas methane concentrations above 5,000 ppm. In addition, this quadrant has also been documented with chlorinated-VOC contamination in soil gas, soil, and groundwater.

Quadrant B (Northeast Portion of FESL):

Quadrants B is characterized by landfill gas flux measurements between 15 and 140 µg/m^2-minute. An apparent discrete CVOC plume is also present in this quadrant (i.e., separate from the P-1 plume in Quadrant A); however, this plume appears limited in extent and generally is within the 535 Colfax Street parcel. CVOCs in soil gas were not extensively studied within this quadrant.

Quadrant C (Southwest Portion of FESL):

Quadrant C is characterized by landfill gas flux measurements between 33 and 35 µg/m^2-minute; however, only two soil gas sampling locations were located within this quadrant. In addition, the presence of organic rich marsh-derived soils at depth in this quadrant could also be a source of methane.

Quadrant D (South of Emerson Street, West of Colfax Street):

Quadrant D is characterized by landfill gas flux measurements between 57 and 190 µg/m^2-minute. In addition, there is one apparent small area of Chlorinated-VOC contamination in this quadrant, which appears to be the result of post-landfill industrial activity rather than landfill operations.

Sub-surface gases may be present in other locations and they may be generated in greater concentrations from bedrock at the site (see below).

Naturally occurring substances that may require health and safety planning include the following:

- Bedrock derived gases - this includes primarily methane and hydrogen sulfide. The bedrock underlying the site contains pockets of naturally occurring methane which has been encountered in past borings at concentrations that may approach or exceed explosive limits. In addition, methane and hydrogen sulfide have the potential to collect in deep excavations. Both of these gases are defined as "simple asphyxiants" and therefore consideration should be given to health and safety protection for these conditions.

It is recommended that a Health and Safety Plan (HASP) is developed for construction activities based on sample analytical results, information specific to the parcel being developed, specific construction tasks to be performed, and the potential for exposure for site workers. Previous investigations and construction activities have routinely been performed. These previous activities has shown that overall, the potential for worker exposure is relatively low. However, all contractors and developers should consider the need for health and safety planning relative to their specific development, and planned activities and tasks.

Health and safety planning should also give consideration to other construction related issues, such as but not limited to trenching safety (as is required under OSHA regulations 29 CAR 1910.1926), or other construction-related OSHA regulations.

9.0 Summary and Limitations

Significant development has been performed at the FESL site and future development is anticipated. Past investigations at the FESL site has shown the waste-fill to contain primarily non-hazardous solid waste. NYSDEC regulations allow such solid waste to be excavated and replaced during the course of construction and development. However, hazardous waste has occasionally been encountered in the past at the site and excavation for construction purposes creates the potential for additional generation of hazardous waste. Further, it is desirable to reduce the potential for individual exposure to even non-hazardous solid waste. Accordingly, this guidance document has been developed to assist developers and designers in planning for development, characterizing materials that may be encountered during excavation, and planning for the management of those materials.

This document is intended for guidance purposes only. The information contained in the document is neither to be considered as specific direction or policy binding on any of the agencies or firms mentioned in the document. Significant investigation has been performed at the site in the past to develop a general understanding of subsurface conditions. However, such conditions can vary significantly between locations sampled. Further, conditions at a single location can change with time. Therefore, responsibility for properly characterizing excavated materials, planning construction, and appropriately managing any materials encountered, generated, or handled during site development is solely the responsibility of the site developer, owner, and designer.

10.0 Reporting Requirements

In accordance with 6NYCRR Part 613.8, contractors/owners are obligated to report any spill, leak, or discharge of petroleum products from bulk petroleum storage facilities to the New York State Department of Environmental Conservation. In addition, in accordance with 6NYCRR Part 595.2, contractors/owners are obligated to report any release of a reportable quantity or an unknown quantity of a hazardous substance from bulk chemical storage facilities as listed in 6NYCRR 597.2 when this contractual relationship is with the owner, agent of owner, or person in constructive possession or control of such a hazardous substance.

11.0 Contact Information

The individuals, agencies, and organizations listed below may be contacted for additional information:

Joseph Biondolillo
City of Rochester, Department of Environmental Services
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, NY 14614
(585) 428-6649

Todd Caffoe
NYSDEC Region 8
Div. of Hazardous Waste Remediation
6274 E. Avon Lima Road
Avon, NY 14414
(585) 226-2466

Mark Gregor
City of Rochester, Department of Environmental Services
Division of Environmental Quality
30 Church Street, Room 300B
Rochester, NY 14614
(585) 428-5978

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

Figures

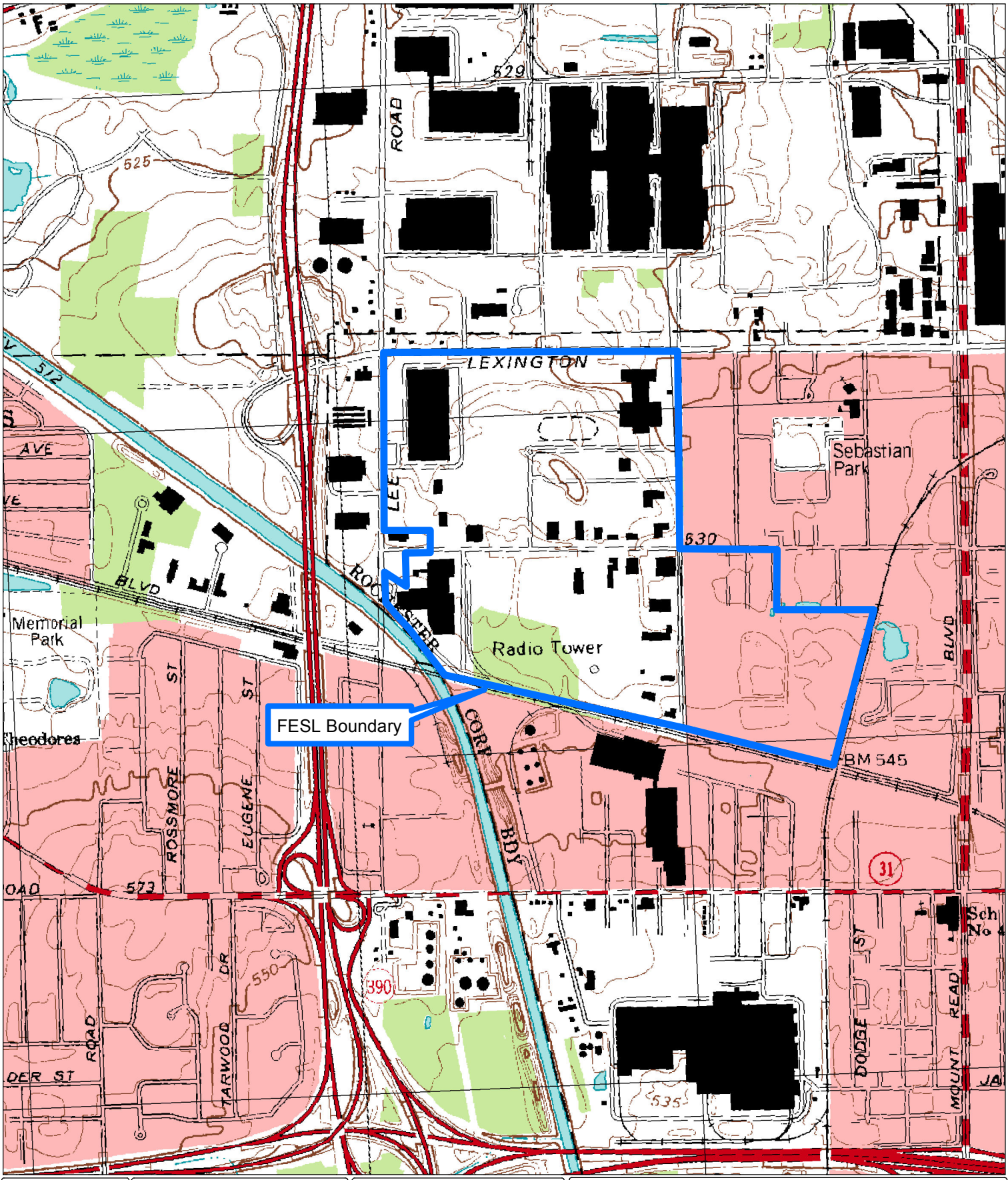

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FIGURE 1

PROJECT LOCUS WITH USGS 7.5-MINUTE ROCHESTER QUADRANGLE

SITE LOCATION MAP

GUIDANCE FOR WASTE-FILL MANAGEMENT DURING SITE DEVELOPMENT ON THE FORMER EMERSON STREET LANDFILL
CITY OF ROCHESTER

LABELLA Associates, D.P.C.
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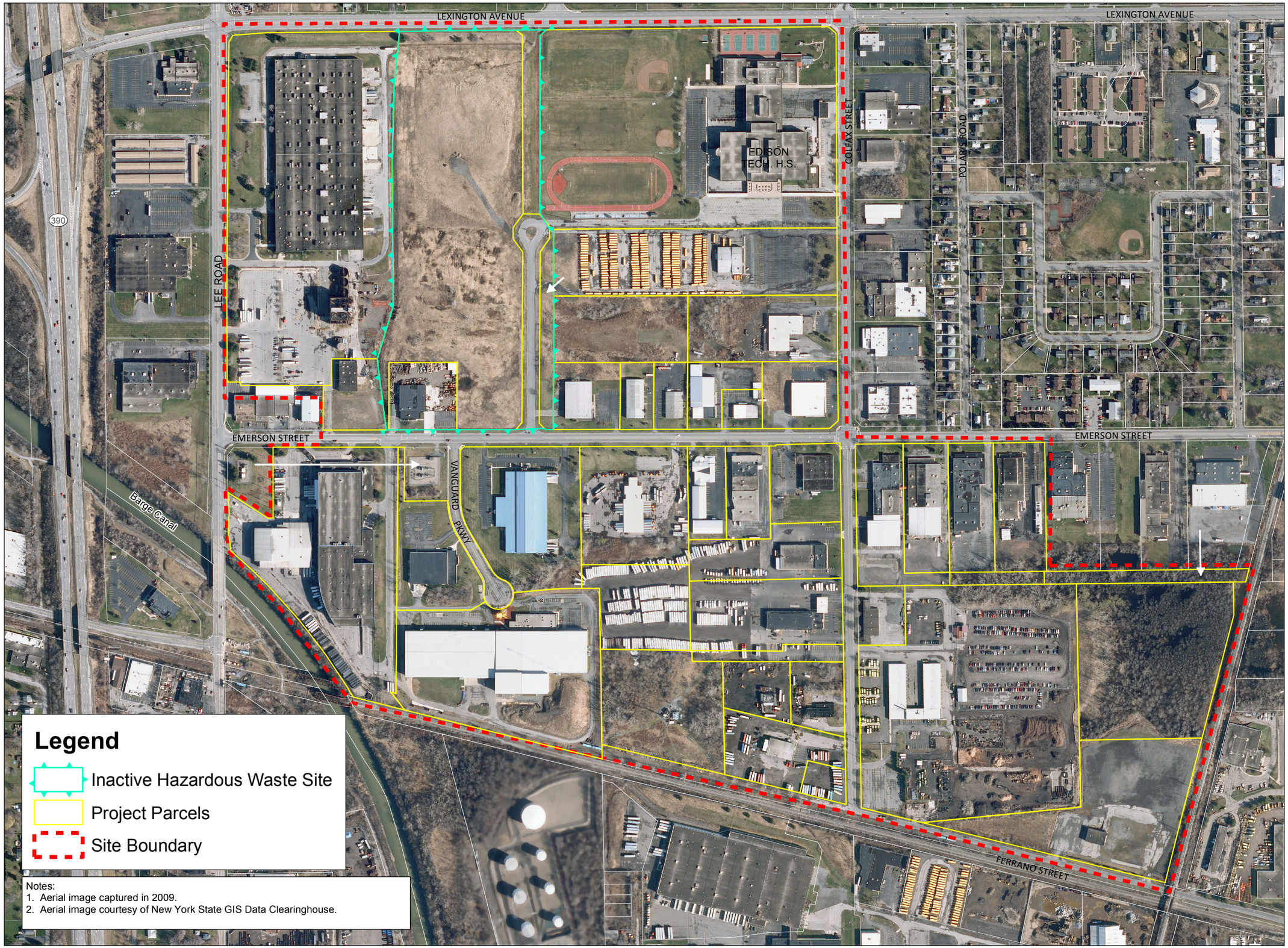
0 600 1,200 2,400 Feet

1 inch = 1,250 feet

N W E S

Path: J:\Rochester, City\210173 FESL\Drawings\Report Figures\Fill Guidance Report 2013\Fig 1 - Fill Guidance - Locus.mxd

User: jjaskowiak



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FORMER EMERSON STREET LANDFILL

GUIDANCE FOR WASTE-FILL MANAGEMENT DURING SITE DEVELOPMENT ON THE FORMER EMERSON STREET LANFILL

CITY OF ROCHESTER

FESL Parcel Information

N
W E
S

0 350 700
Feet

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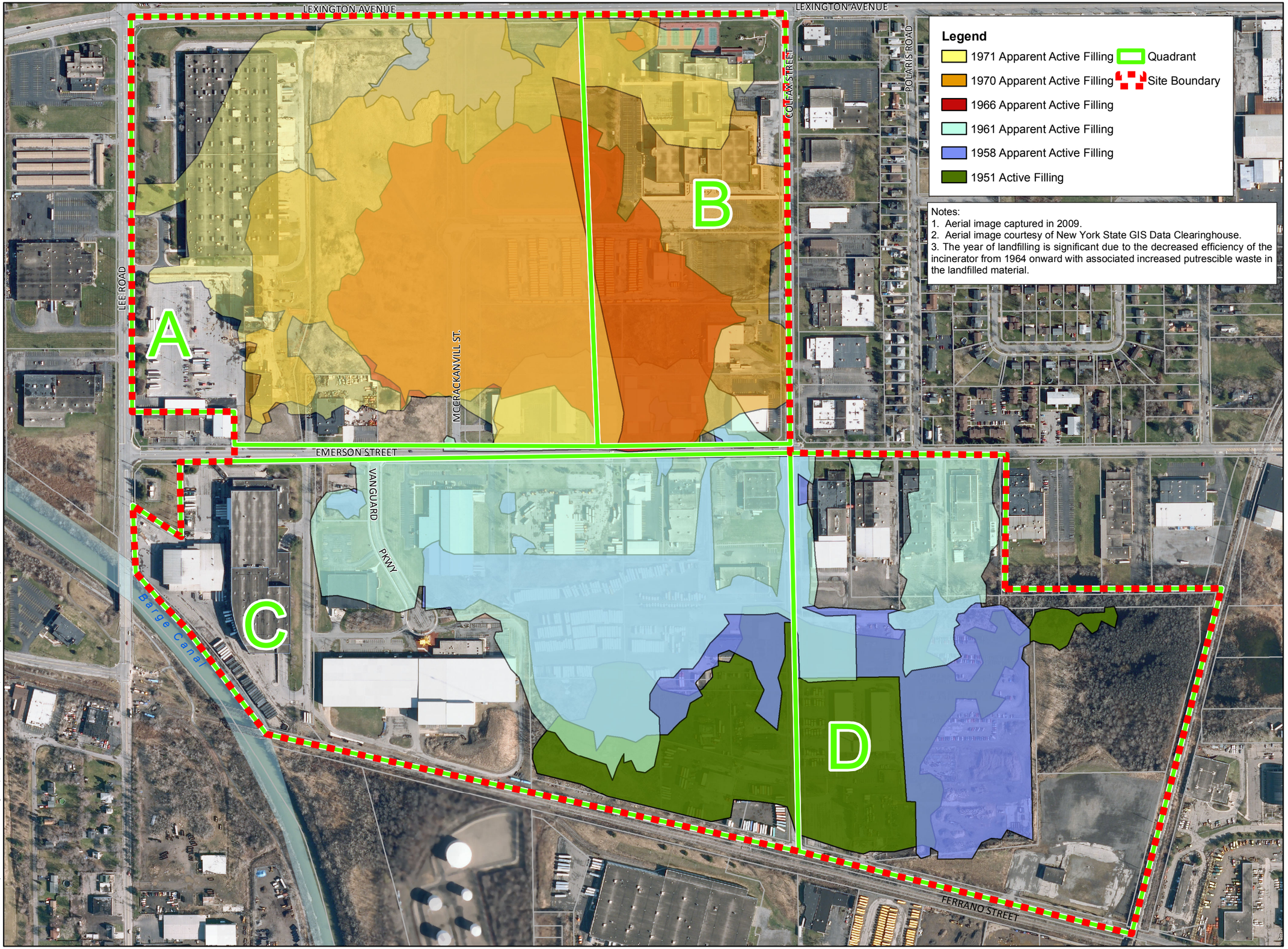
FIGURE 2



Path: J:\Rochester, City\210173 FES\LDrawings\Report Figures\Fill Guidance Report 2013\Figure 2 - DepositionByYear.mxd

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GUIDANCE FOR WASTE-FILL MANAGEMENT DURING SITE DEVELOPMENT ON THE FORMER EMERSON STREET LANDFILL

CITY OF ROCHESTER

Total Fill Footprint with Areas of Filling Identified on Aerial Photographs Defined by Year

N
W E
S

0 350 700
Feet

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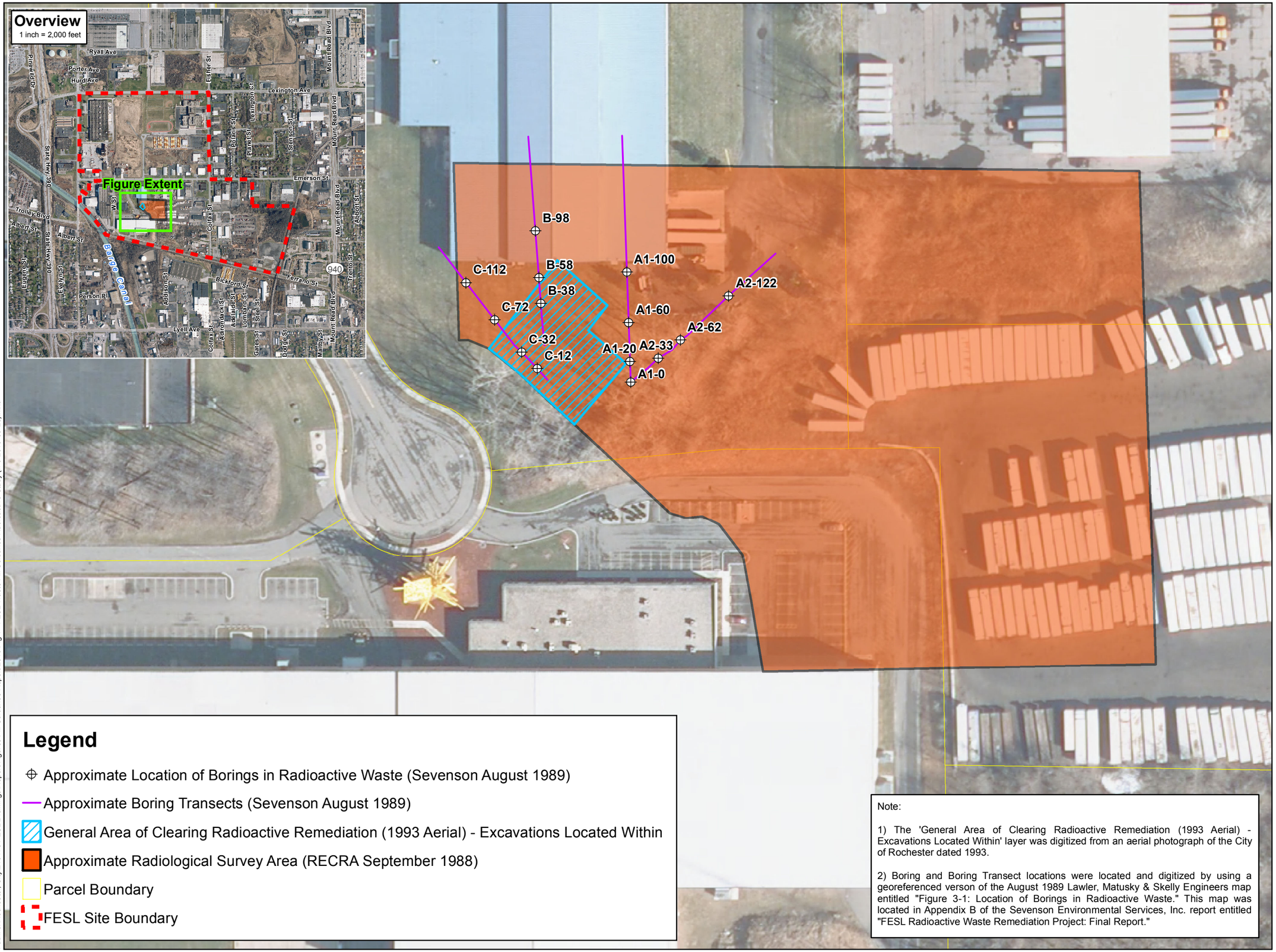
FIGURE 3



Legend

- Approximate Location of Borings in Radioactive Waste (Sevenson August 1989)
- Approximate Boring Transects (Sevenson August 1989)
- General Area of Clearing Radioactive Remediation (1993 Aerial) - Excavations Located Within
- Approximate Radiological Survey Area (RECRA September 1988)
- Parcel Boundary
- FESL Site Boundary

Note:

1) The 'General Area of Clearing Radioactive Remediation (1993 Aerial) - Excavations Located Within' layer was digitized from an aerial photograph of the City of Rochester dated 1993.

2) Boring and Boring Transect locations were located and digitized by using a georeferenced verson of the August 1989 Lawler, Matusky & Skelly Engineers map entitled "Figure 3-1: Location of Borings in Radioactive Waste." This map was located in Appendix B of the Sevenson Environmental Services, Inc. report entitled "FESL Radioactive Waste Remediation Project: Final Report."

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GUIDANCE FOR WASTE-FILL MANAGEMENT DURING SITE DEVELOPMENT ON THE FORMER EMERSON STREET LANDFILL

CITY OF ROCHESTER

RADIOLOGICAL SURVEY AND APPROXIMATE AREA OF REMOVAL

N
W E
S

0 1,500 3,000
Feet
1 inch = 80 feet

210173

FIGURE 4

Path: J:\Rochester, City\210173 FESL\Drawings\Report Figures\Fill Guidance Report 2013\Fig 1 - FESL Waste Fill Guidance Radioactive Study (IPJ 2013-03-28).mxd

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FORMER EMERSON STREET LANDFILL

GUIDANCE FOR WASTE-FILL MANAGEMENT DURING SITE DEVELOPMENT ON THE FORMER EMERSON STREET LANDFILL

CITY OF ROCHESTER

Historic Test Locations with Regulated Solid Waste (RSW) Limitis and Isopleths

Legend

- LaBella Test Pit, 2012
- LaBella Monitoring Well
- Day Monitoring Well
- GeoMatrix Monitoring Wells
- PEKO Monitoring Wells
- Historic H&A Monitoring Well
- Destroyed Historic H&A Monitoring Well
- 2012 Edison Tech Test Borings
- Historic Test Locations Included in RSW Model (RSW Thickness [ft])
- Historic Test Locations excluded from RSW Model
- Site Boundary
- Building
- Quadrant
- Incomplete Removal - See Section 2 for details
- Complete Removal - See Section 2 for details
- Parcel Boundary

RSW Thickness Isopleths (1-ft) - Kriging Model

- Major (5' Interval)
- Minor (1' Interval)

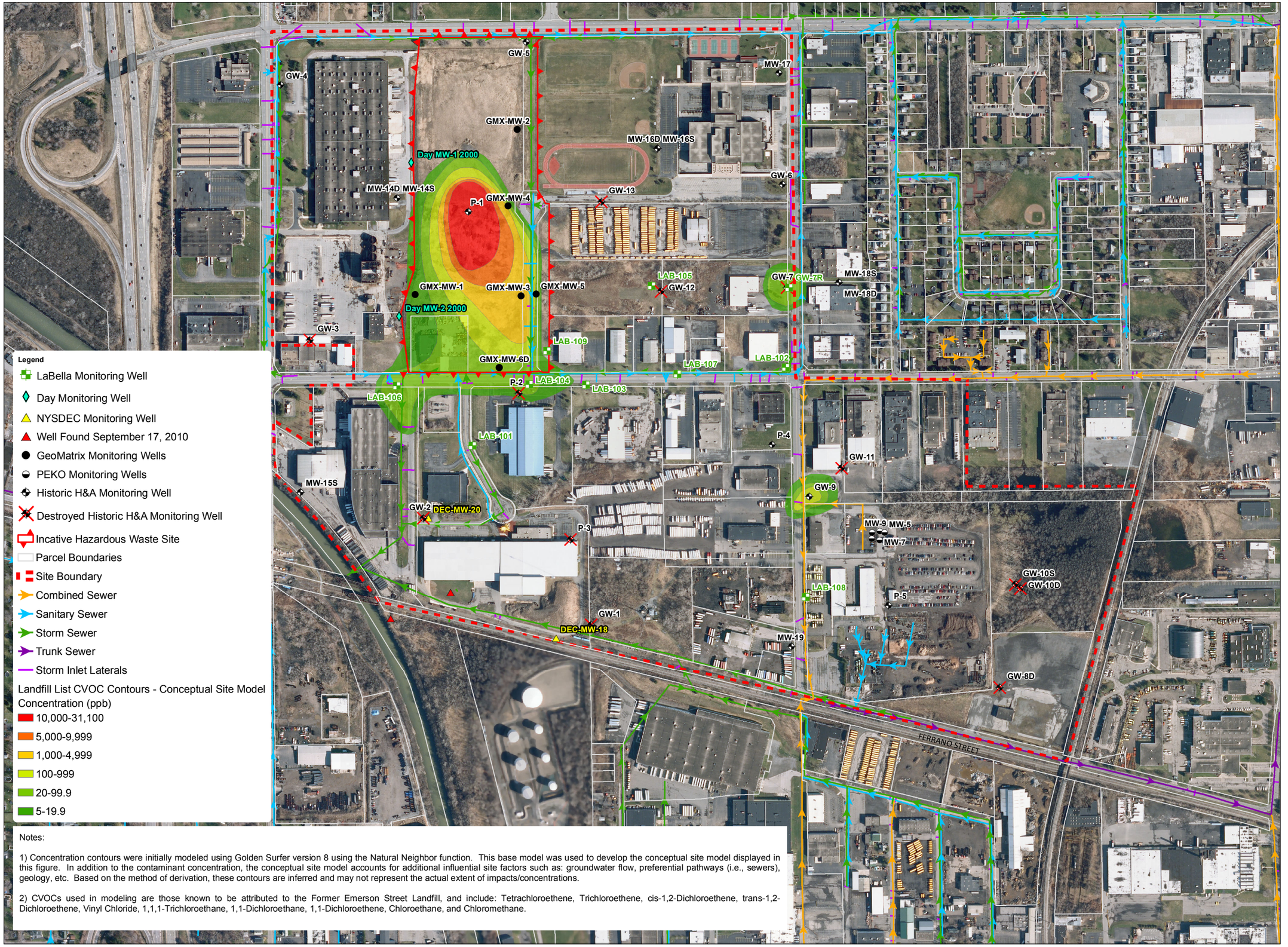
Note:
1) Investigation points with red labels have been incorporated in to the model.

N W E S

0 325 650
Feet

210173

FIGURE 5



Notes:

1) Concentration contours were initially modeled using Golden Surfer version 8 using the Natural Neighbor function. This base model was used to develop the conceptual site model displayed in this figure. In addition to the contaminant concentration, the conceptual site model accounts for additional influential site factors such as: groundwater flow, preferential pathways (i.e., sewers), geology, etc. Based on the method of derivation, these contours are inferred and may not represent the actual extent of impacts/concentrations.

2) CVOCs used in modeling are those known to be attributed to the Former Emerson Street Landfill, and include: Tetrachloroethene, Trichloroethene, cis-1,2-Dichloroethene, trans-1,2-Dichloroethene, Vinyl Chloride, 1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, Chloroethane, and Chloromethane.

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GUIDANCE FOR WASTE-FILL MANAGEMENT DURING SITE DEVELOPMENT ON THE FORMER EMERSON STREET LANDFILL

CITY OF ROCHESTER

CHLORINATED VOC CONTAMINATION AREAS

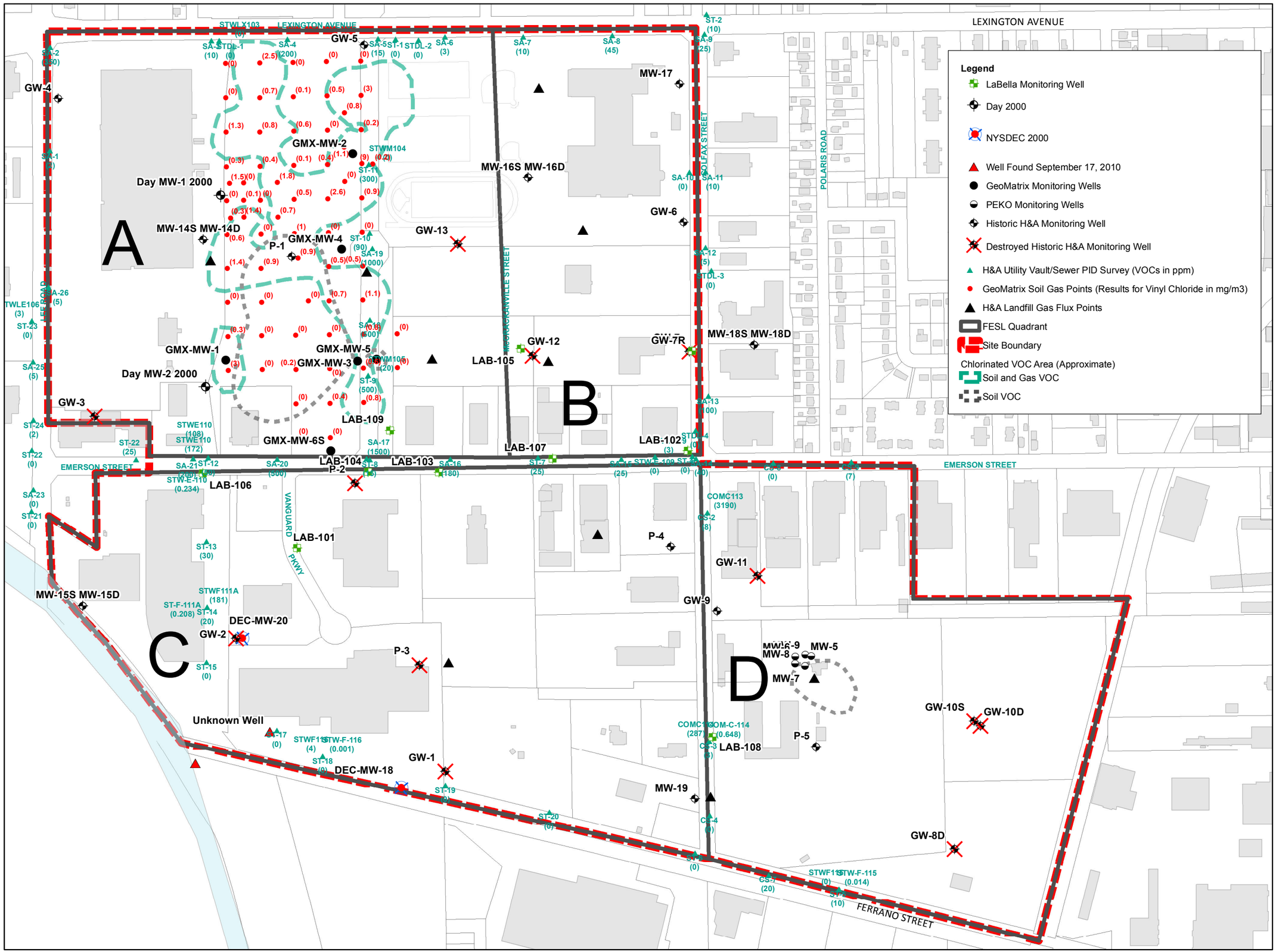
N
W E
S

0 360 720
Feet

1 inch = 500 feet

210173

FIGURE 6



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CITY OF ROCHESTER

CHLORINATED VOC CONTAMINATION IN SOIL AND SOIL VAPOR

210173

FIGURE 7

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

Appendix 1

Table 1
Vapor Intrusion Assessment Work Plan: Data Review, Site Screening and Site Prioritization

Summary of Relevant Documents Relating to the Former Emerson Street Landfill

1	Engineering Investigations at Inactive Hazardous Waste sites, Phase II Investigation, Emerson St Landfill, Site No. 828023. Addendum. New York State Department of Environmental Conservation. February 1990.
2	Review of the Emerson St Landfill City of Rochester Phase II Investigation Reports. Malcolm Pirnie. May 1990.
3	Proposed Emerson St Landfill Action Plan. City of Rochester. November 1990.
4	Health & Safety Plan Prepared for City of Rochester, NY, Emerson St Landfill. Sevenson Environmental Services. March 1992.
5	Delisting Petition for Properties Associated with the Former Emerson St Landfill Site. Haley & Aldrich of NY. April 1993.
6	Delisting Petition for the Former Emerson St Landfill Inactive Hazardous Waste Site. City of Rochester. August 1993.
7	Former Emerson Street Landfill Modified Remedial Investigation (Vol 1 through 4). Haley & Aldrich of NY. January 1994.
8	Test Pit and Soil Sampling Program Report, Former Emerson St Landfill. The Sear-Brown Group. May 1995.
9	Delisting Petition for Properties Associated with the Former Emerson Street Landfill Site. Haley & Aldrich of NY, July 1995.
10	Guidance for Waste-Fill Management During site Development, Former Emerson St Landfill. Haley & Aldrich of NY. July 1995.
11	Revision to the Guidance for Waste Fill Management During Site Development, Former Emerson St Landfill. Haley & Aldrich of NY. July 1997.
12	Health & Safety Plan for Site Construction. 1667 Emerson St. Labella Associates. November 1997.
13	Former Emerson Street Landfill, Sub-Slab Ventilation Guidance Document. Haley & Aldrich of New York. May 2000.
14	Former Emerson St Landfill Remedial Investigation Report for City of Rochester Parcels 4, 10, and 11. Labella Associates & Geomatrix Consultants. April 2001.
15	Former Emerson St Landfill Pre-Development Study – City of Rochester Parcels 4, 10. 11. Labella Associates & Geomatrix Consultants. November 2001.
16	Phase I Environmental Site Assessment. Undeveloped Land. 1695-1715 Emerson St. Day Environmental. June 2002.
17	Phase I Environmental Site Assessment, Undeveloped Land, 1695-1715 Emerson St. Day Environmental. October 2002.
18	Delisting Petition for Selected Parcels Associated with the Former Emerson St Landfill Site. Parcels 4 and 10. Labella Associates. December 2002.
19	Environmental Management Plan, 1695-1715 Emerson St (Parcel #2), Former Emerson St Landfill. Day Environmental. January 2003.
20	Fill Sorting Closure Report. Parcel 10A, Former Emerson St Landfill. Day Environmental. September 2004.
21	Phase II ESA Report. Proposed Lechase Facility Expansion, Parcel 10C, Former Emerson St Landfill and Lechase Emerson St Building. Bergmann Associates. February 2007.
22	Phase I Environmental Site Assessment Report. Parcel 10C, Former Emerson St Landfill, 1655 Lexington Ave. Bergmann Associates. February 2007.
23	Limited Phase II ESA Report. Parcel 10C Former Emerson St Landfill. Bergmann Associates. March 2007.
24	Phase I ESA – Portion of 500 Lee Road, Rochester, NY. Day Environmental. November 2007.
25	Former Emerson Street Landfill Sub-Slab Ventilation Guidance Document Update 2007. LaBella Associates. November 2007.
26	City of Rochester Emerson St Landfill Radioactive Waste Remediation Project, Final Report. Sevenson Environmental Services. Date Not Listed.
27	Record of Decision Chemical Sales Corporation Site Operable Unit #2, Off-Site Town of Gates, Monroe County Site Number 8-28-086. Department of Environmental Conservation, Division of Environmental Remediation. March 2001.

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

Appendix 2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-9 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JOHN DEERE 310 BACKHOE	LOCATION: E.G. Sackett Co., Inc., Emerson St. ELEVATION: EXPLORATION DATE: 11 Dec. 1992 H&A REP.: M. Beikirch

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Dark brown coarse to fine SAND, common cobbles, few boulders, damp. -FILL-	No OVA or radiation meter readings above background.
4				Same, more fine sand and silt, moist.	
			5.0		Water seeping into test pit from ~ 5.0 to 6.0 ft.*
6				Gray-yellow-brown clayey SAND, some silt, common cobbles, wet. -FILL OR DISTURBED NATURAL MATERIALS-	
			6.0	Brown-tan clayey SILT, trace coarse to fine sand. -GLACIAL TILL-	
8			8.0	Bottom of Test Pit at 8.0 ft.	
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT

* Hrs after completed

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 9 feet WIDTH 3 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 8.0 ft.

JAR SAMPLES: ---

BAG SAMPLES: ---

WATER LEVEL: * Not Encountered

TEST PIT NO. TP-9

DATE
STARTED 8/5/88
FINISHED 8/8/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-3
SURFACE ELEV. 109.2
G.W. ELEV. 105.38

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER (0/6, 6/12, 12/18, 18/24)	DESCRIPTION	NOTES
	1.5'	SB	1	2 / 4 / 5 / 7	Brown SILT and SAND, trace clay, little root material, dry, loose.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
5	1.5'	SB	2	6 / 11 / 20 / 25	At 5.3 ft.: Grades to SILT, some sand, trace gravel, moist. At 5.5 ft.: 1-2 in. wet silt layer.	Driller - Rocky Baye Assistant - Shawn Penrod
10	1.4'	SB	3	12 / 12 / 44 / 71	At 10.3 ft.: Grades to fine to medium SAND, little clay, trace gravel, moist.	Water level measured at 3.90 ft. on 11/9/88.
	1.1'	SB	4	13 / 34 / 50/.2'	[SILT and SAND] 13.2'	HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R meter = 12 micro-rem/hr. Auger drilling refusal at 13.0 ft.
15	REC 100% RQD 70%	NX	1		Gray, fine textured dolomite, weathered horizontal fractures along bedding surfaces, some mottling, vuggy. White precipitate visible along fractures and in some vugs, slightly to highly reactive to HCl. Hardness ranged from soft to moderately hard depending on the extent of weathering.	NX core run 1 drilled from 13.2 ft. to 18.2 ft. on 8/5/88. Rotary drilled with 3 7/8 in. tri-cone bit from 13.2 ft. to 18.5 ft.
20					[DOLOMITE BEDROCK] 18.5'	Coring was done with a long ear 5 ft. NQ core barrel and a Series 2 bit.
25						Boring Completed at 18.5 ft. G.W. Elevation taken on 12/16/88.
30						
35						

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.3

DATE
STARTED 8/9/88
FINISHED 8/10/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-4
SURFACE ELEV. 107.9
G.W. ELEV. 99.42

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
	1.5'	SB	1	8	8	16	12	Light brown SILT and CLAY fill, little to some sand, trace to little gravel, glass, plastic, wood, and paper, dry, loose to medium dense in situ.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
	1.5'	SB	2	6	5	4	5		Driller - Rocky Baye Assistant - Shawn Penrod
5									
	0.0.'	SB	6	1	1	3	1	At 8.0 ft.: Wet	HNU = 0 ppm Geiger Counter = 0 mr/hr.
								[FILL] 8.5'	Micro R meter = 6-12 micro-rem/hr.
	1.2'	SB	7	1	1	34	44	Weathered bedrock zone. 10.0'	Explosimeter = 100% LEL to a depth of about 2.0 ft. Seemed to be gas trapped below plastic liner.
10									Auger drilling refusal at 10.0 ft.
	REC 88% RQD 15%	NX	1					Bedrock: Light gray, fine textured dolomite. Horizontal and vertical fractures, weathering apparent on fractured surfaces, white precipitate visible on fractures and in some vugs, slightly reactive to HCl. Soft to moderately hard depending on extent weathering. Drilling fluid return was lost during entire depth of coring. 20.0'	NX core run 1 and 2 drilled on 8/9/88. Rotary drilled with 3 7/8 in. tri-cone bit from 10.0 ft. to 20.0 ft. Coring was done with a long ear 5 ft. NQ core barrel and a long ear Series 2 drill bit.
15									
	REC 98% RQD 43%	NX	2						Split-barrel samples 3-5 were not included because a new location was needed due to the inability to penetrate the underlying material.
20									Boring Completed at 20.0 ft. G.W. elevation taken on 12/16/88.
25									
30									
35									

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.4

DATE
STARTED 8/11/88
FINISHED 8/12/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-5
SURFACE ELEV. 96.2
G.W. ELEV. 87.02

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
	1.8'	SB	1	6	6	12	18	Light brown SILT, some sand, some gravel, little assorted trash and organic debris, dry, medium dense.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod HNU = 1 ppm - SB1-3 Explosimeter = 0% LEL Geiser Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Water level measured at 8.73' on 11/9/88. Auger drilling refusal at 10.0 ft. NX core run 1 drilled from 8.7 ft. - 13.7 ft. on 8/11/88. Rock fragments and cobbles were recovered from 8.7 ft. to 10.0 ft. NX Core run 2 drilled from 13.7 ft. - 18.7 ft. on 8/11/88. Begin to encounter water entering hole at approximately 14.0. Rotary drilled with 3-7/8 in. tri-cone bit from 10.0 ft. to 21.5 ft. Coring was done with a long ear 5 ft. NQ core barrel. Run 1 was drilled with a long ear Series 2 drill bit. Run 2 was drilled with a long ear 58-60 carat drill bit. Boring completed at 21.5 ft. G.W. elevation taken on 12/16/88.
	0.5'	SB	2	7	3	2	2		
5								At 2.0 ft.: Loose in situ.	
	1.5'	SB	3	5	3	4	12	At 6.0 ft.: Little gravel, trash is absent, moist.	
	2.0'	SB	4	10	20	40	21	[FILL] 9.0'	
10	REC 71% RQD 38%	RUN	1					Weathered bedrock zone 10.0'	
								Light gray fine textured dolomite, numerous horizontal fractures, large fracture at 13.2 ft. where drilling fluid was lost. Highly weathered zones from 14.0 ft. to 15.25 ft., slight drilling fluid loss. No precipitate or vugs present. Rock was soft at weathered zones to moderately hard.	
15	REC 100% RQD 64%	RUN	2						
20								[DOLOMITE BEDROCK] 21.5'	
25									
30									
35									

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.5

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-14S

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	---	---
INSIDE DIAMETER (IN)	4-1/4	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 12.0 ppm.

ELEVATION: 534.61
DATUM: NGVD
START: 28 May 1993
FINISH: 1 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Advanced augers to 12.0 ft. without split spoon sampling.
10						
15						Auger Refusal at 12.0 ft. Apparent Top of Competent Rock at 12.0 ft.
20						Notes: 1. No OVA readings above background in breathing zone. 2. No explosimeter or radioactivity meter readings above background in breathing zone. 3. Set 6.0 in temporary casing to 12.0 ft. 4. Reamed with 3-7/8 in. tri-cone rollerbit from 12.0 ft. to 20.0 ft. and set 2.0 in. PVC monitoring well. 5. Installed monitoring well in completed borehole, see Groundwater Monitoring Well Report.
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	12.0
ROCK CORED (LIN FT):	---
SAMPLES:	---
BORING NO.	MW-14S

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-14D

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: AC ROCHESTER

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: ---
DRILL MUD: ---
OTHER: Advanced augers to 12.5 ft.

ELEVATION: 534.81
DATUM: NGVD
START: 27 May 1993
FINISH: 1 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		5 7 8 8	S1 20"/24"	0.0 2.0		Medium dense brown silty fine SAND, little coarse to medium sand, trace gravel, damp to dry. -FILL-
		4 5 5 8	S2 23"/24"	2.0 4.0		Medium dense brown silty fine SAND, damp.
5		3 4 4 5	S3 3"/24"	4.0 6.0		Loose brown silty fine SAND, little gravel, damp to moist.
		3 5 3 5	S4 20"/24"	6.0 8.0		Same, except moist to wet. -FILL-
		3 6 7 7	S5 23"/24"	8.0 10.0		Medium dense brown silty fine SAND, little coarse sand, damp.
10		3 7 8 50	S6 15"/24"	10.0 12.0	11.5	Medium dense brown silty fine SAND, moist to wet. -FILL- Moderately hard, highly weathered, gray dolomitic MUDSTONE, moist. -ROCHESTER FORMATION-
15						Auger Refusal at 12.5 ft. Apparent Top of Competent Rock at 12.5 ft.
20						Notes: 1. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 0 ppm S3 = 1 ppm S4 = 13 ppm (10 ppm methane) S5 = 10 ppm (7 ppm methane) S6 = 1 ppm No OVA readings above background in the breathing zone. 2. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 3. See Core Boring Report, page 2. 4. Installed monitoring well in borehole.
25						

WATER LEVEL DATA						SAMPLE IDENTIFICATION	SUMMARY	
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon	OVERBURDEN (LIN FT):	12.5
							ROCK CORED (LIN FT):	20.5
							SAMPLES:	6S
							BORING NO.	MW-14D

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. MW-14D FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 12.5 ft.
	2	12.5					Light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color-banded. Trace pits and small vugs throughout. Closely to very closely spaced partings.
	3						
	2						-ROCHESTER FORMATION-
15	5	R1	87/4	102/5*			
	2						
	3				MOD		* RQD based on rock core recovered.
	3						
	3	19.6					Core block at 19.6 ft.
20	3	19.6					
	3	R2	35/6	100/17			Rough, vertical joints from 15.0 ft. to 15.7 ft. and from 17.9 ft. to 18.4 ft.
	2	22.5					
	2	22.5			MOD		Gypsum nodule at 24.2 ft.
	2						
25	2						
	2						
	2	R3	118/76	98/63			
	2						
	2						
	2				SL		Gypsum nodule, vug and parting at 27.8 ft.
30	2						
	2	32.5					
							Bottom of Boring at 32.5 ft.
							Notes:
35							1. Lost 320 gallons during coring and reaming process.
40							
45							

Data by KPM

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-1
Project No. _____

Project Name EMERSON STREET

Date 8/1/89 (start) 8/1/89 (finish)

Client NYSDEC

Boring Location NE SECTOR - ROCHESTER PROD.

Driller AMERICAN AUGER

Total Depth 33.5'

Monitoring Instrument(s) HNU, CGI, MSA 361, DOSIMETER

Depth to Water 25.88

SAMPLE HAMMER

Hole Diameter .7'

Weight (N/A) lb

Ground Surface Elevation 548.2

Fall ? in.

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
											NO SAMPLING WAS REQ.	
										0	BROWN SILTY SAND. MIXED GRAVEL	
										3'	WOOD, GLASS. MIXED DEBRIS - (FILL)	
										3.5	BLACK WOOD / CINDERS	SAMPLE RETAINED
									Moist	6	BLACK WOOD & DEBRIS	
									DRY	10	DARK ASH. METAL DEBRIS	100% LEL
											INTRODUCED WATER IN BORING	1 BPPM H/NU
									WET		CUTTINGS BLACK WOOD, SILT	
										18	WOOD DEBRIS BLACK COLOR	INCREASED DENSITY
										21	WOOD DERIS -	
										24.5	REFUSAL ON BEDROCK	
										25.5	CORE BARREL PLUGGED	
										26.5	DOLOMITE GREY	
											SEVERAL SOLUTION VOIDS .75"	
									5min	27.5	GREY DOLOMITE (FINE GRAIN)	
									3min	28.5	FEW FRACTURES W/V. LOW	
									2.75m.	29.5	WATER BEARING CAPACITY	
									3min	30.5	CARBONATE DEPOSITION - SOLUTION	
									3min	31.5	IN FRACTURES	
									2.5min	32.5	SMALL VOIDS - SOLUTION IN	
									2.5min	33.5	ROCK	

LAWLER, MATUSKY & SKELLY ENGINEERS

Boringt No. P-1
Project No. 576-005

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
											SET 2" PVC MONITOR WELL @ 33.5' 10' 20 SLOT SCREEN #2 SAND FROM 33.5-21.5 SCHED. 40 PVC RISER 3/8" BENTONITE PELLETS 21.5-19.5 70 GALS. BENTONITE SLURRY 2 BAGS HOLE PLUG ADDED PORTLAND CEMENT FROM 6' TO SURFACE PROTECTIVE STEEL CASING	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LAWLER, MATUSKY & SKELLY ENGINEERS

Data by KPM

Sheet 1 of ___

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. GW-13
Project No. 376-005

Project Name EMERSON STREET
Client NYS DEC
Driller AMERICAN AUGER
Monitoring Instrument(s) HNU, CGI, DOSIMETER, MSA

SAMPLE HAMMER
Weight 140 lb
Fall 30 in.

Date 7/28/89 (start) ___ (finish)
Boring Location SCHOOLFIELD - NORTH END
Total Depth 29.8
Depth to Water 22.14 'BG.
Hole Diameter 7-3'
Ground Surface Elevation 536.5

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
0-2	4	8	10	10	—	1.3	1		M. DENSE DRY		PLANT MATERIAL, BROWN DRY SILTY SANDY LOAM MIXED GRAVEL	COHESIVE
										1.8	BLACK SILTY ASH, SLAG, CINDERS GLASS	
5-7	4	8	10	11	—	.4	2		M. DENSE MOIST		BLACK PLASTIC, CINDERS, SILT, GLASS	
10-12	14	24	45	17	—	.8	3		DENSE DRY		DARK FRIABLE FILL (CANS, GLASS, WOOD, PLASTIC, ASH & CINDER) SOME SILT, FINE SAND, LESS DENSE @ 12'	
15-17	24	18	17	21	—	.9	4		DENSE DRY		DARK FRIABLE FILL (GLASS, PLASTIC, FABRIC, ASH, CINDERS) SOME PEBBLES, FINE SAND, SILT/	COMPACT ODORLESS
20-22	24	14	12	7	—	—	5		M. DENSE WET		NO RECOVERY - THROUGH FALLEN DEBRIS AUGER REFUSAL @ 21.2'	
									MIN	ft	CORING FROM 21.	
										22	CORE BARREL PLUGGED	
									3.0	23		
									1.5	24	GREY FRACTURED DOLOMITE	
									1.75	25	UNIFORM 95% RECOVERY	
									1.5	26		
									2.2	27		
									1.5	28	BOTTOM OF HOLE MEASURED @ 29.8'	
									2.0	29		

LAWLER, MATUSKY & SKELLY ENGINEERS

Boringt No. GW-13
Project No. 576-005

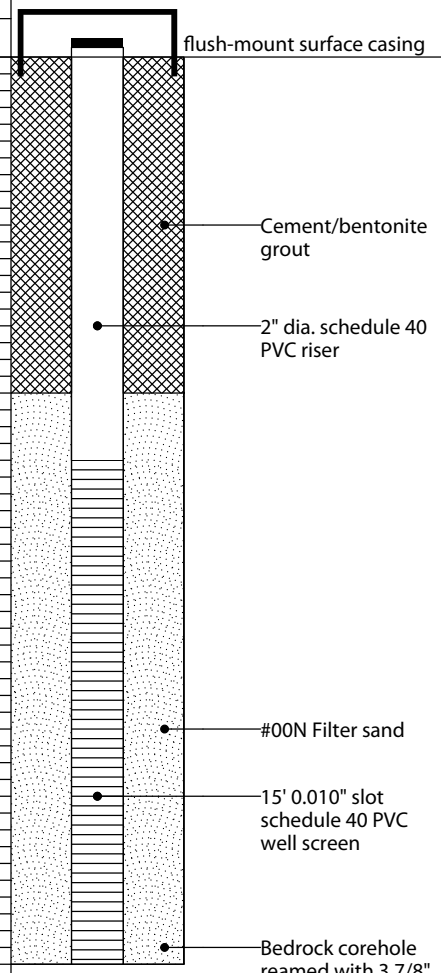
Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL f - fine m - medium c - coarse and - 35-50% some - 20-35% little - 10-20% trace - 0-10%	Remarks
											SET 2" PVC MONITORING WELL @ 29.8' 10' SCHED. 40 PVC SCREEN #2 SAND PACK TO 17.4' 3/8" BENTONITE PELLETS TO 16.3' BENTONITE SLURRY TO 4' PORTLAND CEMENT TO SURFACE PROTECTIVE STEEL CASING	

LAWLER, MATUSKY & SKELLY ENGINEERS

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York		Log of Well No. LAB-109	
BORING LOCATION: West of 1640 Emerson Street		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothangle Drilling		DATE STARTED: 12/13/10	DATE FINISHED: 12/14/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 27.0 fbgs	SCREEN INTERVAL: 12.0-27.0 fbgs
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER: FIRST / COMPL.	CASING: 2" PVC
SAMPLING METHOD: Geoprobe (direct push) 4' acetate sleeves		LOGGED BY: RM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1					Topsoil
2	1		NA	0	Red-brown SILT with little fine sand and little fine to medium angular gravel, moist throughout, no odors.
3					ASH/FILL- Black sand with approximately 80% cinders, and 20% ash, trace glass, metal.
4					
5					
6	2		NA	0	
7					
8					
9					
10	3		NA	0	
11					
12					As above with some wood pieces, saturated.
13					
14	4		NA	0	
15					
16					
17					
18	5		NA	0	Brown fine to medium SAND, little silt, little fine angular gravel, saturated.
19					
20					sampler refusal at 20.1 feet below ground surface.
21					Advance 4 1/4" HSA to 22' bgs (1.8' into bedrock).
22					Begin HQ rock core at 22.0' bgs.
23					
24					Run #1 Depth: 22.0-26.5 'bgs Rec: 41" (76%) RQD: 4" (7%) Lithology: LOCKPORT FORMATION (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					Rock core details: *closely spaced bedding plane joints throughout. *high angle joint at 24.9-25.1' bgs. *apparent void between 26 and 26.5' bgs. Approximately 60 gallons water loss in this zone.
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B101

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: AC Rochester (See Plan)
ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 13.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		7 5 8 10	S1 19"/24"	3.0 5.0		Medium dense dark brown to black ASH, and clayey SILT, some wood, glass, dry, -FILL-
5						
		4 4 3 2	S2 5"/24"	8.0 10.0		Loose black ASH and dark brown clayey SILT, and organic material, some glass, cinders and/or coal, ceramic fragments, brick, damp. -FILL-
10						
					13.2	Loose black ASH with plastic, glass and organic material.-FILL-
		5 9 43 100/.3	S3 19"/22"	13.0 14.8	13.8	Medium dense gray and brown SILT with black laminae, damp. -LACUSTRINE/FLUVIAL-
15						Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE. -ROCHESTER FORMATION-
						Bottom of Boring at 14.8 ft.
20						
25						

Note:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 0 ppm
   S2 = 10 ppm (methane)
   S3 = 15 ppm (methane)
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	14.8
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B101

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B102

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 23.5 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		7 13 18 7	S1 24"/24"	3.0 5.0		Dense brown SILT little coarse to fine sand, trace gravel with paper, plastic, carpet, dry. -FILL-
5						
		2 3 2 23	S2 12"/24"	8.0 10.0	9.5	Loose brown SILT, trace clay with glass, dry.
10						Dense ASH with charred wood. -FILL-
		6 8 12 15	S3 9"/24"	13.0 15.0		Medium dense ASH, some brick, wood and brown silt with newspaper, plaster board, cardboard, damp. -FILL-
15						
		4 6 9 9	S4 2"/24"	18.0 20.0		Medium dense ASH with wood, damp.
20						Loose ASH and dark brown clayey SILT with wood, trace fabric, cardboard and glass, dry. -FILL-
		100/.5	S5 5"/6"	23.0 23.5	23.3	Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE. -ROCHESTER FORMATION-
25						Bottom of Boring at 23.5 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.5
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B102

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B102 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 3 ppm
   S2 = 10 ppm (methane)
   S3 = 18 ppm (methane)
   S4 = 100 ppm (methane)
   S5 = 0 ppm
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S1 submitted for TCLP metals and hazardous charcteristics analyses. Sample S2 submitted for full TCLP analysis.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B103

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 20.0 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		3 3 6 3	S1 8"/24"	3.0 5.0		Loose brown sandy SILT, some gravel, trace organic material, dry. -FILL-
5					4.9	Loose dark brown and gray ASH with plastic, wood, glass, metal slag, dry. -FILL-
		3 6 12 13	S2 4"/24"	8.0 10.0		Medium dense dark gray-brown ASH, with metal, wood and silt, damp. -FILL-
10						
		7 8 6 3	S3 10"/24"	13.0 15.0		Medium dense black ASH with wood and sandy SILT, trace glass and plastic, damp. -FILL-
15						
		3 3 5 6	S4 6"/24"	18.0 20.0		Loose dark brown WOOD, trace metal slag and glass (ash) and brown silt, damp. -FILL-
20						
		100/.5	S5 6"/6"	22.0 22.5	22.3 22.5	Very dense black ASH with wood, pieces of metal slag and wire, shale fragments, wet. Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE, wet. -ROCHESTER FORMATION-
25						Bottom of Boring at 22.5 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	22.5
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B103

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B103 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 50 ppm (methane)
   S2 = 38 ppm (methane)
   S3 = 80 ppm (methane)
   S4 = 0 ppm
   S5 = 0 ppm
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B104

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 20.0 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		10 9 8 6	S1 S1-A 18"/24"	3.0 5.0	4.5	Medium dense brown very fine SAND, some gravel size dolostone fragments, dry. -FILL-
5					6.5	Medium dense brown REFUSE, with glass, newspaper, plastic, dolostone fragments and very fine sand, dry. -FILL-
		22 24 14 100/.3	S2 6"/22"	8.0 9.8		Dense brown ASH with glass, plastic, dolostone fragments, sand to gravel size, paper, dry. -FILL-
10						
		4 6 5 3	S3 6"/24"	13.0 15.0		Medium dense brown ASH with paper, plastic, cloth, glass, wood, dry. -FILL-
15						
		--- --- 100/.4	S4 6"/23"	18.0 19.9	19.5	Black ASH with metal, wood, plastic, dry.
20		100/.3	S5 4"/4"	20.0 20.3		Hard, highly to completely weathered, brown to gray-brown, fine-grained DOLOSTONE. -LOCKPORT FORMATION-
						Bottom of Boring at 20.3 ft.
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY
OVERBURDEN (LIN FT): 20.3
ROCK CORED (LIN FT): ---
SAMPLES: 5S
BORING NO. B104

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B104 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 12 ppm (methane)
   S2 = 48 ppm (methane)
   S3 = 55 ppm (methane)
   S4 = 16 ppm (methane)
   S5 = 4 ppm (methane)
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B105

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: AC Rochester (See Plan)
ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 18.2 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		47 67 7 4	S1 4"/24"	3.0 5.0		Very dense REFUSE, with plastic, cardboard, wood metal, carpet, dry. -FILL-
5						
		9 7 4 3	S2 2"/24"	8.0 10.0		Medium dense brown fine sandy SILT, with wood, moist. -FILL-
10						
		1 3 8 9	S3 15"/24"	13.0 15.0		Loose brown fine sandy SILT, trace wire, moist to wet. -FILL-
15					16.5	
		100/.2	S4 2"/3"	18.0 18.2		Dark gray-brown PEAT with shell fragments and clayey silt (MARL). -MARSH DEPOSIT-
20						Bottom of Boring at 18.2 ft. Apparent Top of Rock at 18.2 ft.
25						

Notes:
1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 15 ppm (methane) S2 = 30-50 ppm (10 ppm methane)
   S3 = 100 ppm (45 ppm methane) S4 = 10 ppm (methane)
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
4. Sample S1 submitted for TCLP metals and hazardous characteristics analyses.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	18.2
ROCK CORED (LIN FT):	---
SAMPLES:	4S
BORING NO.	B105

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B106

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 23.0 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		15 16 9 12	S1 18"/24"	3.0 5.0		Medium dense, brown fine sandy SILT, some glass, with wood plastic and paper, damp. -FILL-
5						
		13 9 12 23	S2 4"/24"	8.0 10.0		Medium dense WOOD, little fine sand and silt, with metal, moist to wet. -FILL-
10						
		6 9 15 10	S3 4"/24"	13.0 15.0		Medium dense brown WOOD, with metal pieces, moist to wet.
15					16.5	
		18 21 16 9	S4 4"/24"	18.0 20.0		Dense black-brown ASH, with wood, paper, metal, wet. -FILL-
20					21.5	
		8 100/.4	S5 6"/10"	23.0 23.9	23.9	Medium dense red-brown medium to fine SAND, moist to wet. -LACUSTRINE/FLUVIAL-
25						Bottom of Boring at 23.9 ft. Apparent Top of Rock at 23.9 ft.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.9
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B106

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B106 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 10 ppm (methane)
   S2 = 150 ppm (methane)
   S3 = 300-500 ppm (methane)
   S4 = 1000+ ppm (methane)
   S5 = 85 ppm (methane)
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S3 submitted for TCLP metals and hazardous characteristics analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B107

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 23.7 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 13 May 1993
FINISH: 13 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		11 11 3 8	S1 2"/24"	3.0 5.0		Medium dense brown fine sandy SILT, damp. -FILL-
					6.5	
		9 5 4 4	S2 5"/24"	8.0 10.0		Loose black ASH, with wood, plastic, metal, wet.
		9 5 3 6	S3 3"/24"	13.0 15.0		Loose black ASH with wood, organic material, moist to wet. -FILL-
		3 4 5 12	S4 6"/24"	18.0 20.0		Loose red-brown coarse to fine SAND, some glass, with wood, moist to wet. -FILL-
					21.5	
		72 100/.2	S5 6"/8"	23.0 23.7		Moderately hard, highly weathered, gray, very fine-grained dolomitic MUDSTONE, dry. -ROCHESTER FORMATION-
						Bottom of Boring at 23.7 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.7
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B107

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B107 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 450 ppm (methane)
   S2 = 1000 ppm (methane)
   S3 = Submitted for analysis
   S4 = 20 ppm (5 ppm methane)
   S5 = 70 ppm (methane)
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S3 and duplicate submitted for full TCLP analysis. Sample S4 submitted for TCLP metals, hazardous characteristics and TCL volatile organic analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B108

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: AC Rochester (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 18.8 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Observed red-brown SILT, some sand, little gravel, with clay to a depth of 2.7 feet in open borehole. -GLACIAL TILL DERIVED FILL-
		18 24 14 11	S1 18"/24"	3.0 5.0	4.8	Dense red-brown fine SAND, little gravel, little silt, with black ash layer at 4.8 ft. - 5.0 ft. -FILL-
		10 16 13 11	S2 2"/24"	8.0 10.0		Medium dense black ASH, with wood, wire, moist. (slight petroleum odor) -FILL-
		2 3 4 5	S3 15"/24"	13.0 15.0		Loose black ASH, with glass and ceramics, trace wire, moist to wet. (petroleum odor) -FILL-
					16.5	Hard brown clayey fine SAND, with glass, moist to wet. -DISTURBED NATIVE MATERIALS/FILL-
		18 100/.3	S4 6"/9"	18.0 18.8	18.5	Very dense brown silty fine SAND, some gravel, little clay, moist to wet. -LACUSTRINE/FLUVIAL-

Bottom of Boring at 18.8 ft.

Notes:
1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 500 ppm (200 methane) - (ash layer = 8-9 ppm methane)
   S2 = 1000+ (30 ppm methane)
   S3 = 300-400 ppm (210 ppm methane) S4 = 10 ppm methane
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
4. Sample S2 and duplicate submitted for TCLP metals and hazardous characteristics analyses. Sample 3 submitted for TCLP volatile organic analyses.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	18.8
ROCK CORED (LIN FT):	---
SAMPLES:	4S
BORING NO.	B108

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B109

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: AC Rochester (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 10.3 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0						
		5 5 6 9	S1 18"/24"	3.0 5.0		Medium dense brown to black ASH, with glass, wood, dry. -FILL-
5						
		5 8 8 2	S2 24"/24"	8.0 10.0	8.4	Medium dense brown to black ASH and brown SILT, with glass, slag, plastic, damp. -FILL-
10		100/.3	S3 3"/24"	10.0 10.3	10.0	Medium dense brown SILT, little gravel, damp to moist. -LACUSTRINE/FLUVIAL-
						Hard, highly to completely weathered, gray-brown fine-grained DOLOSTONE with trace plastic and metal slag. -LOCKPORT FORMATION-
15						Bottom of Boring at 10.3 ft.
20						
25						

Notes:
1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 38 ppm methane
   S2 = 60 ppm methane -- ash
   = 22 ppm methane -- silt
   S3 = 10 ppm methane
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
4. Sample S1 was submitted for TCLP metals and hazardous characteristics analyses.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.3
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B109

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B110

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Edison Technical & Occupational Education Center
ELEVATION: ---
DATUM: ---
START: 11 June 1993
FINISH: 11 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 15.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						6" of topsoil.
5		6 9 9 15	S1 4"/24"	3.0 5.0		Medium dense brown silty coarse to fine SAND, trace gravel, with paper, and plastic, dry to damp. -FILL-
10		7 13 7 10	S2 5"/24"	8.0 10.0		Medium dense METAL and WOOD, with plastic, damp. -FILL-
15		2 12 12 13	S3 15"/24"	13.0 15.0	13.0	Hard, highly weathered, gray, fine-grained DOLOSTONE. -LOCKPORT FORMATION-
20						Bottom of Boring at 15.0 ft.
25						

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = Submitted for analysis.
   S2 = 40 ppm (methane)
   S3 = 12 ppm (methane)
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
4. Sample S1 submitted for full TCLP analyses.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	15.0
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B110

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B111

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Edison Technical & Occupational Education Center
ELEVATION: ---
DATUM:
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 24.3 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						6" of topsoil.
		2 4 6 9	S1 15"/24"	3.0 5.0		Medium dense black ASH, with wood and glass, moist to wet. -FILL-
5						
		3 6 7 9	S2 8"/24"	8.0 10.0		Medium dense black ASH, and WOOD, with glass and brick, moist.
10						
		2 6 11 4	S3 12"/24"	13.0 15.0		Medium dense black ASH, with wood, glass and brick, damp to moist. -FILL-
15						
		2 3 5 3	S4 15"/15"	23.0 24.3		
20						Loose brown-black SILT with organics. -MARSH DEPOSIT-
					21.5	Loose gray-brown fine sandy SILT, moist. -RESIDUAL SOIL-
		5 88 100/.3	S5 15"/15"	23.0 24.3	23.4 23.7	Hard, highly weathered gray, fine-grained DOLOSTONE. -LOCKPORT FORMATION-
25					24.3	Bottom of Boring at 24.3 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	24.3
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B111

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B111 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 10 ppm (methane)
   S2 = 280 ppm (methane)
   S3 = 10 ppm (methane)
   S4 = 40 ppm (methane)
   S5 = 15 ppm (methane)
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S4 was submitted for TCLP metals and hazardous characteristics analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B112

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Edison Technical & Occupational Education Center
ELEVATION: ---
DATUM: ---
START: 8 June 1993
FINISH: 8 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Auger
DRILL MUD: ---
OTHER: Advanced augers to 22.5 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		2 4 6 8	S1 8"/24"	3.0 5.0		Medium dense black ASH, some gravel, with glass, metal, cinders and brick, moist. -FILL-
5						
		6 7 5 3	S2 6"/24"	8.0 10.0		Same. -FILL-
10						
		2 4 6 10	S3 3"/24"	13.0 15.0		Same, except moist to wet.
15						
		5 6 4 7	S4 4"/24"	18.0 20.0		Medium dense black ASH, moist to wet. -FILL-
20						
25						Auger Refusal at 22.5 ft. Bottom of Boring at 22.5 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	22.5
ROCK CORED (LIN FT):	---
SAMPLES:	4S
BORING NO.	B112

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B112 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 20 ppm (methane)
   S2 = 1000+ ppm (400 ppm methane)
   S3 = 10 ppm (methane)
   S4 = 4 ppm (2 ppm methane)
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S2 was submitted for TCL volatile organic analysis.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B113

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: U.D.C.
(See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 20.9 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		32 25 10 10	S1 6"/24"	3.0 5.0	4.8	Dense brown clayey SILT, trace gravel and organic material with ASH layer containing glass fragments at 4.8 ft., moist to wet. -FILL-
5						-FILL-
		9 6 3 5	S2 5"/24"	8.0 10.0		Loose black ASH, with metal and plastic, wet.
10						
		1 2 2 1	S3 5"/24"	13.0 15.0		Loose black ASH, with metal and plastic, wet. -FILL-
15					16.5	
		14 11 24 23	S4 13"/24"	18.0 20.0		Medium dense mottled brown-gray SILT, little sand, trace gravel moist. -DISTURBED LACUSTRINE/FLUVIAL- OR RESIDUAL SOIL-
20					20.9	Bottom of Boring at 20.9 ft.
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	20.9
ROCK CORED (LIN FT):	---
SAMPLES:	4S
BORING NO.	B113

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B113 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 1000+ ppm methane
   S2 = 1000+ ppm (200 ppm methane)
   S3 = 950 ppm methane
   S4 = 0.8 ppm methane
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S2 was submitted for TCL volatile organic analysis. Sample S3 was submitted for TCLP metals and hazardous characteristics analyses.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B114

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: Laird Plastics (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 23.5 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		4 4 15 7	S1 2"/24"	3.0 5.0	4.0	Loose brown silty fine SAND, dry. -FILL-
						Medium dense black iron-stained ASH with glass, moist. -FILL-
		4 5 4 3	S2 4"/24"	8.0 10.0		Loose black ASH, with glass, cinders, wire, ceramic fragments, moist to wet. -FILL-
		WOH 1 1 2	S3 4"/24"	13.0 15.0		Very loose black ASH, with glass, metal, wet. -FILL-
		3 3 4 7	S4 8"/24"	18.0 20.0		Loose black ASH, with ceramic fragments, glass, wire, trace gravel, wet. -FILL-
					21.5	
		50/.2	S5 2"/2"	23.0 23.2		Loose gray fine sandy SILT, with clay seams, wet. -LACUSTRINE/FLUVIAL-
						Bottom of Boring at 23.2 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.2
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B114

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B114 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 8 ppm methane
   S2 = 5 ppm methane
   S3 = 2 ppm methane
   S4 = 30 ppm methane
   S5 = 0.3 ppm (H.S.) methane
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

BORING LOG

Bergmann associates

BORING NUMBER: **TEST BORING B-1**

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-1
Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
Screened Interval: none Slot Size: none Well Type: none Sandpack: none
Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER* SAMPLE NUMBER Depth	Sample	Recovery	SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs Background values at surface PID = 0.6 ppm FID = 5 ppm	
0	0' - 3'	1	78%	1"' Topsoil with roots at surface			
				5" of apparent landfill cap material = Silt and fine sand	2' = 9 uR/Hr	2' = 0.6 ppm	2' = 14 ppm
				Landfill waste below 6" = Sand, gravel, glass	3' = 19 uR/Hr	3' = 0.6 ppm	3' = 26 ppm
	3' - 6'	2	53%	at 3': waste = gravel, black ash, glass, metal		4' = 0.6 ppm	4' = 11 ppm
5					5'=12 uR/Hr	5' = 0.59 ppm	5' = 14 ppm
				Rock fragment at bottom of sample barrel			
						SOIL GAS VALUES	
				Boring terminated 6.0 ft	uR/Hr =	Background at surface:	
				backfilled with cuttings	micro Rems	PID = 0.6 ppm FID = 4.2 ppm	
10				filled surface with	per Hour		
				bentonite.		Soil Gas Sample collected 5 ft	
						PID=0.48 ppm FID = 2.3 %	
15						ppm = parts per million	
						PID=TVA 1000, 10.6 ev lamp	
						FID=TVA 1000	
20						% = 10,000 ppm	
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG

Bergmann associates

BORING NUMBER: **TEST BORING B-2**

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-2
Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
Screened Interval: none Slot Size: none Well Type: none Sandpack: none
Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER* SAMPLE NUMBER Depth	Sample	Recovery	SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs Background values at surface PID = 0.6 ppm	FID = 10 ppm
0	0' - 3'	1	67%	2"' Topsoil with roots at surface 8" of apparent landfill cap material = Silt and fine sand Landfill waste below 6" = Brown Sand & Gravel		2' = 0.6 ppm	2' = 12 ppm
5	3' - 6'	2	78%	Same to 3.5 ft Below 3.5 ft: Black ash, glass, plastic mixed in sand Same waste to termination of boring at 6.0 feet	3'-6': 9 to 13 uR/Hr	4' = 1.5 ppm 6' = 0.6-1.5 pp	4' = 15 ppm 6' = 19 ppm
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID = 0.4 ppm FID = 8 ppm Soil Gas Sample collected 5 ft PID=5.5 ppm FID = 4.12 %	
15						ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG

Bergmann associates

BORING NUMBER: **TEST BORING B-3**

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-3
Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
Screened Interval: none Slot Size: none Well Type: none Sandpack: none
Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER* / SAMPLE NUMBER Depth	Sample	Recovery	SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs Background values at surface PID = 0.6 ppm	FID = 10 ppm
0	0' - 3'	1	97%	2.5"' Topsoil with roots at surface 11" of apparent landfill cap material = Silt & fine sand Landfill waste below 13" = Brown Sand & Gravel, Silt	0'-3': 15 - 16 uR/Hr		
5	3' - 6'	2	92%	Saturated zone at 3.0 feet Same sand, gravel and silt to 4.0 feet 4.0 feet: Black ash, plastic, glass to termination at 6 ft	5': 20 uR/Hr	4-6' =0.7 ppm	4-6' = 70 ppm
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID = 0.29 pp FID = 8.5 ppm Soil Gas Sample collected 5 ft PID=0.5 ppm FID = 7.8 %	
15						ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG

Bergmann associates

BORING NUMBER: **TEST BORING B-4**

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-4
Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
Screened Interval: none Slot Size: none Well Type: none Sandpack: none
Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER* / SAMPLE NUMBER Depth	Sample	Recovery	SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs Background values at surface PID = 0.64 pp FID = 1.4 ppm	
0	0' - 3'	1	89%	2"' Topsoil with roots at surface 10" of apparent landfill cap material = Silt & fine sand Landfill waste below 13" = Brown Sand & Gravel, Silt	0'=15 uR/Hr 0'-2': 8 to 12 uR/Hr	2' = 0.65 ppm	2' = 0.41 ppm
5	3' - 6'	2	83%	Same sand and gravel to 4 feet At 4 feet: ash, glass, rubber, silt in the waste Continued to termination at 6.0 feet	3'-6': 6 to 10 uR/Hr	4-6' = 0.7 ppm	4-6' = 70 ppm
10				Boring terminated 6.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID=0.71 ppm FID = 1.47 ppm Soil Gas Sample collected 5 ft PID=0.56 ppm FID = 14 %	
15						ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
20							
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

BORING LOG

Bergmann associates

BORING NUMBER: TEST BORING B-13

PROJECT: LeChase Expansion at Emerson St. Project No: 7279.01 Page No. 1 of 1
Start Date: 01/25/07 Finish Date 1/25/2007 Top of Well: N/A Boring No: B-13
Driller: Jeff Schweitzer, Nothnagle Drilling Boring Location: Former Emerson St. Landfill Parcel # 10
Inspector: Edward Jones, Bergmann Associates Water Level (During Drilling): Not encountered
Drilling Method: Geoprobe 6610DT Direct Push Water Level (Post Drilling): Not encountered
Remarks: No groundwater monitoring point installed. Boring backfilled with cuttings. Bentonite backfill at surface.
Screened Interval: none Slot Size: none Well Type: none Sandpack: none
Seal: none Weather Conditions: cold, 14 degrees, 1 foot of snow on ground
Field Screening: VOCs via TVA 1000: Radiation by Ludlum 2241

DEPTH	BLOWS ON SAMPLER* / SAMPLE NUMBER Depth	Sample	Recovery	SOIL DESCRIPTION	Ionizing Radiation Readings	Field Screening for VOCs Background values at surface PID = 0.1 ppm	FID = 5.5 ppm
0	0' - 3'	1	92%	1"' Topsoil with roots at surface 4" of apparent landfill cap material = Silt & fine sand Landfill waste below 5" =coarse sand and gravel	3' = 9 - 15 uR/Hr	2' = 0.3 ppm 3' = 0.3 ppm	2' = 4.6 ppm 3' = 7.3 ppm
5	3' - 6'	2	89%	same waste to 3.5'. Then black silt and ash, wet zone	6' = 11 - 15 uR/ Hr	4' = 0.2 ppm	4' = 9.5 ppm
	6' - 9'	3	42%	6' - 9' : very soft black & brown mottled silt and fine sand	9'=6-9 uR/Hr	6' = 0.33 ppm 7-9'=0.21 ppm	6' = 8.0 ppm 7-9'=12.5 ppm
10				Boring terminated 9.0 ft backfilled with cuttings filled surface with bentonite.	uR/Hr = micro Rems per Hour	SOIL GAS VALUES Background at surface: PID = 0.5 ppm	FID = 2.8 ppm
15						Soil Gas Sample collected 5 ft PID=2.8 ppm	FID=2,000 ppm
20						ppm = parts per million PID=TVA 1000, 10.6 ev lamp FID=TVA 1000 % = 10,000 ppm	
25							
30							

*Blow counts not obtained. Macro core sampling barrel used via direct push to collect the soil samples.

N=No. of Blows to Drive 2" Spoon 12" with 140 lb wt. Hammer 30" Each Blow

Foundation Design, P.C.

Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-1
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	101.1	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2	S-1	2'0"	TOPSOIL, ROOTMAT 0'5" Firm brown dry SAND, SILT and GRAVEL, trace brick, trace plastic, trace wood, trace metal 1'9" TOPSOIL 2'9" Firm tan brown moist SILT, little sand, trace clay, trace gravel, trace cobbles
4			
6			24" boulder noted at 6'0"
8			
10			9'0" Test pit terminated at 9'0"
12			Notes: 1. Sides vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

TP07-1

Foundation Design, P.C.

Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-2
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	99.7 ±	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			ROOTMAT 0'4" FILL: Firm tan-brown moist SAND, SILT and GRAVEL, trace brick, trace organic, few cobbles
4			
6			4'6" Firm tan-brown moist SILT, little sand, trace clay
8			6'5" Test pit terminated at 6'5"
10			Notes: 1. Sides vertical.
12			2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C. 4. Location moved to southeast corner of building due to utility conflict. 5. Existing building on caisson/grade beam.

Site Pictures

TP07-2

Foundation Design, P.C.

Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-3
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	101.5	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			ROOTMAT 0'4" FILL: Firm tan-brown dry SAND, SILT and GRAVEL, trace concrete, trace brick, trace metal
4	S-1	3'6"	2'6" TOPSOIL 3'0" Firm tan-brown moist SILT, little sand
6			
8			
10			9'0" Test pit terminated at 9'0"
12			Notes: 1. Sides vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

NO PHOTO

Foundation Design, P.C.

Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-4
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	101.9	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			TOPSOIL, ROOTMAT 0'4" Firm to compact SAND, SILT and GRAVEL, numerous cobbles, trace metal 30" boulder noted at 2'6"
4	S-1	3'0"	2'6" TOPSOIL with wood 3'7" Firm to compact brown moist SILT, little sand, trace clay, trace gravel
6			5'8"
8			Stiff tan-brown moist SILT and CLAY, trace sand 8'0"
10			Test pit terminated at 8'0"
12			Notes: 1. Sides Vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

TP07-4

Foundation Design, P.C.

Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-6
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	101.2	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL/ROOTMAT 0'4" FILL: Firm brown dry SAND, SILT and GRAVEL, numerous cobbles and boulders, trace metal
4	S-1	4'0"	2'3" TOPSOIL 3'3" Firm tan-brown moist SILT, little sand, little gravel
6			4'6" Firm tan-brown moist SILT, some sand, little gravel, few cobbles
8			7'0" Refusal on apparent bedrock at 7'0"
10			
12			Notes: 1. Sides vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

NO PHOTO

Foundation Design, P.C.

Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-7
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	100.5	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			ROOTMAT 0'4" Firm tan-brown dry SAND, SILT and GRAVEL, numerous cobbles
4	S-1	4'0"	2'6" TOPSOIL, trace wood 3'6" Firm tan-brown moist SILT, little sand, little gravel
6			4'6" Firm tan-brown moist SILT, little to some sand, trace gravel
8			7'6" Refusal on apparent bedrock at 7'6"
10			
12			Notes: 1. Sides vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

NO PHOTO

Foundation Design, P.C.

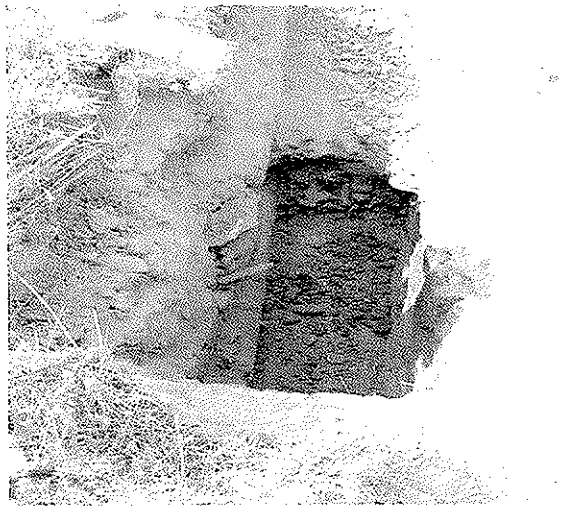
Test Pit Log

Project No.	3189.0	**Page** 1 **of** 1		**Test Pit No.**	TP07-8
Project Name	500 Lee Road Addition, Rochester, New York 14606				
Client	Day Engineering, P.C., 40 Commercial Street, Rochester, New York 14614				
Elevation	100.5	**Weather**	Sunny, 85°	**Technician**	S. Allen
Date Started	9/7/07	**Completed**	9/7/07	**Operator**	Dominic
Backhoe Subcontractor	F. Monte Enterprises			**Equipment**	Deere 310E

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ROOTMAT 0'4" Compact SAND, SILT and GRAVEL, trace concrete, trace brick, numerous cobbles
4			4'0" Firm black moist SILT, some sand, trace organics (buried topsoil)
6	S-1	5'0"	6'0" Firm to compact SILT, little to some sand, trace gravel, trace clay
8			7'7" Refusal on apparent bedrock at 7'7"
10			
12			Notes: 1. Sides Vertical. 2. Dry on completion. 3. Staked locations/elevations provided by Foundation Design, P.C.

Site Pictures

TP07-8



APPENDIX A

PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York	**Log of Well No. GMX-MW-1**	
BORING LOCATION:	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 6/12/00	DATE FINISHED: 6/12/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ	TOTAL DEPTH: 29.0 fbgs	SCREEN INTERVA 19 to 29 fbgs
DRILLING EQUIPMENT: CME-75	DEPTH TO WATER: | FIRST | COMPL.	CASING:
SAMPLING METHOD: Split-Spoon	LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs | DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation: fmsl	
1	1		49	0	**Gravelly Silt (ML):** dark red/brown, moist, 60% fines, 30% fine gravel, 10% fine sand, medium plasticity, soft, some rootletts	Cement
2					-dry (0.6-0.9)	
3	2		32	0	**WASTE:** dark grey, dry, 70% fines, 20% fine gravel, 10% waste (plastic, paper), soft	
4					-dark grey/brown, moist	
5	3		10	2.4	**Gravelly Silt (ML):** dark red/brown, moist, 60% fines, 30% fine gravel, 10% fine sand, medium plasticity, soft, some rootletts	Grout (tremied)
6					**WASTE:** dark brown/black, moist, 60% fines, 20% waste (paper, wood, plastic, metal, etc.) 10% fine gravel	
7	4		20	1.3		
8						
9	5		17	1.3		
10					-strong odor with glass, paper, wire, wood	
11	6		11	6.3		
12						
13	7		69			Sand Ricci #00
14						
15	8		7			Bentonite Pellets
16					-wet	
17	9			0.2	**SILT with SAND (ML):** greenish/brown, wet, 80% fines, 20% fine sand, high plasticity, soft	
18					**0.6 to 0.8** Waste as above (wire with fines)	
19	10				**WASTE:** dark brown/black, moist, 60% fines, 20% waste (wire, fines) 10% fine gravel	
20					-weathered bedrock	
21					**LOCKPORT DOLOMITE:** dark grey, fine grained, moderately hard, closely spaced moderately wide horizontal fractures	
22					-cavity, 1-2" in diameter (18.3-18.5)	
23					-angular fracture with trace silt and fine sand Run #1 (18-23): Recovery = 95% RQD = 48%	Screen, 2" 0.010-slot PVC
24					-occassional vugs	
25						Sand Ricci #00N
26						
27					Run #2 (23-28): Recovery = 99% RQD = 72%	
28					-less horizontal fractures, trace chert filled vugs	
29					Run #3 (28-30): Core Recovery = 100% RQD = 98%	
30						

WELL_OVM 5976MW1.GPJ (3/0

Log of Well No. GMX-MW-2

PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York		TOP OF RISER ELEVATION: fmsl	DATUM:
BORING LOCATION:		DATE STARTED: 6/13/00	DATE FINISHED: 6/14/00
DRILLING CONTRACTOR: Nothnagle		TOTAL DEPTH: 36.0 fbgs	SCREEN INTERVAL: 25 to 35 fbgs
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		DEPTH TO WATER: | FIRST | COMPL.	CASING:
DRILLING EQUIPMENT: CME-75		LOGGED BY: BCH	
SAMPLING METHOD: Split-Spoon		RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.
HAMMER WEIGHT: 140 lbs	DROP: 30"		

DEPTH (feet)	SAMPLES Sample No.	Sample	Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter. Surface Elevation: fmsl	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
1	1		42	0	**ORGANIC SILT (OL):** dark brown, 70% fines, 20% fine gravel, 10% rootletts, medium plasticity, moist, firm, TOPSOIL	Cement
2					**SAND with GRAVEL (SW):** dark grey/brown, moist, 70% fine sand, 20% fine gravel, 10% low plasticity fines, loose, iron stained	
3	2		6	1.5	**WELL GRADED GRAVEL with SILT (GW-GM):** light grey/white, dry, 70% coarse gravel, 20% fine gravel, 10% low plasticity fines, loose	
4						
5	3		6	2.5	**WASTE:** brown, moist, 50% fine sand, 30% medium plasticity fines, 20% fine gravel with waste (glass, paper, metal), firm, strong odor	
6						
7	4		8	2.9	**WASTE:** black, moist, 70% coarse sand, 20% fine gravel with waste (glass, plastic, paper, ceramic), 10% nonplastic fines, loose	
8					-strong odor with paper, glass, string, wire, metal, etc.	
9	5		9	2.7	**WASTE:** light brown/tan, moist, 60% fines, 20% fine sand, 5% fine gravel, 5% waste (as above), medium plasticity, firm	
10						
11	6		8	0.7	-wood, glass	
12					**WASTE:** black, wet, 60% fine sand, 20% fine gravel, 10% coarse gravel, 10% waste (paper, wood), loose	
13	7		4	1.7		
14					-wet, purple foundary sand, wood, paper, plastic	Grout
15	8		9	0.2		
16						
17	9		49			
18					**WASTE** as above, wet (wood, paper, plastic, glass)	
19	10		9	1.0		
20					-black, wet, more organics (peat-like), wood, foundary sand, plastic, paper	
21	11		6	1.0		
22					**WASTE:** dark grey, wet, 60% fines, 35% fine sand, 5% rootletts (at waste native contact), medium plasticity, grades from soft to firm	Bentonite Pellets
23	12			0		
24					SILT and FINE SAND (ML-SP): dark grey, wet, 50% fines, 50% fine sand, low plasticity, firm, NATIVE	
25					-weathered bedrock	
26					**ROCHESTER SHALE:** dark grey, moderately hard, several horizontal fractures	
27					**LOCKPORT DOLOMITE: dark grey, calcite filled vugs, several horizontal fractures, occassional angular fracture, fine grained**	Sand Ricci #00
28					Run #1 (24-29) Recovery = 90% RQD = 34%	
29					-fewer horizontal fractures	
30						

WELL_OVM 5976MW2.GPJ (3/01)

PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-2 (cont'd)

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
31						
32						
33						Screen, 2" 0.010-slot PVC
34					-angular fracture Run #2 (29-34) Recovery = 94% RQD = 54%	
35					-occassional vugs	
36					Run #3 (34-36) Recovery = 95%, RQD = 76%	
37						
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44						
45						
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66						

PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York		**Log of Well No. GMX-MW-3**	
BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 6/14/00	DATE FINISHED: 6/15/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		TOTAL DEPTH: 30.5 fbgs	SCREEN INTERVAL: 19 to 29 fbgs
DRILLING EQUIPMENT: CME-75		DEPTH TO WATER: | FIRST | COMPL.	CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES Sample No.	SAMPLES Sample	SAMPLES Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation: fmsl	
1	1		29	0.0	**GRAVELLY SILT (ML):** dark brown, moist, 60% fines, 30% fine gravel, 5% coarse gravel, 5% rootletts, soft, TOPSOIL	Cement
2					**WELL GRADED GRAVEL with SAND and SILT:** light. grey/white, dry, 70% coarse gravel, 20% fine sand, 10% low plasticity fines, loose	
3	2		19	0.0	**WASTE:** dark brown grading to black, moist, 70% fine sand, 10% fine gravel, 10% nonplastic fines, 10% waste (wood, glass, rope, paper), loose	
4					-brown, wood with coarse gravel	
5	3		22	0.2	-black, foundary sand (glass, wood, paint chip)	
6						
7	4		2	0.9		
8						Grout
9	5		7	17.7	-brick, foundary brick, paper, foundary sand, glass	
10						
11	6		9	0.2	-coarse gravel in shoe	
12						
13	7		14	7.0	**WASTE:** black, moist, 60% medium sand, 30% waste (glass, paper, ash), 10% fine gravel, loose	
14					-wet	
15	8		5	5.5	**SILTY SAND (SM):** dark greenish/grey, wet, 70% fine sand, 30% low plasticity fines, soft	
16						
17	9			0.0	-grades to brownish grey, wet, 50% fine sand, 30% low plasticity fines, 10% fine gravel, 10% coarse gravel, soft-firm, 5% reworked waste	Bentonite Pellets
18					-weathered bedrock	
19					**LOCKPORT DOLOMITE:** dark grey, fine grained, moderately hard, closely spaced horizontal fractures, occassional angular to vertical fractures, trace fine sand and fines in fractures	
20						
21						Sand Ricci #00
22						
23					Run #1 (18.5-23.5) Recovery = 96% RQD = 21%	
24					-occassional vugs, cavities, horizontal fractures, and angular fracture	
25					Core Recovery = 99%	
26					RQD = 27% (poor)	Screen, 2" 0.010-slot PVC
27						
28					Run #2 (23.5-28.5) Recovery = 93% RQD = 30%	
29						
30						

PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-3 (cont'd)

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
31					Run #3 (28.5-30.5) Recovery = 93% RQD = 30%	
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PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York		**Log of Well No. GMX-MW-4**	
BORING LOCATION:		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle		DATE STARTED: 6/15/00	DATE FINISHED: 6/16/00
DRILLING METHOD: 1 1/4" HSA/Rock Coring CHQ		TOTAL DEPTH: 35.0 fbgs	SCREEN INTERVAL: 26 to 35 fbgs
DRILLING EQUIPMENT: CME-75		DEPTH TO WATER: | FIRST | COMPL.	CASING:
SAMPLING METHOD: Split-Spoon		LOGGED BY: BCH	
HAMMER WEIGHT: 140 lbs	DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation: fmsl	
1	1		22	0.0	**SANDY ORGANIC SOIL (OL/OH):** dark red/brown, moist, 60% fines, 20% fine sand, 10% fine gravel, 10% rootletts, soft, medium plasticity, TOPSOIL (coarse gravel in shoe)	Cement
2					-black	
3	2		18	0.0	**WASTE:** moist, plastic, paper, wood, glass, loose **GRAVELLY SILT (ML):** dark grey, moist, 60% fines, 30% fine gravel, 5% fine sand, firm	
4						
5	3		14	0.0	**WASTE** foundary sand, glass, moist	
6						
7	4		12	0.0	-black, moist, wood, plastic, glass	
8						
9	5		48	0.7	**WASTE:** dark red/brown, moist, 80% fine sand, 20% fine gravel, firm, with waste (black, moist, plastic, glass, paper, metal, etc.)	
10						Grout
11	6		5	0.3		
12						
13	7		2	0.0		
14						
15	8		30	0.0		
16					-black foundary sand in waste	
17	9		7	0.0		
18					-moist to wet, loose	
19	10		7	0.0		
20					-wet	
21	11		11	0.0		
22						
23	12			0.0	**Organic Soil (OL/OH):** black, moist, 90% fines, 10% rootletts, soft, low plasticity, PEAT	
24						Bentonite Pellets
25					**0.9 to 1.1 DK grey**, moist, 80% fines, 20% fine sand, firm, low plasticity	
26					**SILT WITH SAND (ML):** dark grey, moist, 80% fines, 20% fine sand, low plasticity, firm	
27					**SANDY SILT (ML):** dark grey, wet, 65% fine sand, 35% low plasticity fines, firm	
28					**LOCKPORT DOLOMITE:** dark grey, fine grained, numerous horizontal fractures, few angular and vertical fractures	Sand Ricci #00
29						
30						

PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-4 (cont'd)

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
31					-highly weathered (25.0-25.3) Run #1 (25-30) Recovery = 96% RQD = 16% -occassional vugs, fines and fine sand within some fractures -very fractured, water loss (31-32)	
32						
33						
34						Screen, 2" 0.010-slot PVC
35					-very fractured, water loss (34-35) -Run #2 (30-3) Recovery = 88% RQD = 56%	
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PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-5

BORING LOCATION:	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 10/16/00	DATE FINISHED: 10/16/00
DRILLING METHOD: HSA/HQ core	TOTAL DEPTH: 31.0 fbgs	SCREEN INTERVAL: 21 to 31 fbgs
DRILLING EQUIPMENT: CME-75	DEPTH TO WATER: FIRST 10 ft / COMPL.	CASING:
SAMPLING METHOD: Split-Spoon	LOGGED BY: JSV	
HAMMER WEIGHT: 140 lbs / DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa	REG. NO.

DEPTH (feet)	SAMPLES Sample No.	Sample	Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1	SS-1		14		**ORGANIC SILT (OL/OH):** reddish brown 5YR 3/1, moist, 60% fines, 30% fine sand, 10% organic mattermedium plasticity
2					
3	SS-2		8		**SILT and FINE SAND (SM-ML)** dark reddish brown 5YR 3/4, dry, 45% fine sand, 45% medium plasticity fines, 10% gravel, fill
4					
5	SS-3		10		-dry to moist, concrete pieces
6					
7	SS-4		5		**SAND and WASTE (SW):** reddish black 2.5YR 2.5/1/1, dry to moist, 50% sand, 50% waste material (grass, metal pieces, etc), fill
8					-moist, glass pieces, gravel
9	SS-5		72		
10					
11	SS-6		7		**WELL GRADED GRAVEL with SILT and SAND (GW-GM):** reddish black 2.5YR 2.5/1/1, moist to wet, 50% gravel, 20% sand, 10% low plasticity fines, 20% waste material (glass, metal pieces, etc), fill
12					
13	SS-7		39		**SILT (ML):** dark grey 5YR 3/1, wet to saturated, 90-100% fines, 0-10% fine sand, 0-5% waste material (plastic pieces), high plasticity, fill
14					
15	SS-8		>100		**SILT and CLAY with GRAVEL (CL-ML):** light olive grey 5Y 6/2, dry, 80% fines, 20% gravel, high plasticity, hard, native, [TILL]
16					
17	SS-9		>100		**BEDROCK: LOCKPORT DOLOMITE:** dark grey, fine grained, moderately hard, numerous horizontal fractures, few angular and vertical fractures, occassional calcite filled vugs and viens
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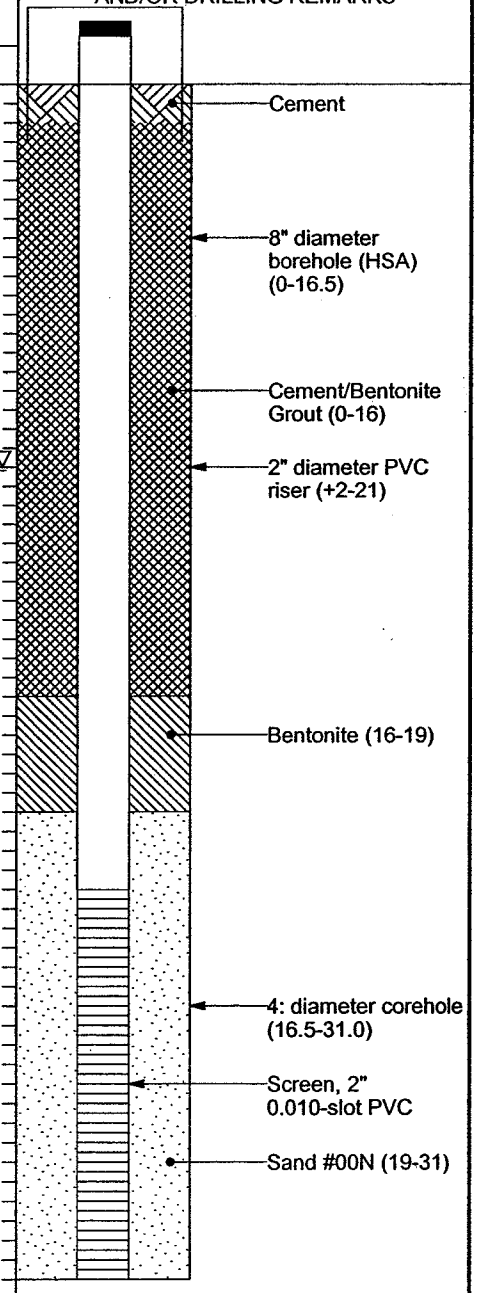

PROJECT: Former Emerson Street Landfill RI/FS Rochester, New York	**Log of Well No. GMX-MW-6**		
BORING LOCATION:	TOP OF RISER ELEVATION: fmsl		DATUM:
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 10/17/00		DATE FINISHED: 10/18/00
DRILLING METHOD: HSA/NX core/rollerbit	TOTAL DEPTH: 42.0 fbgs		SCREEN INTERVAL: fbgs
DRILLING EQUIPMENT: CME-75	DEPTH TO WATER: FIRST 10 ft	COMPL.	CASING:
SAMPLING METHOD: Split-Spoon	LOGGED BY: JSV		
HAMMER WEIGHT: 140 lbs / DROP: 30"	RESPONSIBLE PROFESSIONAL: Richard Frappa		REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1	SS-1		24		**ORGANIC SILT (OL/OH):** dark grey 10YR 4/1, moist, 70% fines, 20% fine sand, 10% organic matter, medium plasticity, soft
2					**SILT and FINE SAND (SM-ML):** dark yellowish brown 10YR 4/4, dry, 40-45% fine sand, 40-45% medium plasticity fines, 10-20% gravel, occassional red brick pieces, firm, fill
3	SS-2		13		
4					
5	SS-3		5		**SILT (ML):** dark bluish grey 2 FOR GLEY 4/1, moist, 75% fines, 10% fine sand, 15% wood pieces, decayed wood, glass pieces, etc, medium plasticity, fill
6					**SILT (ML):** very dark greyish brown 2.5Y 3/2, moist, 80% fines, 10-15% gravel, 5-10% fine sand, medium plasticity, fill
7	SS-4		6		-grades to olive brown 2.5Y 4/3, moist, wood pieces present
8					**SILT with CLAY (ML-CL):** greyish brown 2.5Y 582, moist, 90-95% fines, 5-10% gravel, trace rootlets, high plasticity, fill
9	SS-5		7		**SANDY SILT (ML):** brown and black, wet to saturated, 60% fines, 25% fine sand, 15% gravel, trace wood pieces, high plasticity, soft
10					**SILT and CLAY with GRAVEL (CL-ML):** light grey 2.5Y 5/2, dry, 90-95% fines, 5-10% gravel, trace rootlets, high plasticity, hard, native, [TILL]
11	SS-6		7		**BEDROCK: LOCKPORT DOLOMITE:** dark grey, fine grained, moderately hard, horizontal bedding, numerous horizontal fractures, few angular and vertical fractures, occassional calcite filled vugs and viens
12					-horizontal fractures with secondary mineralization/staining (12.3, 12.4, 12.6, 13.2)
13					-calcite vug, 0.5" diameter
14					
15					
16					
17					
18					
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20					
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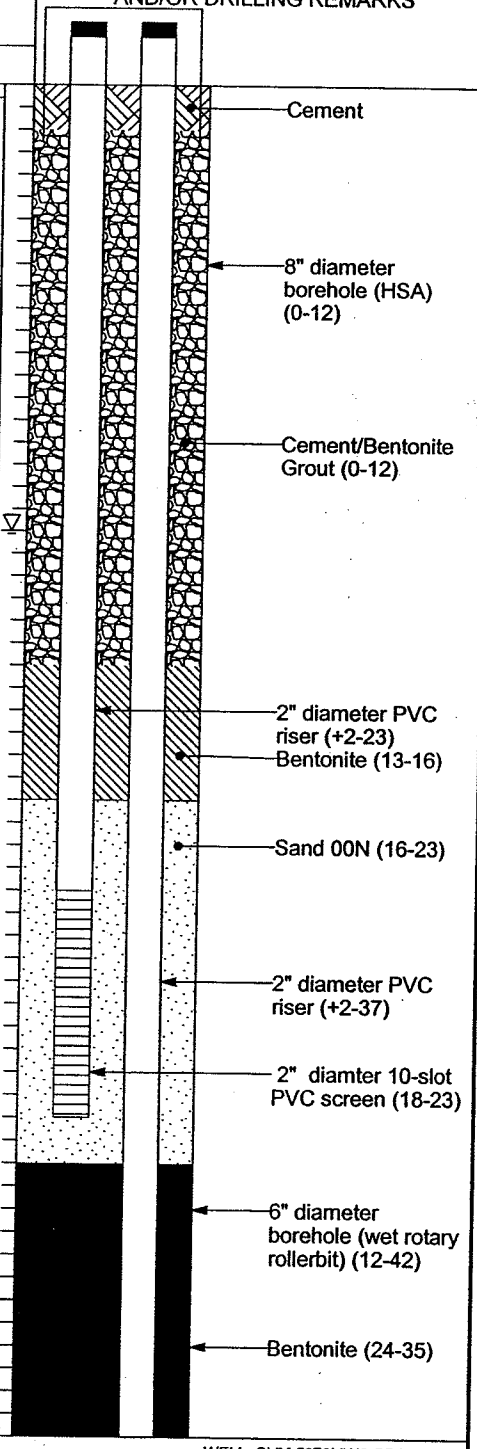
23					
24					-lose 50% of water return
25					
26					
27					-lose all water return briefly
28					
29					
30					



PROJECT: Former Emerson Street Landfill RI/FS
Rochester, New York

Log of Well No. GMX-MW-6 (cont'd)

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
31					-calcite filled vug 1" diameter	
32					-calcite vug, 0.5" diameter, lose all water return -calcite vein along horizontal fracture	
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34						
35						
36						
37						
38						
39					-calcite filled vug/horizontal vein	
40					-horizontal fracture with calcite	
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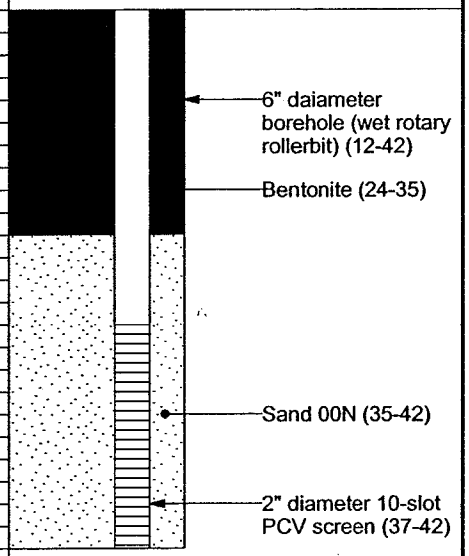


DATE
STARTED 8/16/88
FINISHED 8/17/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-6
SURFACE ELEV. 99.3
G.W. ELEV. 84.19

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER (0/6 6/12 12/18 18/24)	DESCRIPTION	NOTES
	1.8'	SB	1	5 27 30 27	Light brown fine SAND and SILT, trace gravel, dry, grades to brown-gray and becomes dense at 0.5 ft.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr.
5	1.2'	SB	2	5 50/.2 2	At 5.0 ft.: Gray-black SILT, some clay, grading to brown SILT, some sand, very dense, moist at approximately 5.5 ft. [SILT and SAND] 9.0'	
10	0.4' REC 90% RQD 0%	SB NX	3 1	50	Upper 0.5' highly fractured, penetrated by split barrel sampler. Light gray fine textured dolomite, many horizontal and vertical fractures. Some show intense weathering and rock is quite crumbly. Drilling is much easier than in wells towards the South and West, rock is considerably softer and more weathered. Few vugs are present. Water table located at approximately 14.5'. Drilling fluid return was lost during the entire length of Coring. [DOLOMITE BEDROCK] 23.7'	Auger drilling refusal at 9.0 ft. NX core run 1 and 2 drilled on 8/16/88 NX core run 3 drilled on 8/17/88 Coring done with a long ear 5.0 ft. NQ core barrel and a 58-60 carat bit. Rotary drilled with a 3-7/8 in. tri-cone bit from 9.0 ft. - 23.7 ft.
15	REC 96% RQD 8%	NX	2			
20	REC 97% RQD 8%	NX	3			
25						Boring completed at 23.7 ft. G.W. elevation taken on 12/16/88.
30						
35						

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.6

DATE
STARTED 8/15/88
FINISHED 8/16/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-7
SURFACE ELEV. 100.6
G.W. ELEV. 88.02

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER (0/6 6/12 12/18 18/24)	DESCRIPTION	NOTES
				6 17	Light brown SAND and GRAVEL fill, little glass, metal and ash, dry, medium dense. [FILL] 4.0'	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
	1.5'	SB	1	11 4		
5	2.0'	SB	2	10 14 16 23	Brown SILT, some sand, little red sandstone gravel, dry, medium dense to dense	Driller - Rocky Baye Assistant - Shawn Penrod
				8	At 5.5. ft.: Moist	
	1.7'	SB	3	18 50	[SILT] 9.0'	Transition approximated at 4.0 ft. by auger drilling resistance and inspection of cuttings.
10	0.4'	SB	4	50	Weathered bedrock zone 10.0'	HNU = Only reading was 2ppm in Augers at 9.5 ft.
	REC 93% RQD 15%	NX	1		Gray dolomite, many horizontal fractures, two short vertical fractures perpendicular to bedding surfaces, Rock is soft at weathered surfaces to moderately hard. Numerous vugs, some containing white precipitate highly reactive to HCl. Slight drilling fluid loss during run 2. Water Table encountered at approximately 13.5 ft.	Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R meter = 4-6 micro-rem/hr.
15	REC 89% RQD 24%	NX	2			Auger drilling refusal at 10.0 ft. after run 1 NX core run 1 drilled from 9.5 ft. to 14.5 ft. on 8/15/88. NX core run 2 drilled from 14.5 ft. to 17.5 ft. on 8/15/88.
20					[DOLOMITE BEDROCK] 19.5'	Coring was done with a long ear 5 ft. NQ core barrel and a 58-60 caret bit.
25						Rotary drilled with a 3-7/8 in. tri-cone bit from 10.0 ft. to 19.5 ft.
30						Boring completed at 19.5 ft. G.W. elevation taken on 12/16/88.
35						

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.7

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-16S

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Edison Tech. & Occupational Education Center (See Plan)
ELEVATION: 544.02
DATUM: NGVD
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 24.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Advanced augers to 24.0 ft. without split spoon sampling.
10						
15						Notes: 1. No OVA readings above background in the breathing zone. 2. No explosimeter radioactivity meter readings above background in breathing zone. 3. Set 6.0 in. temporary casing to 24.0 ft. 4. Reamed with 3-7/8 in tri-cone rollerbit to 35.0 ft. and set 2.0 in. PVC well. 5. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.
20						
25						Auger Refusal at 24.0 ft. Apparent Top of Competent Rock at 24.0 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 24.0
ROCK CORED (LIN FT): ---
SAMPLES: ---

BORING NO. MW-16S

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-16D

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 3
LOCATION: Edison Tech. and Occupational Education Center (See Plan)
ELEVATION: 544.20
DATUM: NGVD
START: 9 June 1993
FINISH: 14 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 23.7 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		2 6 7 8	S1 24"/24"	0.0 2.0		Medium dense brown coarse to fine sandy SILT, some gravel, with trace glass, plastic, asphalt, and foam rubber, with root fibers from 0-.5 ft., damp. -FILL-
		3 5 18 22	S2 24"/24"	2.0 4.0		Medium dense brown silty GRAVEL, some coarse to fine sand, little clay, dry.
5		8 12 18 28	S3 24"/24"	4.0 6.0	5.8	Medium dense brown coarse to fine SAND, damp. -FILL-
		6 3 5 4	S4 6"/24"	6.0 8.0		Medium dense black ASH, with glass and metal, moist.
		6 13 9 13	S5 6"/24"	8.0 10.0		Loose black ASH, with metal, wood and glass, damp. -FILL-
10		3 5 3 6	S6 4"/24"	10.0 12.0		Medium dense black ASH, with metal, glass, plastic and wood, damp.
		5 6 6 8	S7 2"/24"	12.0 14.0		Loose black ASH, with wood, glass and metal, moist to wet.
15		6 2 4 2	S8 6"/24"	14.0 16.0		Same, except medium dense.
		4 4 2 8	S9 6"/24"	16.0 18.0		Same. -FILL-
		1 6 3 1	S10 1"/24"	18.0 20.0		Same, except with trace brick fragments.
20		3 2 1 1	S11 3"/24"	20.0 22.0	20.0	Same, except trace metal and wood.
		100/.2	S12 1"/2"	22.0 22.2	22.2	Very loose black fine sandy SILT, with organic material, wet. Same. -MARSH DEPOSIT-
25						Moderately hard, highly weathered, gray, fine-grained, dolomitic MUDSTONE. -ROCHESTER FORMATION-
						Auger Refusal at 23.7 ft. Apparent Top of Competent Rock at 23.7 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.7
ROCK CORED (LIN FT):	20.0
SAMPLES:	12S
BORING NO.	MW-16D

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-16D FILE NO. 70352-46 SHEET NO. 2 OF 3

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. OVA readings from sample screening noted as follows:
   S1 = 0 ppm
   S2 = 20 ppm (methane)
   S3 = 10 ppm (methane)
   S4 = 45 ppm (methane)
   S5 = Submitted for laboratory analysis
   S6 = 100 ppm (methane)
   S7 = 30 ppm (methane)
   S8 = 35 ppm (methane)
   S9 = 30 ppm (methane)
   S10 = 10 ppm (methane)
   S11 = 20 ppm (methane)
   S12 = 5 ppm (methane)
   No OVA readings above background in the breathing zone.

2. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

3. Sample S5 submitted for TCLP metals and hazardous characteristics analysis.

4. See Core Boring Report, page 3.

5. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. MW-16D FILE NO. 70352-46 SHEET NO. 3 OF 3

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	2	25.0					Began Coring at 25.0 ft.
	2						Moderately hard, light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color-banded. Trace pits and vugs. Closely to very closely spaced, horizontal, argillaceous partings.
	2						-ROCHESTER FORMATION-
	2						
	2	R1	119/69	99/58	MOD		
30	2						
	2						Smooth, planar, high angle joint from 25.1 ft. to 25.3 ft.
	2						
	2						Rough, planar, vertical joint from 26.8 ft. to 27.0 ft.
	2	35.0					
35	3	35.0					
	3						Intersecting smooth, planar, moderately dipping, and high angle joints at 30.6 ft.
	3						
	3						
	3						
40	3	R2	118/91	98/76	MOD		
	3						
	3						
	3						
	3						
	3	45.0					
45							Bottom of Boring at 45.0 ft.
							Notes:
							1. Lost 1,225 gallons of water during coring and reaming process.
50							
55							
60							

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-17

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: Edison Tech. and Occupational (See Education Center Plan)
ELEVATION: 526.26
DATUM: NGVD
START: 16 June 1993
FINISH: 17 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 15.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		2 10 20 14	S1 24"/24"	0.0 2.0	.5	Loose brown SILT, little coarse to fine sand, trace gravel, damp. -TOPSOIL-
		10 20 20 10	S2 24"/24"	2.0 4.0	4.0	Dense red-brown fine sandy SILT, little coarse to medium sand, trace gravel, dry. -FILL- Same, except damp.
5		11 11 6 11	S3 24"/24"	4.0 6.0	4.5 5.5	Medium dense red-brown fine sandy SILT, little coarse to medium sand, trace organic material, damp. -BURIED SUBSOIL-
		100/.4	S4 5"/15"	6.0 6.4		Same. -FLUVIAL DEPOSITS- Completely to highly weathered, gray, fine-grained, dolomitic MUDSTONE, damp.
		49 100/.2	S5 8"/8"	8.5 9.2		-ROCHESTER FORMATION- Same.
10		26 100/.3	S6 9"/19"	10.0 10.8		Same.
		100/.2	S7 NR	12.0 12.2		No Recovery.
		100/.2	S8 2"/2"	14.0 14.2		Same. -ROCHESTER FORMATION-
15						Auger refusal at 15.0 ft. Apparent top of competent rock at 15.0 ft.
						Notes: 1. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 0 ppm S3 = 10 ppm (methane) S4 = 6 ppm (methane) S5 = 0 ppm S6 = 0 ppm S7 = 0 ppm S8 = 0 ppm No OVA readings above background in the breathing zone. 2. No explosimeter or radioactivity meter readings above back ground from sample screening or in the breathing zone. 3. See Core Boring Report, page 2. 4. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	15.0
ROCK CORED (LIN FT):	10.0
SAMPLES:	8S
BORING NO.	MW-17

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. MW-17 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. — DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	2	15.0					Began coring at 15.0 ft.
	2						Moderately hard, moderately weathered, light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color banded. Trace pits throughout. Closely to very closely spaced, horizontal, argillaceous partings.
	2						-ROCHESTER FORMATION-
	2						
	2	R1	120/59	100/49	MOD		Smooth, planar, low angle joints at 18.8, 18.9, and 19.1 ft.
20	2						
	2						
	2						
	2						
	2						
	2	25.0					
25							Bottom of Boring at 25.0 ft.
							Note:
							1. Lost 300 gallons of water during coring and reaming process.
30							
35							
40							
45							
50							

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-18S

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: PEKO (See Plan)
ELEVATION: 531.84
DATUM: NGVD
START: 25 May 1993
FINISH: 26 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Augers	---	---
INSIDE DIAMETER (IN)	4-1/4	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4/14 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft.

DEPTH (FT)	WELL POINT PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						-FILL-
10						Auger Refusal at 8.0 ft. Apparent Top of Competent Rock at 8.0 ft.
15						Notes: 1. No OVA readings above background in the breathing zone. 2. No explosimeter or radioactivity meter readings above background in the breathing zone. 3. Set 6.0 in. temporary casing to 8.0 ft. 4. Reamed with 3-7/8 in. tri-cone rollerbit to 17.7 ft. 5. Installed monitoring well in completed borehole.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER
5/21/93	1023		19.0	19.0	dry
5/21/93	1400		19.0	19.0	dry

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT): 8.0
ROCK CORED (LIN FT): ---
SAMPLES: ---

BORING NO. MW-18S

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-18D

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: PEKO (See Plan)
ELEVATION: 531.96
DATUM: NGVD
START: 20 May 1993
FINISH: 25 May 1993
DRILLER: K. Busch
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Gus Peck, 750-C
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 7.8 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		6 9 20 26	S1 15"/24"	0.0 2.0		Medium dense brown silty fine SAND, some coarse to medium sand, little gravel, with roots, dry.
		17 43 29 11	S2 13"/24"	2.0 4.0	3.4	Very dense brown coarse to fine SAND, little gravel, little silt, dry. -FILL-
					4.0	4" layer of asphalt, dry. 3" layer of brick, dry. -FILL-
5		6 5 8 15	S3 10"/24"	4.0 6.0		Medium dense brown gravelly coarse to fine SAND, little silt, damp. -GLACIAL TILL-
		6 15 50/.4	S4 14"/17"	6.0 7.4		Very dense brown coarse to fine sandy GRAVEL, little silt, damp. -GLACIAL TILL-
10						Auger Refusal at 7.8 ft. Apparent Top of Competent Rock at 7.8 ft.
15						Notes: 1. See Core Boring Report, page 2. 2. OVA readings from sample screening noted as follows: S1 = 1 ppm (methane) S2 = 0 ppm S3 = 1 ppm (methane) S4 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Installed monitoring well in completed borehole, see Groundwater Monitoring Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	7.8
ROCK CORED (LIN FT):	18.8
SAMPLES:	4S
BORING NO.	MW-18D

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. MW-18D FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 7.9 ft.
	10	7.9					Light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color banded. Trace pits throughout.
	10						-ROCHESTER FORMATION-
10	10						Highly weathered, rough, stained, high angle joint from 7.9 ft. to 9.7 ft.
	10		96	91	MOD	10.5	
	10	R1	45	42			Light to medium gray, fine-grained, thin-bedded, DOLOSTONE, very thinly color-banded. Trace pits throughout. Secondary gypsum seams in closely to very closely spaced partings.
	10						
	10						-LOCKPORT FORMATION-
15	10						
	7						
	7	16.7					Core block at 16.7 ft.
		16.7					
	10						Highly weathered vertical joints from 15.8 ft. to 16.0 ft., and from 16.5 ft. to 16.8 ft.
	10						
	10		118	98	MOD		
20	10	R2	103	86			
	10						
	10						
	10						
	10						-LOCKPORT FORMATION-
25	10						
	10						
	10	26.7					Core block at 26.7 ft.
							Bottom of Boring at 26.7 ft.
							Notes:
							1. Reamed with 5-7/8 in. tri-cone rollerbit from 7.9 ft. to 20.5 ft.
30							2. Set 4.0 in. PVC to 20.0 ft.
							3. Reamed with 3-7/8 in. tri-cone rollerbit from 20.0 ft. to 30.0 ft.
							4. Lost 400 gallons during coring and reaming process.
35							
40							

Data by KPM

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. GW-12
Project No. 576-005

Project Name EMERSON STREET

Client NYSDEC

Driller AMERICAN AUGERS

Monitoring Instrument(s) DOSIMETER, MSA, HNU, CGI

SAMPLE HAMMER

Weight 140 lb

Fall 30 in.

Date 7/27/89 (start) ___ (finish)

Boring Location FIELD SOUTH OF SCHOOL - BEHIND CANON

Total Depth 32

Depth to Water 22.86

Hole Diameter .1'-.3'

Ground Surface Elevation 544.2

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
0-2	3	3	6	8	—	1.3	1		DRY M. DENSE		BROWN SILTY SAND, ROOTS PLANT MATERIAL	
5-7	3	18	33	80	—	.2	2		DENSE MOIST	.5	BROWN - DARK BROWN SILTY SAND BLACK WOOD, SILT - PETROLEUM TYPE ODOR NO HNU DEFLECTION PUMPED WATER IN HOLE FOR SPARK ARRESTING	CGI - 100%
10-12	14	14	24	26	—	.3	3		M. DENSE MOIST		BLACK, CINDERS, ASH, GLASS PLASTIC BAG PAPER PULP INCINERATOR REFUSE (POSSIBLE)	HNU 2-5 PPM UP TO 20 PPM COMPACT
15-17	15	8	8	7	—	.1	4		M. DENSE WET		BLACK GREY MIXED FILL, GRAVEL WOOD - TOO LITTLE RECOVERY FOR COMPLETE DESCRIPTION	
20-22	10	10	8	5	—	0	5		M. DENSE		NO RECOVERY - SPOON ADVANCING THROUGH TRASH - POSSIBLE WIRE	
22-24	10	5	5	30/4	—	.3	6		LOOSE DENSE WET		GREY BROWN MIXED SAND, SILT BROKEN ROCK	
											REFUSAL AT 24.5' HO CORING BEGAN @ 24'	

LAWLER, MATUSKY & SKELLY ENGINEERS

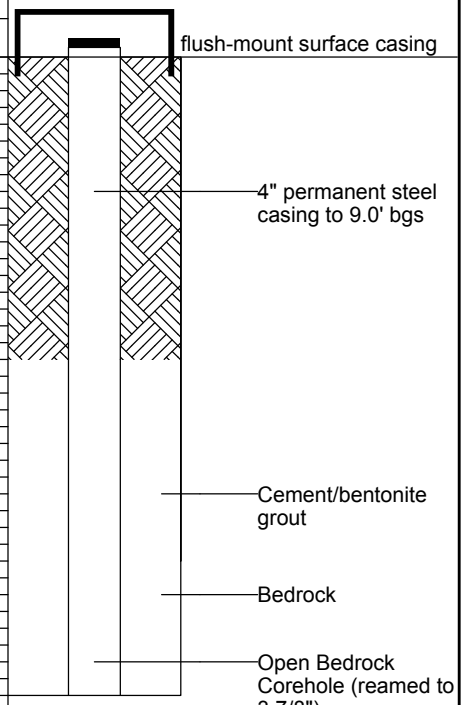
Boringt No. GW-12
Project No. 576-005

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
									3 min	25	FILL TAKING ON WATER NONE RETURNING FROM HOLE STEEL, BRASS, METAL PIECES IN CORE BARREL	
									2.5m	26		
									3 min	27	FULL 5' RECOVERY	
									2.0	28	GREY DOLOMITE - CARBONATE	
									1.5	29	PRECIPITATES BETWEEN	
									1.5	30	FRACTURES	
									2.0	31		
									2.5	32		
											2" PVC MONITOR WELL SET AT 32'	
											10' SCHED. 40 PVC SCREEN	
											#2 SAND TO 18.3'	
											BENTONITE PELLETS TO 17.36'	
											BENTONITE SLURRY TO 3'	
											PORTLAND CEMENT TO SURFACE	
											PROTECTIVE STEEL COLLAR	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York	**Log of Well No. GW-7R**	
BORING LOCATION: 535 Colfax Street (in road)	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothangle Drilling	DATE STARTED: 12/13/10	DATE FINISHED: 12/14/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 19.0 fbgs	SCREEN INTERVAL: 9-19 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: not sampled	LOGGED BY: RM	
HAMMER WEIGHT: 140 / DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation: fmsl	flush-mount surface casing
1–40					**TOPSOIL** Advance air knife without sampling to refusal at approximately 7.0' bgs. Air knife cuttings consist of brown silt with some medium-fine angular gravel, little fine sand. Trace fill material (rubber). Moist throughout. No odors encountered. Advance 4 1/4" HSA to 9.0' bgs. Begin NX Core run at 9.0' bgs. Run #1 Depth: 9.0-14.0 'bgs Rec: 47" (78%) RQD: 0" (0%) Run #2 Depth: 14.0-19.0 'bgs Rec: 53" (88%) RQD: 8" (13%) Lithology: LOCKPORT FORMATION (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common. Rock coring details: *Severely fractured "rubble" zones 9.0-9.2', 11.0-11.2, 15.7-16.7' bgs. *very closely spaced bedding plane joints 9.0-14.0' *planar, vertical joint 10.7-11.5' *irregular vertical joint 13.3-13.6'. *severely fractured rubble zone 17.5-17.7'.	

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B98-1
Job No.. 98149
Page: 1 of 1
Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
Client: Foundation Design, PC
Elevation: 99.8
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. Kahn
Start: 11.03.98
Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information
		11	11						ASPHALT 0'3"
				10	6	21	1	0'0"-2'0"	STONE ROAD BASE 0'6"
									MISC. FILL MATERIAL C/O ASH, GLASS, CINDERS SILT, SAND AND GRAVEL
5									
		50/5				50/5	2	5'0"-5'5"	FILL MATERIAL C/O SILT, SAND AND GRAVEL AND ROCK FRAGMENTS
									AUGURING VERY ROUGH FROM 5' TO 7' REFUSAL 7'0"
10									BORING TERMINATED @ 7'0"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
15									
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B98-2
Job No.: 98149
Page: 1 of 1
Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
Client: Foundation Design, PC
Elevation: 100.1
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. Kahn
Start: 11.03.98
Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
		4	7						TOPSOIL AND MISC. FILL MATERIAL C/O GLASS, ASH,
				15	50/3	22	1	0'0"-1'9"	SILT SAND AND GRAVEL
5									
		50/2				50/2	2	5'0"-5'2"	MISC. FILL MATERIAL C/O CONCRETE, WIRE, ASH, SILT , SAND AND GRAVEL
									AUGURING VERY ROUGH FROM 4' TO 7'6" REFUSAL
									7'6"
10									BORING TERMINATED @ 7'6"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
									MOVED APPROX 8' AND RESTARTED BORE
15									HOLE DESIGNATED AS B98-2A, REFUSAL AT 4'6"
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. ' Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B98-3
Job No.. 98149
Page: 1 of 1
Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
Client: Foundation Design, PC
Elevation: 100.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. Kahn
Start: 11.03.98
Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
		6	7						TOPSOIL AND ORGANIC MATTER WITH FILL MIXED IN
				13	21	20	1	0'0"-2'0"	BRICK, ASH, GLASS, SILT, SAND AND GRAVEL 2'0"
		23	25						
				50/3		75/9	2	2'0"-3'3"	FILL MATERIAL CONSISTING OF BRICK, GLASS, ASH,
5									SILT SAND AND GRAVEL 4'0"
		6	6						MISC. FILL MATERIAL C/O ASH, METAL, SILT, SAND AND
				10	11	16	3	5'0"-7'0"	GRAVEL
		10	6						MISC FILL
				6	8	12	4	7'0"-9'0"	MISC. FILL C/O ASH, METAL AND GLASS
10									
		20	25						
				12	6	37	5	10'0"-12'0"	MISC FILL C/O ASH, METAL, GLASS AND RUBBER
		4	2						
				6	6	8	6	12'0"-14'0"	MISC. FILL C/O ASH, METAL, GLASS ETC.
15									
		8	6						
				5	6	11	7	15'0"-17'0"	NO RECOVERY- BLACK SATURATED
20									
		4	5						
				7	8	12	8	20'0"-22'0"	NO RECOVERY- BLACK SATURATED
									AUGER REFUSAL @ 23'6" 23'6"
25									
									BORING TERMINATED @ 23'6"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. ' Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B98-4
Job No.. 98149
Page: 1 of 1
Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
Client: Foundation Design, PC
Elevation: 100.7
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. Kahn
Start: 11.03.98
Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information
		3	7						TOPSOIL AND ORGANIC MATTER WITH FILL MIXED IN
				14	16	21	1	0'0"-2'0"	BRICK, ASH, GLASS, SILT, SAND AND GRAVEL 2'0"
		14	50/4			64/10	2	2'0"-2'10"	MISC. FILL MATERIAL C/O SLAG, ASH, GLASS, BRICK METAL, WIRE, SILT, SAND AND GRAVEL
5									BURIED ASPHALT LAYER BETWEEN 3'AND 5'
		10	27						MISC. FILL MATERIAL C/O ASH, METAL, SILT, SAND AND
				18	10	45	3	5'0"-7'0"	GRAVEL
		4	3						
				3	3	6	4	7'0"-9'0"	MISC. FILL C/O ASH, METAL AND GLASS
10									
		6	6						
				3	3	9	5	10'0"-12'0"	MISC FILL C/O ASH, METAL, GLASS
		3	2						
				5	4	7	6	12'0"-14'0"	MISC. FILL C/O ASH, METAL, GLASS
15									
		1	1						
				1	1	2	7	15'0"-17'0"	MISC. FILL
20									
		12	18						
				50/4		68/10	8	20'0"-21'4"	ROCK LODGED IN SHOE PIECE
									SPOON AND AUGER REFUSAL @ 21'4"
25									BORING TERMINATED @ 21'4"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B98 5
Job No.. 98149
Page: 1 of 1
Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
Client: Foundation Design, PC
Elevation: 100.5+/- (EST)
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. Kahn
Start: 11.03.98
Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
0									AUGURED THROUGH MISC. FILLS FROM SURFACE TO 7'0"
5									
		27	24						
				22	20	46	1	7'0"-9'0"	MISC. FILL WOOD
10							2	8'0"-9'0"	GRAB SAMPLE FROM AUGERS-- BLACK PULPY WOOD WITH SILT 10'0"
		3	2						
				4	6	6	3	10'0"-12'0"	LOOSE BLACK BROWN SILT, LITTLE FINE TO VERY
		36/0				36/0		13'0"-13'0"	FINE SAND AND ROOTS AND STEMS
									AUGER REFUSAL @ 13'0"
15									BORING TERMINATED @ 13'0"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. ' Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B98 6
Job No.. 98149
Page: 1 of 1
Report Date: 11.03.98

Project: CALVARY AUTOMATION, EMERSON ST, ROCHESTER
Client: Foundation Design, PC
Elevation: 100.5+/- (EST)
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. Kahn
Start: 11.03.98
Completed: 11.03.98

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
									AUGURED THROUGH MISC. FILLS FROM SURFACE TO 5'6", GRINDING FROM 4'10"
5									AUGER REFUSAL @ 5'6"
									BORING TERMINATED @ 5'6"
10									NOTES: ELEVATIONS PROVIDED BY OTHERS AUGER PROBE ONLY- NO SAMPLES TAKEN
15									
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B115

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Edison Tech. and Occupational Education Center (See Plan)
ELEVATION: ---
DATUM: ---
START: 11 June 1993
FINISH: 11 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						6 in. of topsoil.
		7 11 11 19	S1 24"/24"	3.0 5.0		Medium dense brown coarse to fine sandy SILT, some gravel, with glass, metal and brick, damp. -FILL-
5					6.5	
		8 10 11 12	S2 24"/24"	8.0 10.0		Medium dense red-brown fine sandy SILT, some coarse to medium sand, trace gravel, damp. -LACUSTRINE/FLUVIAL-
10						Bottom of Boring at 10.0 ft.
15						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 800 ppm (methane) S2 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S1 submitted for TCLP metals and hazardous characteristics analyses.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B-115

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B117

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: Edison Tech. and Occupational Education Center (See Plan)
ELEVATION: ---
DATUM: ---
START: 8 June 1993
FINISH: 8 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 22.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						2 in. of topsoil.
5		3 3 3 3	S1 5"/24"	3.0 5.0		Loose black ASH, some metal pieces, with glass, moist. -FILL-
10		11 7 7 6	S2 1"/24"	8.0 10.0		Medium dense black ASH, moist to wet. -FILL-
15		2 2 3 12	S3 3"/24"	13.0 15.0		Loose black ASH, with metal, glass and brick, moist to wet. -FILL-
20		3 5 3 5	S4 1"/24"	18.0 20.0		Loose black ASH, with glass, wet. -FILL-
25						Bottom of Boring at 22.0 ft. Auger refusal at 22.0 ft.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	22.0
ROCK CORED (LIN FT):	---
SAMPLES:	4S
BORING NO.	B117

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B117 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 40 ppm (methane) S2 = 18 ppm (methane) S3 = 7 ppm (methane) S4 = 0 ppm No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B118

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: UDC
(See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50 Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 23.4 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		16 11 6 5	S1 6"/24"	3.0 5.0		Medium dense black ASH, with glass, metal slag, trace wood, moist to wet. -FILL-
5						
		46 28 9 12	S2 15"/24"	8.0 10.0		Medium dense black ASH, little gravel, with glass, cinders or coal, metal, ceramic fragments, moist.
10						
		10 12 10 9	S3 15"/24"	13.0 15.0		Medium dense iron-stained black ASH, with cinders, charred wood, and glass, trace metal, damp. -FILL-
15						
		13 10 11 6	S4 10"/24"	18.0 20.0		Medium dense black ASH, with glass, metal, cinders, wet. -FILL-
20					21.5	
		100/.4	S5 5"/5"	23.0 23.4		Very dense gray SILT, with clay seams or pockets, wet. -LACUSTRINE/FLUVIAL-
25						Bottom of Boring at 23.4 ft.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	23.4
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B118

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B118 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 200+ ppm methane
   S2 = 300 ppm methane
   S3 = 1000+ ppm methane
   S4 = 6 ppm methane
   S5 = 0.2 ppm methane (H.S.)
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B119

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Emerson St. R.O.W. (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 11.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		10 11 12 10	S1 4"/24"	3.0 5.0		Medium dense brown coarse to fine sandy GRAVEL, little silt, trace ceramic fragments. -FILL-
5					6.5	
		38 50/.5	S2 12"/12"	8.0 9.0		Hard, highly weathered, gray, fine-grained DOLOSTONE, dry. -LOCKPORT FORMATION-
10						Bottom of Boring at 11.0 ft.
15						
20						
25						

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. No OVA, explosimeter or radioactivity meter readings above background noted from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	11.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B119

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B120

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Edison Tech. and Occupational Education Center (See Plan)
ELEVATION: ---
DATUM: ---
START: 8 June 1993
FINISH: 8 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 14.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						6" of topsoil
		10 14 11 8	S1 6"/24"	3.0 5.0		Medium dense black ASH, some silt and fine sand, with glass, wood and cloth, moist. -FILL-
		5 6 7 10	S2 10"/24"	8.0 10.0		Medium dense black ASH, with brick, metal and glass, wet. -FILL-
		18 100/.5	S3 5"/12"	13.0 14.0	11.5	Moderately hard, highly weathered, gray, dolomitic MUDSTONE. -ROCHESTER FORMATION-

Bottom of Boring at 14.0 ft.

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 80 ppm (methane)
   S2 = 80 ppm (methane)
   S3 = 10 ppm (methane)
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in breathing zone.
4. Samples S1 and S2 submitted for TCLP metals and hazardous characteristics analyses.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	14.0
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B120

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B121

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Batty & Hoyt (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 19.5 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		3 2 1 1	S1 14"/24"	3.0 5.0		Loose black iron-stained ASH with glass, cinders and plastic, dry. -FILL-
5					6.5	
		2 2 2 1	S2 18"/24"	8.0 10.0	8.8	Loose dark gray and brown mottled SILT and ASH, little coarse to fine sand, trace glass, with organic material and buried topsoil. -FILL-
10						Loose gray-brown fine sandy SILT, trace coarse to medium sand and gravel, moist. -FILL-
					11.5	
		3 2 2 3	S3 12"/24"	13.0 15.0		Loose black ASH with glass, cinders and wood, moist. -FILL-
15						Same. -FILL-
		55 42 100/.5	S4 16"/18"	18.0 19.5	18.4	Hard, highly weathered, gray, fine-grainded DOLOSTONE. -LOCKPORT FORMATION-
20					19.5	Bottom of Boring at 19.5 ft.
25						

Notes:
1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 25 ppm methane S2 = 15 ppm methane
   S3 = 20 ppm methane S4 = 28 ppm methane
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	19.5
ROCK CORED (LIN FT):	---
SAMPLES:	4S
BORING NO.	B121

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B122

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: Batty & Hoyt (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 20.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		15 16 9 8	S1 3"/24"	3.0 5.0		Medium dense dark gray-brown ASH and SILT with glass and wood, damp. -FILL-
		7 4 4 3	S2 6"/24"	8.0 10.0		Same. -FILL-
		22 20 4 4	S3 1"/24"	13.0 15.0		Medium dense black ASH with glass, metal slag and fabric, moist. -FILL-
		4 18 24 40	S4 16"/24"	15.0 17.0		Dense black ASH with glass, wood and other organic material, one piece of wire and metal slag, moist. -FILL-
		8 10 10 14	S5 16"/24"	18.0 20.0	18.7	Same. Medium dense gray silty fine SAND, trace clay, wet. -LACUSTRINE/FLUVIAL-
						Bottom of Boring at 20.0 ft.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	20.0
ROCK CORED (LIN FT):	---
SAMPLES:	5S
BORING NO.	B122

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B122 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS

Notes:

1. Backfilled borehole to ground surface with soil cuttings.

2. OVA readings from sample screening noted as follows:
   S1 = 0 ppm
   S2 = 2 ppm methane
   S3 = 15 ppm methane
   S4 = 0 ppm
   No OVA readings above background in the breathing zone.

3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

4. Sample S4 and duplicate were submitted for TCLP metals and hazardous characteristics analyses.

5. Used 3 in. O.D. split-spoon sampler to recover sample for laboratory analysis.

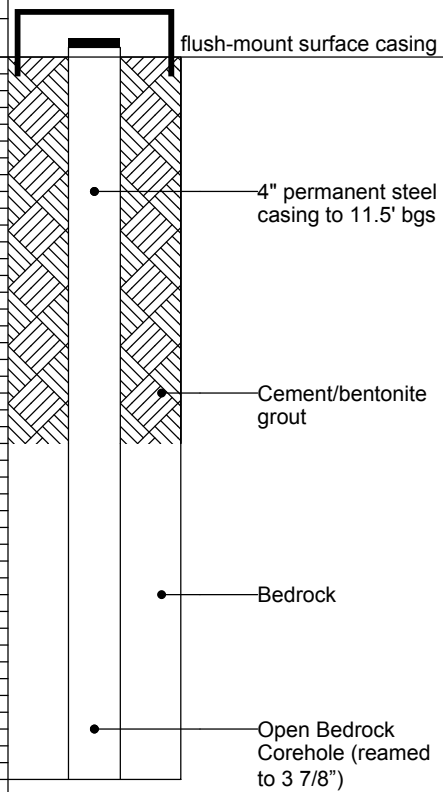
PROJECT: FESL SVI INVESTIGATION	LOCATION "E" **Log of Well No.** LAB-102		
BORING LOCATION: NW Corner of Colfax & Emerson	ELEVATION AND DATUM:		
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 9/27/10	DATE FINISHED:	
DRILLING METHOD: 4 1/4" Ø HSA	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST / COMPL.	CASING:	
SAMPLING METHOD: 4' Acetate sleeves (macrocore)	LOGGED BY: MOE		
HAMMER WEIGHT: 140 # / DROP: Autohammer	RESPONSIBLE PROFESSIONAL: BM		REG. NO.

DEPTH (feet)	Sample No.	Sample	Blows/ Foot	OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
2	1	2.0		0	0-1.8' SP-SM 10YR 5/4 Dry (silt w/ fine sand & little fine subrounded gravel) dry throughout	⇒ brick fragments & coal fragments returned in cuttings 5/4 0 & 5' bgs
4	2				1.8' - weathered shale fragments w/ matrix as above. At, moist, Macrocore refusal @ 5.0' bgs little ~~[illegible]~~ dolomite in sampling shoe	RAD = Bkgd throughout overburden
6			AUGER to 11.5' (arrow)			
8	NA	NA		NA	* Advance 4 1/4" Ø HSA to 11.5' bgs. Augers grinding evenly throughout. Limestone /dolostone fragments returned in cuttings	
10						
12					* set 4" Ø steel casing @ 11.5' bgs (~6.5' into rock)	
14					Begin NX core run @ ' bgs	⇒ Drill rate ~1-1.5 min./ft.
16					Run # 1 11.5 - 21.5' bgs	- loose ~10g of water during core run.
18					REC: ~~9.5~~ (114") /10.0 ⇒ 95%	
					RQD: ~~3.7~~ (43") /9.5' ⇒ ~~39%~~ 36%	- remove ~20g of water with the drill rig moyno pump. water entering corehole after it's pumped dry. Recovering quickly -
20					HARD, grey limestone w/ shale interbeds. Frequent breakage along shale bedding plane partings - Few small (5-10mm) vugs throughout. Few weathered fractures where shale is weathered to clay - Calcite precip. on horiz. fracture @ 17' bgs. No vertical fracturing observed (All appear to be mechanical breaks.	
22						
24						
26						* NX corehole reamed to 3 7/8" Ø with roller bit.
28						

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York			**Log of Well No. LAB-102**	
BORING LOCATION: NW Corner of Colfax and Emerson St intersection			TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling			DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA			TOTAL DEPTH: 21.5 fbgs	SCREEN INTERVAL: 11.5-21.5 fbgs
DRILLING EQUIPMENT: CME 850			DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler			LOGGED BY: MAC	
HAMMER WEIGHT: 140	DROP: 30"		RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1					Brown silt with fine sand and little fine subrounded gravel, trace brick and coal fragments, dry throughout.
2	1		NA	0	
3					
4	2		NA	0	
5					sampler refusal at 5.0' bgs
6					advance 4 1/4" dia HSA to 11.5' bgs through bedrock.
7					
8					
9					Begin NX Core run at 11.5' bgs.
10					
11					Run #1 Depth: 11.5-21.5 'bgs Rec: 114" (95%) RQD: 43" (36%) Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					Rock coring details: *closely space partings 11.5-16' bgs. *short high angle joint at 14.3' *rough vertical joint at 14.5-15' *severely weathered seam at 15.4' *highly fractured zone at 18-18.3' *severely weathered seam at 18.7'.
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



60 Merrackenville St. (East end of lot)

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 105
SHEET 1 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: ~~"H" behind DPT in the weeds~~
GROUND SURFACE ELEVATION DATUM
START DATE: 9/27/10 END DATE:

TYPE OF DRILL RIG: CME truck mtd. ATV
AUGER SIZE AND TYPE: 4.25 -Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS /6"	NO.	DEPTH (FEET)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
1	7, 13, 13, 14	S-1	0-2		1.4		grass and brownish gray silty clay f/c gravel, sand tr. brick (FILL)	11-19 uR/Hr, 0.1 ppm	S
2	5, 6, 5	S-2	2-4		1.3		dark brown clayey SILT, f gravel, SOME wood and c gravel @ 4'	10-13 uR/hr, 0.2 ppm	S
3									
4	4, 2, 2, 4	S-3, 4-6			1.2'	5.8'	medium to dk. gray silt, clay w/ trace black FESL ash	12-19 uR, 23 peaks, 0.4 ppm	S
5									
6	10, 16, 20, 14	S-4	6-8		1.7		all FESL ash black glass cinders f gravel	10-15 uR/hr, 0.2 ppm	
7									
8	12, 5, 20, 6	S-5	8-10		0.8		similar to above metal & ceramics	11-13 uR, 0.2 ppm	
9	4, 24, 80								
10									
11	100/6"	S-6	8-12		1.4		similar to above w/ some gray ash	12-16 uR, 0.1 ppm	
12	20, 16, 21, 31	S-7	12-14		0.6		aa	0.5, 8-10 .4	
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: 10 uR/hr + 0.1 ppm PID background to 15

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.

BORING #

"H" LAB 105

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING "H"
SHEET 2 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER:
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION:
GROUND SURFACE ELEVATION DATUM
START DATE: END DATE:

TYPE OF DRILL RIG:
AUGER SIZE AND TYPE: 4.25 -Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: NX & HQ Water Rotary Coring

H needs

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS /6"	NO.	DEPTH (FEET)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
1	13 12 8 8		14-16		0		14-18 debris in shoes		
2	10 5 5 6		16-18		0		black FESL ash 9-10 MR 0.3-0.4 ppm		
3									
4	5 3		18-20		0.1		black FESL ash	0.2	
5	2 2							8-10 MR	
6	3 5		20-22		0				
7	4 3								
8	1 4		22-24		0.2		saturated black cinders FESL ash plastic	0.2 ppm	
9	4 3							10-12 MR	
10	3 13		24-26					0.3 ppm	
11	10 9							15-20 MR	
12	7 8		26-26.5 27'				saturated black FESL Ash gray clay @ 26.5-27 spoon refusal @ 27' auger refusal @ 27.7'		
13	10 50/0							10-12 MR	
14								0.1 ppm	
15									
16									

3 7/8" Advanced roller bit to 30.0'

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
2" pre-well installed to 30' (15' screen)

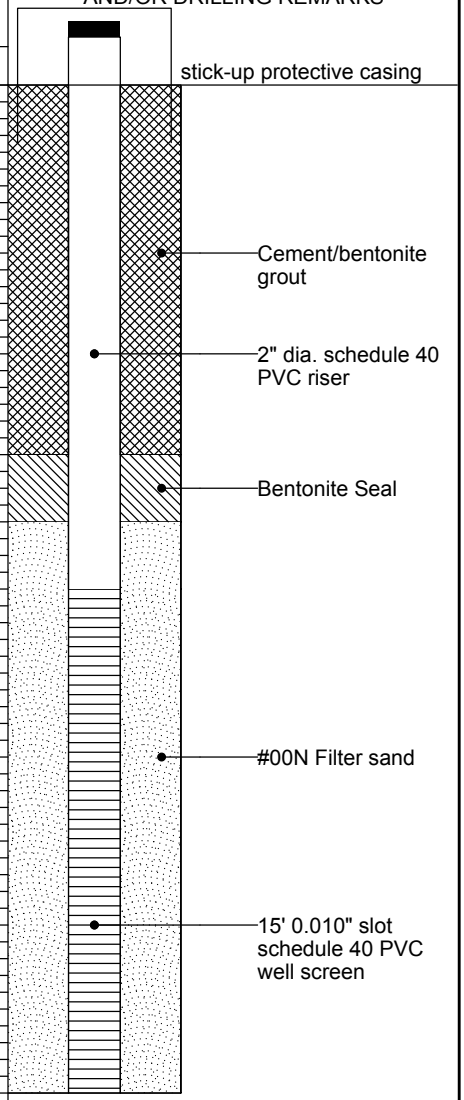
GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE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

BORING #

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York	**Log of Well No. LAB-105**	
BORING LOCATION: 60 McCrackenville Street (East end of lot)	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 27.7 fbgs	SCREEN INTERVAL: 13.9-30.0 fbgs
DRILLING EQUIPMENT: CME 55 ATV	DEPTH TO WATER: / FIRST / COMPL.	CASING: 2" PVC
SAMPLING METHOD: 2" dia. Split Spoons	LOGGED BY: KRM	
HAMMER WEIGHT: 140 / DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1	1		7 13 13 14	0.1	FILL- brownish grey silty clay with fine to coarse gravel and sand. Trace brick.
2					
3	2		5 6 5 4	0.2	
4					
5	3		2 2 4 10	0.4	black FESL ash with glass, clinker and fine gravel at 5.0'.
6					
7	4		16 20 14 12	0.2	
8					
9	5		5 20 6 4	0.2	
10					
11	6		24 80 100/0.6	0.1	
12					
13	7		20 16 21 31	0.5	
14					
15	8		13 12 8 10	0.4	
16					
17	9		8 5 6 5	0.2	
18					
19	10		3 2 2 3	0.2	
20					
21	11		5 4 3 1	0.2	
22					saturated at 22' bgs.
23	12		4 4 3 3	0.2	
24					
25	13		13 10 9 7	0.3	
26	14		8 16 50/0.6	0.1	
27					gray clay between 26.5 and 27' bgs. Spoon and auger refusal at bedrock surface at 27.0' bgs. Advance 3 7/8" roller bit to 30.0' bgs.
28					
29					
30					**LOCKPORT FORMATION** (Penfield Dolostone Member)
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



Log of Well No. LAB-107

PROJECT: FESL SVI Investigation	Log of Well No. LAB-107
BORING LOCATION: ~~[illegible]~~ 1560 Emerson St	ELEVATION AND DATUM:
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 7/28/10 — DATE FINISHED:
DRILLING METHOD: 4¼" Ø HSA	TOTAL DEPTH: — SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST — COMPL. — CASING:
SAMPLING METHOD: 4' Acetate Sleeves	LOGGED BY: MAP
HAMMER WEIGHT: 140# — DROP: Auto	RESPONSIBLE PROFESSIONAL: — REG. NO.

DEPTH (feet)	Sample No.	Sample	~~Blows/Foot~~ RAD	OVM Reading (ppm)	DESCRIPTION — NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl, geo. inter. — Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
2	1	0-2	bkgd	~~0~~	0-1.0' (ML) silt w/ fs & some fine rounded gravel, dry, (topsoil). 1.0'-2.0' Angular LS bedrock gravel within fs/silt matrix (fill) loose, dry throughout.	2
4						4
6	2	5-?	bkgd	0 / 5.0	0-1.0' As; 1.0-2.5'	6
8					dk gray to black silt w/ fine to med sand & gravel, moist, firm, slight petroleum hydrocarbon odor.	8 * sample LAB-107 5-6.5' collected @ 14:00
10	3	2-4	5 / 5 / 3 / 2	0.0	Mixed fill As / No odors	10
12						12
14	4	1.5	5/ / 2	0.0	broken LS bedrock fragments, Gravel to fine-sand size particles, loose, dry. Has Appearance of blasted bedrock (sewer trench?)	14 WEATHERED/ BLASTED ZONE
16						16
18					→ sampler refusal @ 16.0' bgs. Suspect TOR @ 12' bgs due to appearance of blasted rock.	18 4" Ø perm. casing installed @ 18.5'
20					advance 3⅞" Ø roller bit to 19' bgs	20 Begin NX core run @ 19.0' bgs.
22					Run #1 19-29' bgs / REC: 10'/10' = 100% / RQD: 3.8'/10' = 38% — LS/DT: hard gray LS w/ shale interbeds. Frequent breakage along shale partings. No vertical fracturing, few open horizontal fractures throughout. Several small 5-10mm vugs of calcite precipitation throughout	22 Loose vactor. H2O @ 19.5'
24						24 Drill rate ~2 min/ft.
26						26 * Loose ~500 g total during core & roller bitting
28						28 * pump ~500 g from hole after completion

W-1 (12/95)

Project No. | Geomatrix Consultants | Figure

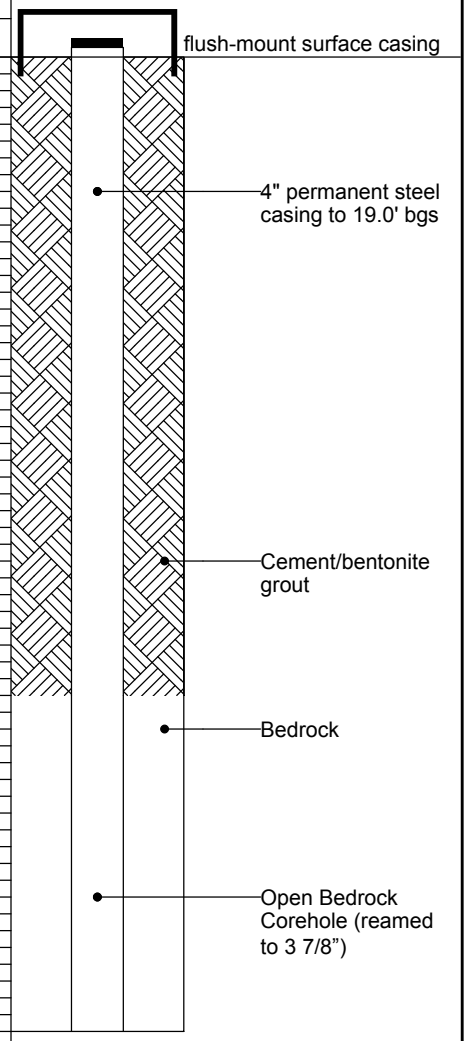
W-1 (Blank)

Rec 118"/98% RQD 84"/70%

127" ctd 206" (wilt)

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York			**Log of Well No. LAB-107**
BORING LOCATION: 1560 Emerson Street		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling		DATE STARTED: 9/28/10	DATE FINISHED: 9/29/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 29.0 fbgs	SCREEN INTERVAL: 19.0-29.0 fbgs
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler		LOGGED BY: MAC	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/ foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1–4	1		NA	0	Topsoil. Silt with fine sand (ML) and some fine, rounded gravel, dry. Angular limestone bedrock gravel within fine sand/ silt matrix (fill), loose, dry throughout.
5–8	2		NA	5.0	Dark gray to black silt with fine to medium sand and gravel (fill). moist, firm, slight petroleum-hydrocarbon type odor at 6.0' bgs.
9–12	3		NA	0	
13–16	4		NA	0	Broken limestone bedrock fragments (gravel to sand-sized particles), loose, dry, appearance of blasted bedrock. sampler refusal at 16.0' bgs.
17–18					Advanced roller bit to 19.0’ bgs
19–20					Begin NX bedrock core at 19.0' bgs.
21–40					Run #1 Depth: 19.0-29.0 'bgs Rec: 118" (98%) RQD: 84" (70%) Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common. Rock coring details: *irregular cracks at 19.8’ bgs *vertical joint at 23.1-23.4’ *severely weathered seam at 26.7’



LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-01
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.2	No Change
				Gravel and Silt			
						0.3	
2		75%			0		
				Ash @ 3 ft Saturated @ 4	0		
	VOC @ 3 ft			ft			
						0.1	
4					0		
				Silty Clay	0		
						0.2	
6		80%			0		
				Refusal @ 7.3	0	0.2	
8					0		
10							
12							
16							
20							

DEPTH (FT) 7.3 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-02
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.2	No Change
				Gravel and Silt			
				Silt		0.2	
2		100%			0		
				Loamy Silt	0		
	VOC @ 3 ft					0.3	
4					0	0.4	
				Loamy Silt	0		
						0.2	
6		100%			0		
				Refusal @ 6.9 ft	0	0.1	
8							
10							
12							
16							
20							

DEPTH (FT) 6.9 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-03
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.1	No Change
				Gravel and Silt			
				Silt		0.3	
2		75%			0		
				Trace Mix Cinders @ 3.5 to 4.5 ft	0		
	VOC & Full from 3.5 to 4.5 feet					0.4	
4					0	0.4	
				Silty Clay	0		
						0.1	
6		90%			0		
				Refusal @ 7.6 ft	0	0.2	
8							
10							
12							
16							
20							

DEPTH (FT) 7.6 ft

NOTES: 10 ft off wall
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-04
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.1	No Change
				Gravel and Silt			
				Silt		0.4	
2		60%			0		
				Silty Clay @ 3 ft	0		
						0.2	
4					0	0.1	
				Silt and gravel 4 ft	0		
						0.1	
6		85%			0		
	VOC @ 7.5 ft			Saturated @ 7 ft Refusal @ 7.8 ft	0	0.1	
8							
10							
12							
16							
20							

DEPTH (FT) 7.8 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-05
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.1	No Change
				Gravel and Silt			
				Sandy Silt 1 to 3 ft		0.1	
2		75%			0		
				Clayey Silt	0		
						0.1	
4					0	0.1	
				Trace Ash and Ciders from 4 to ~6 ft	0		
	VOC @ 4.5ft					0.1	
6		75%			0		
				Silty Clay	0	0.1	
8				Refusal @ 8.4 ft	0	0.1	
10							
12							
16							
20							

DEPTH (FT) 8.4 ft

WATER LEVEL DATA			BOTTOM OF	BOTTOM OF	GROUNDWATER
DATE	TIME	ELASPED TIME	CASING	BORING	ENCOUNTERED

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-06
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.2	No Change
				Clayey Silt			
				Clayey Silt		0.1	
2		60%			0		
				Misc Ash @ ~ 3ft Trace Cinders	0		
	TCLP from 3 to 4.5 ft			@ from 3.5 to 4.5 ft		0.3	
4					0	0.2	
				Silt and gravel	0		
6		85%			0		
				Silty clay	0	0.1	
	VOC @ 7.5 ft						
8				Refusal @ 8 ft			
10							
12							
16							
20							

DEPTH (FT) 8 ft

NOTES: No GW
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-07
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.4	No Change
	Full (1/4)			Silt/ash/gravel/glass/cinders from ~1 to 4 ft			
						0.4	
2	Full (1/4)	40%			0		
	Full (1/4)				0	0.4	
4	Full (1/4)				0	0.1	
				Silt	0		
6	VOC @ 6 ft	35%			0		
				Silt	0	0.1	
					0		
8				Clayey Silt - Moist from 7 to 11.1 ft		0.1	
					0		
10				Refusal @ 11.1 ft	0	0.1	
12							
16							
20							

DEPTH (FT) 8 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-08
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.3	No Change
				Silt and gravel			
						0.4	
2	Full (1/4)	50%			0		
				Distinct layer of cinders/slag @ 3 ft to 4 ft	0		
						0.3	
4	Full (1/4)				0	0.3	
	VOC @ 4 ft			Trace silt/gravel/cinders from 4 ft to 6 ft	0		
6		75%			0		
				Clayey Silt 6 to 8 ft	0	0.2	
	Full (1/4)						
					0		
8				Trace silt/gravel/cinders from 8 ft to 9.6 ft			
				Refusal @ 9.6 ft		0.2	
	Full (1/4)	100%			0		
10							
12							
16							
20							

DEPTH (FT) 9.6 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-09
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012 END DATE

DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.3	No Change
						0.3	
2		75%			0		
				Trace Silt/gravel/ash/cinder from 0.5 to 10 ft	0		
						0.3	
4					0	0.3	
					0		
6		100%			0		
					0	0.3	
8	VOC @ 8 ft				0		
						0.2	
					0		
10		60%					
				Clayey Silt from 10 to 12.6 ft	0	0.2	
12							
				Refusal @ 12.6 ft	0	0.2	
		100%					
16							
20							

DEPTH (FT) 12.6 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-10
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012 END DATE

DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.3	No Change
				Silt and gravel			
				Crushed stone		0.2	
2		60%			0		
				Clayey Silt	0		
						0.2	
4						0.2	
	VOC @ 4.5 ft			Clayey Silt - PID hits around 4.5 feet	6		
					31		
					13.6		
6		85%			0		
				Silt and gravel	0	0.1	
8				Refusal @ 7.7 ft		0.1	
10							
12							
16							
20							

DEPTH (FT) 7.7 ft

NOTES: No GW
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-11
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012 END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.1	No Change
				Silty Clay and stone			
						0.1	
2		70%			0		
					0		
						0.1	
4					0	0.1	
					0		
6		90%			0		
					0	0.1	
8				Silty clay and stone - moist at 9 ft	0		
						0.1	
					0		
10		100%					
	VOC @ 11ft			Refusal @ 11.1 ft	0	0.1	
12							
16							
20							

DEPTH (FT) 11.1 ft

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-12
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.1	No Change
				Silty and stone			
						0.2	
2		40%			0		
					0		
						0.1	
4					0	0.2	
					0		
6		25%			0		
					0	0.3	
					0		
8	VOC @ 8 ft			Silty and stone - moist at 8 ft			
						0.1	
					0		
10		90%					
				Refusal @ 10.7 ft	0	0.1	
12							
16							
20							

DEPTH (FT) 10.7 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: **ET-SB-13**
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012 END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.4	No Change
	Full (1/4)			Trace Silt/ash/cinders to 5 ft			
						0.5	
2	Full (1/4)	80%			0		
					0		
	Full (1/4)					0.3	
4					0	0.4	
	Full (1/4)				0		
6	VOC @ 6 ft	80%			0		
				Silt 5 to 7 ft	0	0.3	
					0		
8				Silty clay 7 to 10.9 ft		0.3	
					0		
10		60%		Refusal @ 10.9 ft	0	0.3	
12							
16							
20							

DEPTH (FT) 10.9 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-14
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Grass	0	0	No Change
				Loamy Silt			
						0.2	
2		55%			0		
				Stone/silt/trace cinders from 2 to 4 ft	0		
						0.1	
4					0	0	
	VOC @ 4.5ft				0		
6		80%			0		
				clayey silt and stone	0	0	
8					0		
						0.2	
					0		
10		100%					
				Refusal @ 10.8 ft	0	0	
12							
16							
20							

DEPTH (FT) 10.8 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-15
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Grass	0	0.1	No Change
	Full (1/4)						
						0.2	
2		95%			0		
				Silt and stone with ash and trace cinders mixed sporatically from 0.5 to 10.5 ft	0		
						0.2	
4	Full (1/4)				0	0.1	
					0		
6		95%			0		
					0	0.1	
	Full (1/4)				0		
8							
						0.2	
	VOC @ 9.5ft				0		
10		95%					
				Clay @ 10.5 ft - moist just above the clay	0	0.2	
	Full (1/4)						
12							
				Refusal @ 11.6 ft	0	0.2	
16							
20							

DEPTH (FT) 11.6 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-16
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012 END DATE

DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.2	No Change
				Silt and gravel			
	Full (1/4)					0.2	
2		40%			0		
					0		
						0.3	
4	Full (1/4)				0	0.2	
				Saturated Silt @ 4 ft	0		
	VOC @ 5ft						
	Full (1/4)						
6		75%			0		
					0	0.2	
	Full (1/4)				0		
8				Refusal @ 7.1 ft			
						0.2	
					0		
10							
12							
16							
20							

DEPTH (FT) 7.1 ft

NOTES: GW @ 4ft
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: **ET-SB-17**
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012 END DATE

DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Grass	0	0.1	No Change
	VOC @ 1.5ft			Mostly silt with some gravel and trace cinders			
	TCLP 1.5 to 4					0.1	
2		95%			0		
					0		
						0.3	
4					0	0.3	
				Mostly silt with some gravel and trace cinders	0		
6		90%			0		
					0	0.2	
					0		
8				Refusal @ 7.7 ft			
						0.1	
					0		
10							
12							
16							
20							

DEPTH (FT) 7.7 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: **ET-SB-18**
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012 END DATE

DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.1	No Change
				Silt and gravel			
						0.1	
2		80%			0		
					0		
						0.2	
4	VOC @ 4ft				0	0.2	
				Small amount of trace cinder @ 4 ft	0		
6		100%			0		
					0	0.2	
8				Refusal @ 6.4 ft	0		
						0.1	
					0		
10							
12							
16							
20							

DEPTH (FT) 6.4 ft

NOTES: No Moisture
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-19
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.1	No Change
				Silt and gravel			
						0.1	
2		50%			0		
					0		
						0.2	
4	Full (1/4)				0	0.2	
				Clayey silt with trace cinders from 4 to 6 ft	0		
6	Full (1/4)	60%			0		
	VOC @ 6.5ft			Silt and gravel	0	0.3	
					0		
8	Full (1/4)			Silt and gravel			
						0.3	
	Full (1/4)				0		
						0.2	
10		100%		Refusal @ 9.1 ft			
12							
16							
20							

DEPTH (FT) 9.1 ft

NOTES: No moisture
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-20
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/11/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Grass	0	0.1	No Change
				Gravel			
						0.1	
2	VOC @ 2ft	50%			0		
				Silt and stone from 1 to 9 ft	0		
						0.2	
4					0	0.2	
					0		
6		60%			0		
					0	0.1	
8				Trace cinders at approximately 9 ft	0		
						0.2	
					0		
						0.1	
10		100%		Clayey Silt @ 10 ft Refusal @ 10.5 ft			
12							
16							
20							

DEPTH (FT) 10.5 ft

NOTES: Moist @ 8 ft
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: **ET-SB-21**
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/12/2012
DATUM:
END DATE

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0	Full (1/4)			Grass	0	0.1	No Change
	Full (1/4)			Silt			
	Full (1/4)						
	Full (1/4)			Cinders ~ 1.5 ft		0.1	
2		50%			0		
				Misc trace cinders and silt from 2 to 6 ft	0		
						0.2	
4					0	0.2	
					0		
6		60%			0		
				Moist silt from 6 to 11.2 ft	0	0.3	
8	VOC @ 8 ft				0		
						0.1	
					0		
						0.1	
10		100%		Refusal @ 11.2 ft			
12							
16							
20							

DEPTH (FT) 11.2 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: **ET-SB-22**
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/12/2012
END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Concrete	0	0.1	No Change
				Silt with misc. stone			
						0.2	
2		25%			0		
					0		
						0.2	
4	VOC @ 4ft				0	0.2	
				Silt with misc. stone	0		
6	TCLP 4 to 8ft	55%			0		
					0	0.1	
					0		
8						0.1	
					0		
						0.2	
10		50%		Refusal @ 11.2 ft			
12							
16							
20							

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

DEPTH (FT) 11.2 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: **ET-SB-23**
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/12/2012 END DATE

DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.2	No Change
				Silt and Gravel			
						0.2	
2		75%			0		
				Sand @ ~ 2.8 ft	0		
						0.2	
4					0	0.1	
				Refusal @ 3.2 ft	0		
6							
8							
10							
12							
16							
20							

DEPTH (FT) 3.2 ft

NOTES: No sample
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-24
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial
BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/12/2012
DATUM:
END DATE

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push
DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0	No Change
	Full (1/4)			Silt and gravel			
				Silt and trace cinders @ ~ 2ft to 8 ft		0	
2		60%			0		
					0		
	Full (1/4)					0.1	
4					0	0.2	
					0		
	Full (1/4)						
6		85%			0		
					0	0.1	
	Full (1/4)						
					0		
8	VOC @ 8 ft			Silt (moist) @ 8 ft			
						0.1	
					0		
						0.1	
10		50%		Refusal @ 8.5 ft			
12							
16							
20							

DEPTH (FT) 8.5 ft

NOTES:
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-25
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012 END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0	No Change
				Silt and gravel			
				Silt		0	
2		50%			0		
				Dark stained silt and gravel - PID @ ~ 3ft	1.3		
					7.8	0.2	
	Full @ 3ft				0.2		
4						0.2	
				Silt and stone	0		
6		100%			0		
					0	0.1	
8				Refusal @ 7.7 ft		0.2	
10							
12							
16							
20							

DEPTH (FT) 7.7 ft

NOTES: No GW
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
ENVIRONMENTAL ENGINEERING CONSULTANTS

PROJECT
Edison Tech

BORING: ET-SB-26
SHEET 1 OF OF
JOB:
CHKD BY:

CONTRACTOR: LaBella
DRILLER: Trec
LABELLA REPRESENTATIVE: Jason Jaskowial

BORING LOCATION: Rochester, NY
GROUND SURFACE ELEVATION
START DATE: 12/10/2012 END DATE
DATUM:

TYPE OF DRILL RIG: Track Mount
AUGER SIZE AND TYPE:
OVERBURDEN SAMPING METHOD: Direct Push

DRIVE SAMPLER TYPE:
INSIDE DIAMETR:
OTHER:

DEPTH	SAMPLE DEPTH	SAMPLE NO. AND RECOVERY	STRATA CHANGE	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	Radiation (uR/hr)	Gases (See notes)
0				Asphalt	0	0.1	No Change
				Silt and gravel			
				Silt		0.1	
2		50%			0		
				Dark stained silt and gravel @ ~ 3ft	0		
						0.2	
4						0.2	
				Silt and stone	0		
6		100%			0		
					0	0.1	
8				Refusal @ 8.1 ft		0.2	
10							
12							
16							
20							

DEPTH (FT) 8.1 ft

NOTES: No sample
CH4 = 0%
CO = 0 ppm
H2S = 0 ppm

WATER LEVEL DATA			BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME	ELASPED TIME			

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXMATE 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 OCCURE DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE

BORING:

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT
Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: **B - 1**
SHEET 1 OF 1
JOB: **210173**
CHKD BY: --

CONTRACTOR: DDS Environmental
DRILLER: Eric Winters
LABELLA REPRESENTATIVE: MFP
BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: 29-Oct-2012 END DATE: 29-Oct-2012
TIME: TO
DATUM:

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 1.8-inch
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	3.2			Topsoil		0	
			0.2	Brown SILT, little f Sand, moist, no odor	0		
2			2.3	Gray to Black SILT and Cinders, moist, petroleum odor	10	2	
4						4	
	1.0	Grab-4' Comp-2.5'-5'			17.2		
6				**Bottom of Boring at 5 Feet Below the Ground Surface**		6	
8						8	
10						10	
12						12	
14						14	
16						16	

NOTES:

WATER LEVEL DATA			DEPTH (FT)		
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
---	---	---	---	5.0	no

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

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

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT
Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: B - 2
SHEET 1 OF 1
JOB: 210173
CHKD BY: --

CONTRACTOR: DDS Environmental
DRILLER: Eric Winters
LABELLA REPRESENTATIVE: MFP
BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: 29-Oct-2012 END DATE: 29-Oct-2012
TIME: TO
DATUM:

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 1.8-inch
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	3.2			Topsoil		0	
			0.2	Brown SILT, little f Sand, moist, no odor	0		
			1.0	Dark Brown SILT, intermixed with glass and cinders, petroleum odor	2.3		
2				-increasing amount of cinders from 2'-5'		2	
					8		
4						4	
	1.0	Grab-4' Comp-1'-5'			10		
6				**Bottom of Boring at 5 Feet Below the Ground Surface**		6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

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

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

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT
Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: **B - 3**
SHEET 1 OF 1
JOB: **210173**
CHKD BY: --

CONTRACTOR: DDS Environmental
DRILLER: Eric Winters
LABELLA REPRESENTATIVE: MFP
BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: 29-Oct-2012 END DATE: 29-Oct-2012
TIME: TO
DATUM:

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 1.8-inch
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	3.2			Topsoil		0	
			0.2	Brown SILT, little f Sand, moist, no odor	0		
			1.2	Brown SILT and mf SAND, intermixed with glass pieces, and trace amounts of ash and cinders, petroleum odor	3.5		
2						2	
			2.4	Dark Brown to Black SILT and SAND, intermixed with Cinders, some Glass, little Ash, petroleum odor	9.7		
4						4	
	1.0	Grab-4' Comp-1'-5'			18.4		
6				**Bottom of Boring at 5 Feet Below the Ground Surface**		6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

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

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

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT
Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: **B - 4**
SHEET 1 OF 1
JOB: **210173**
CHKD BY: --

CONTRACTOR: DDS Environmental
DRILLER: Eric Winters
LABELLA REPRESENTATIVE: MFP
BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: 29-Oct-2012 END DATE: 29-Oct-2012
TIME: TO
DATUM:

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 1.8-inch
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	2.5			Topsoil		0	
			0.2	Brown SILT, little f Sand, moist, no odor	0		
			1.2	Brown to Dark Brown SILT, little f Sand, intermixed with glass, cinders, and ash	0.2		
2						2	
					1.4		
		Grab-2.5'					
		Comp-1'-2.5'					
4				**Bottom of Boring at 2.5 Feet Below the Ground Surface**		4	
6						6	
8						8	
10						10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

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

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

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT
Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: **B - 5**
SHEET 1 OF 1
JOB: **210173**
CHKD BY: --

CONTRACTOR: DDS Environmental
DRILLER: Eric Winters
LABELLA REPRESENTATIVE: MFP
BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: 29-Oct-2012 END DATE: 29-Oct-2012
TIME: TO
DATUM:

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 1.8-inch
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	2.9			Topsoil		0	
			0.2	Brown SILT, little f Sand, moist, no odor	0		
			1.1	Brown to Dark Brown SILT and mf SAND, intermixed with glass, trace amounts of cinders and ash	2.3		
2						2	
			2.2	Dark Brown to Gray SILT and mf SAND, intermixed with glass, ciners, little ash	8		
4						4	
	1.2	Grab-6' Comp-1'-9'			10		
6						6	
8						8	
	0.2						
10				**Bottom of Boring at 9 Feet Below the Ground Surface**		10	
12						12	
14						14	
16						16	

WATER LEVEL DATA			DEPTH (FT)			NOTES:
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
---	---	---	---	5.0	no	

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

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

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

PROJECT
Waste Characterization Sampling
Parking Lot Expansion - ValTech
1667 Emerson Street
Rochester, New York

BORING: **B - 6**
SHEET 1 OF 1
JOB: **210173**
CHKD BY: --

CONTRACTOR: DDS Environmental
DRILLER: Eric Winters
LABELLA REPRESENTATIVE: MFP
BORING LOCATION:
GROUND SURFACE ELEVATION
START DATE: 29-Oct-2012 END DATE: 29-Oct-2012
TIME: TO
DATUM:

TYPE OF DRILL RIG: Track Mounted Geoprobe 54LT
AUGER SIZE AND TYPE: NA
OVERBURDEN SAMPLING METHOD: Direct Push
DRIVE SAMPLER TYPE: Macrocore
INSIDE DIAMETER: 1.8-inch
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY (FEET)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID / FID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	2.5			Topsoil		0	
			0.2	Brown SILT, little f Sand, moist, no odor	0		
			1.0	Brown to Dark Brown SILT, little f Sand, intermixed with glass, cinders, and ash	0		
2						2	
		Grab-2.5'			0		
		Comp-1'-2.5'					
4				**Bottom of Boring at 2.5 Feet Below the Ground Surface**		4	
6						6	
8						8	
10						10	
12						12	
14						14	
16						16	

NOTES:

WATER LEVEL DATA			DEPTH (FT)		
DATE	TIME	ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
---	---	---	---	5.0	no

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

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

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B01-1
Job No.. 302
Page: 1 OF 1
Report Date: 4/23/01

Project: PRINTING METHODS INC.,EMERSON ST.
Client: FOUNDATION DESIGN PC
Elevation: ~~536.8~~ 539.8
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 4/23/01
Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	Sample		Soil and Rock Information
0		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		2	7						TOPSOIL AND ORGANIC MATTER 0'6"
				9	11	16	1	0'0"-2'0"	MISC. FILL MATERIAL C/O MOIST CINDERS,
		10	18						GLASS, SILT, SAND & GRAVEL
				18	16	36	2	2'0"-4'0"	MISC FILL MOIST (CONCRETE NOTED) HEAVY FILL
5		32	50/3			82/8	3	4'0"-4'9"	FILL MATERIAL SILT, SAND & GRAVEL DRY
		50/5				50/5	3	6'0"-6'5"	VERY DENSE BROWN DRY F-VF SAND, SOME C-F
									GRAVEL, LITTLE SILT (POSSIBLE FILL) 6'5"
									(AUGER REFUSAL @ 6'6") SEE NOTES
10									
									BORING TERMINATED @ 8'6"
15									NOTES: ELEVATIONS PROVIDED BY OTHERS
									DRILLED TWO ADDITIONAL BORINGS IN
									VICINITY TO VERIFY REFUSAL (5' AND 6'1" RESPECT-
									IVLY) GRINDING SMOOTH FROM 4'-6'1" ACTED LIKE
20									BEDROCK
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B01-2
Job No.. 302
Page: 1 OF 1
Report Date: 4/23/01

Project: PRINTING METHODS INC.,EMERSON ST.
Client: FOUNDATION DESIGN PC
Elevation: ~~533.05~~ 536.1
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 4/23/01
Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
		40	28						ASPHALT 0'3"
				15	17	45	1	0'0"-2'0"	MISC. FILL MATERIAL C/O MOIST CINDERS, ASH, GLASS, SILT, SAND & GRAVEL
		11	7						
				6	7	13	2	2'0"-4'0"	MISC FILL SATURATED (SLAG NOTED)
5		3	3						
				2	2	5	3	4'0"-6'0"	LOOSE FILL SATURATED
		6	4						
				3	4	7	4	6'0"-8'0"	LOOSE FILL SATURATED
		2	3						
10				3	3	6	5	8'0"-10'0"	LOOSE SATURATED PROBABLE FILL 9'6"
		1	4						LOOSE GREY BROWN SATURATED SILT AND FINE
				5	6	9	6	10'0"-12'0"	TO VERY FINE SAND, LITTLE ORGANIC MATTER
		5	7						
				8	11	15	7	12'0"-14'0"	FIRM GREY SATURATED
15		8	9						
				9	50/3	18	8	14'0"-15'9"	FIRM GREY SATURATED 15'9"
									(SPOON BOUNCING @ 15'9")
20									
									BORING TERMINATED @ 15'9""
									NOTES: ELEVATIONS PROVIDED BY OTHERS
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B01-3
Job No.. 302
Page: 1 OF 1
Report Date: 4/23/01

Project: PRINTING METHODS INC.,EMERSON ST.
Client: FOUNDATION DESIGN PC
Elevation: ~~533.18~~ 536.2
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 4/23/01
Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
									ASPHALT 0'2"
		6	3						CONCRETE 0'8"
				3	2	6	1	1'0"-3'0"	CRUSHED STONE 1'0"
		2	1						MISC FILL C/O GLASS, ASH, CINDERS, BRICK, SILT
5				1	1	2	2	3'0"-5'0"	SAND AND GRAVEL
		1	1						MISC. FILL SATURATED
				1	23	2	3	5'0"-7'0"	MISC FILL SATUARED 6'6"
									LOOSE MUSTARD BROWN SATURATED SILT, SOME
									VERY FINE SAND
10									AUGERED TO REFUSAL @ 8'2"
									BORING TERMINATED @ 8'2"
15									NOTES: ELEVATIONS PROVIDED BY OTHERS
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B01-4
Job No.. 302
Page: 1 OF 1
Report Date: 4/23/01

Project: PRINTING METHODS INC.,EMERSON ST.
Client: FOUNDATION DESIGN PC
Elevation: ~~533.72~~ 536.8
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 4/23/01
Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

0	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	depth	Soil and Rock Information
		5	6						TOPSOIL AND ORGANIC MATTER 0'3"
				7	7	13	1	0'0"-2'0"	MISC. FILL MATERIAL C/O MOIST CINDERS, ASH,
		17	11						GLASS, SILT, SAND & GRAVEL
				14	14	25	2	2'0"-4'0"	MISC FILL MOIST
5		5	5						
				3	4	8	3	4'0"-6'0"	LOOSE FILL SATURATED (POOR RECOVERY) 6'0"
		2	2						LOOSE BLCK GREY SATURATED MEDIUM TO FINE
				2	4	4	4	6'0"-8'0"	SAND, SOME SILT AND CLAY AND M-F GRAVEL 8'4"
		5	50/0					8'0"-8'5"	ROCK FRAGMENTS 8'5"
10									(AUGER REFUSAL @ 8'6")
									BORING TERMINATED @ 8'6"
15									NOTES: ELEVATIONS PROVIDED BY OTHERS
20									
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B01-5
Job No.: 302
Page: 1 OF 1
Report Date: 4/23/01

Project: PRINTING METHODS INC.,EMERSON ST.
Client: FOUNDATION DESIGN PC
Elevation: ~~536.76~~ 539.8
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 4/23/01
Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler 0"/6"	6"/12"	12"/18"	18"/24"	N	Sample No.	Sample depth	Soil and Rock Information
0		4	5						TOPSOIL AND ORGANIC MATTER & FILL MIX 0'9"
				11	8	16	1	0'0"-2'0"	MISC. FILL MATERIAL C/O MOIST CINDERS, ASH, GLASS, CONCRETE SILT, SAND & GRAVEL
		11	11						
				9	6	20	2	2'0"-4'0"	MISC FILL SATURATED
5		7	3						
				3	4	6	3	4'0"-6'0"	LOOSE FILL SATURATED (POOR RECOVERY)
		5	4						
				3	2	7	4	6'0"-8'0"	LOOSE FILL SATURATED
		5	7						
10				6	4	13	5	8'0"-10'0"	NO RECOVERY (BASKET IN USE)
		4	4						
				7	9	11	6	10'0"-12'0"	MISC. FILL SATURATED 12'6"
		25	50/4			75/10	7	12'0"-12'10"	VERY DENSE BROWN WET FINE TO VERY FINE SAND AND SILT, SOME ROCK FRAGMENTS 12'10"
15									(SPOON BOUNCING @ 12'10")
20									
25									BORING TERMINATED @ 12'10"
30									NOTES: ELEVATIONS PROVIDED BY OTHERS
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt Ea. Blow

Target Drilling Company
1850 Lakeville Road
Avon, New York 14414

Test Boring No.: B01-6
Job No.. 302
Page: 1 OF 1
Report Date: 4/23/01

Project: PRINTING METHODS INC.,EMERSON ST.
Client: FOUNDATION DESIGN PC
Elevation: ~~536.83~~ 539.9
Water Level - Casing In:
Below Surface - Casing Out:

Geologist:
Driller: S. KAHN
Start: 4/23/01
Completed: 4/23/01

Seasonal and climatic changes may alter observed water levels.

	C	Blows on Sampler				N	Sample		Soil and Rock Information
0		0"/6"	6"/12"	12"/18"	18"/24"		No.	depth	
		4	8						TOPSOIL AND ORGANIC MATTER 0'3"
				9	9	17	1	0'0"-2'0"	MISC. FILL MATERIAL C/O MOIST CINDERS, ASH,
		9	8						GLASS, WOOD, METAL, SILT, SAND & GRAVEL
				9	6	17	2	2'0"-4'0"	MISC FILL MOIST
5		10	7						
				7	5	14	3	4'0"-6'0"	MISC. FILL MOIST
		2	1						
				3	4	4	4	6'0"-8'0"	NO RECOVERY
		4	4						
10				3	4	7	5	8'0"-10'0"	LOOSE MISC. FILL SATURATED 9'6"
		5	12						LOOSE MUSTARD BROWN WET SILT, SOME VERY
				13	13	25	6	10'0"-12'0"	FINE SAND
		17	15						FIRM BROWN WET 12'0"
				13	13	28	7	12'0"-14'0"	COMPACT BROWN WET SILT AND FINE TO VERY
15		13	14						FINE SAND , LITTLE MEDIUM TO FINE GRAVEL
				17	20	31	8	14'0"-16'0"	COMPACT BROWN MOIST TO WET
		16	20						
				29	52	49	9	16'0"-18'0"	DENSE RED BROWN MOIST
		38	58						
20		90/6		55	55	108	10	18'0"-20'0"	VERY DENSE RED BROWN MOIST 20'0"
									(SPOON BOUNCING @ 20'0")
									BORING TERMINATED @ 20'0"
									NOTES: ELEVATIONS PROVIDED BY OTHERS
25									
30									
35									

N=No. of Blows to 2" Spoon 12" with 140 lb. wt. Ea. Blow
N=No. of Blows to Drive Spoon with lb. wt. Ea. Blow

FOUNDATION DESIGN, P.C.
SOIL • ROCK • EXPLORATION • INSTRUMENTATION

Test Pit Log

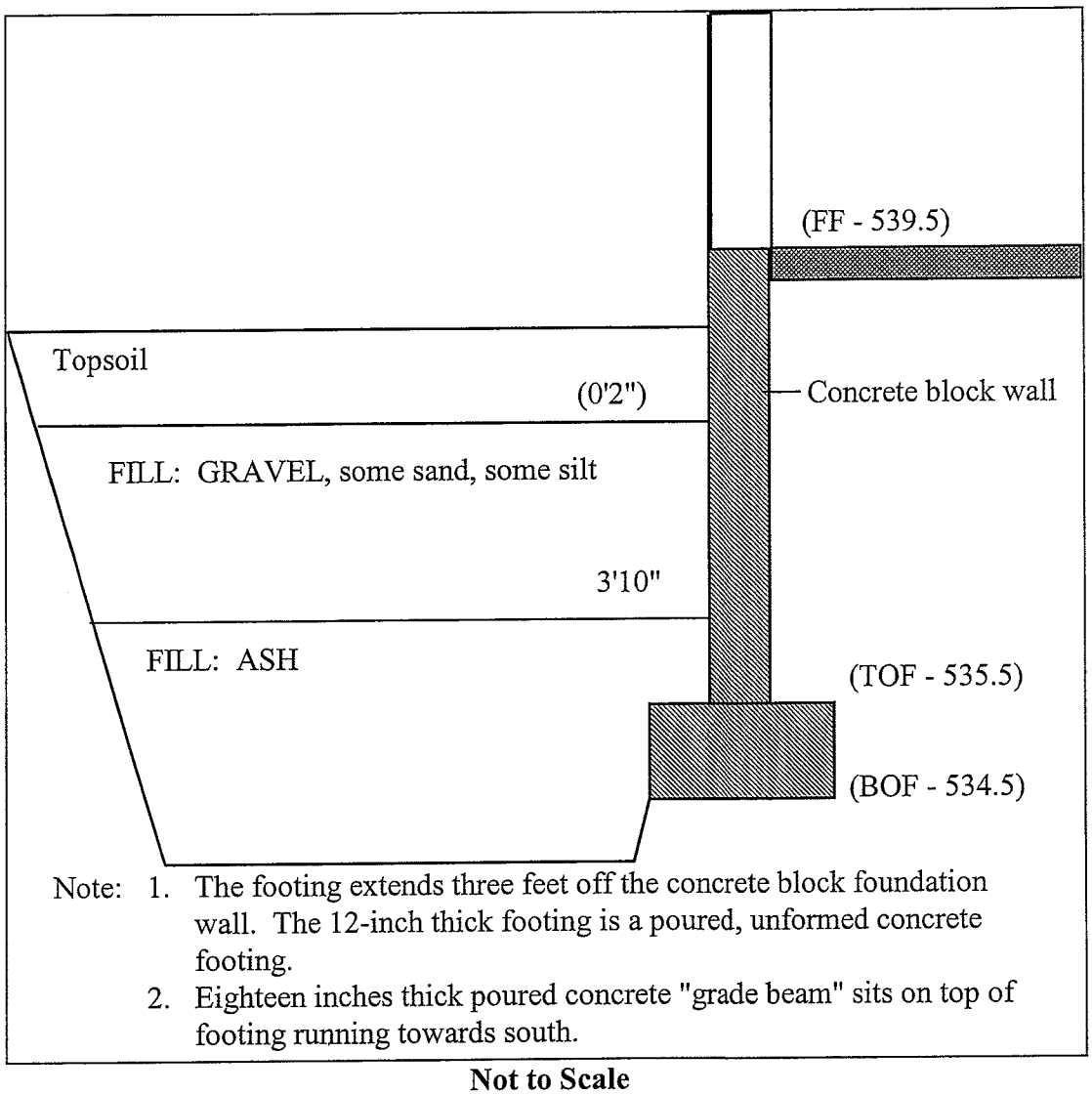
Project No.	1-2421.0	**Page** 1 **of** 1		**Test Pit No.**	TP01-1
Project Name	Printing Methods, Inc. Additions, 1525 Emerson St. Rochester, New York				
Client	Gary C. Sylvester Architects, 452 Lee Road, Rochester, New York 14606				
Elevation		**Weather**	60° Sunny	**Inspector**	J. Netzband
Date Started	04/30/01	**Completed**	04/30/01	**Operator**	D. Richards
Backhoe Subcontractor	DiBattisto Construction			**Equipment**	Case 580 Backhoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL and ROOTS 0'6" FILL: Firm brown moist SAND, some silt 1'7" FILL: Loose to firm black moist ASH, with cans, glass, springs, pipe, brick, tile
4			
6			
8			Saturated below 7'6"
10			9'0" Test pit terminated at 9'0"
12			
14			Notes: 1. Sides caved below 7'6". 2. Water constant at 7'6".

FOUNDATION DESIGN, P.C.
SOIL • ROCK • EXPLORATION • INSTRUMENTATION

Test Pit Log

Project No.	1-2421.0	**Page** 1 **of** 1		**Test Pit No.**	TP01-2
Project Name	Printing Methods, Inc. Additions, 1525 Emerson St. Rochester, New York				
Client	Gary C. Sylvester Architects, 452 Lee Road, Rochester, New York 14606				
Elevation		**Weather**	60° Sunny	**Inspector**	J. Netzband
Date Started	04/30/01	**Completed**	04/30/01	**Operator**	D. Richards
Backhoe Subcontractor	DiBattisto Construction			**Equipment**	Case 580 Backhoe



Note:
1. The footing extends three feet off the concrete block foundation wall. The 12-inch thick footing is a poured, unformed concrete footing.
2. Eighteen inches thick poured concrete "grade beam" sits on top of footing running towards south.

Not to Scale

DATE
STARTED 8/2/88
FINISHED 8/4/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-1
SURFACE ELEV. 102.7
G.W. ELEV. 77.85

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER (0/6 6/12 12/18 18/24)	DESCRIPTION	NOTES
	1.0'	SB	1	13 25	Brown SAND and GRAVEL fill, dense, dry occasional cobbles encountered down to bedrock.	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
5					Grades to:. . . Very dense.	Auger drilling refused at 6.4 ft. SB-3 from 6.4-6.9 ft. revealed bedrock fragment in sampler. Take 2 ft. core then back into unconsolidated material, resume auger drilling.
	1.8'	SB	2	28 39 26 31		
10	0.5'				[FILL] 10.0'	
	REC 88% RDQ 25%	SB NX	4 2	77	Light to dark gray, fine textured dolomite, numerous horizontal fractures, some show iron staining, intense weathering evident on some fractured surfaces, calcite and gypsum precipitates located on weathered surfaces and vugs.	Auger drilling refusal at 10.0 ft.
15	REC 100% RDQ 44%	NX	3		At 14.0 ft.: Some drilling fluid return was lost.	NX core runs 2-5 drilled on 8/3/88. Rotary drilled with 3-7/8 in. tri-cone bit from 10-28.5 ft. Coring was done with a long ear 5.0 ft. NQ core barrel.
20	REC 98% RDQ 77%	NX	4		Water table encountered at approximately 20.5 ft.	Runs 1-3 were drilled using a 58-60 carat drill bit.
25	REC 90% RDQ 68%	NX	5		At 24.0 ft.: Several vertical fractures, possible water producing zone.	Runs 4-5 were drilled using a Series 2 drill bit.
					[DOLOMITE BEDROCK] 29.0'	Boring completed at 29.0 ft.
30						Groundwater Elevation taken on 12/16/88.
35						

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.1

DATE
STARTED 8/18/88
FINISHED 8/19/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-2
SURFACE ELEV. 98.2
G.W. ELEV. 74.99

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
	2.0.'	SB	1	8	16	13	16	Dark brown organic SILT, trace gravel, grading to light brown fine SAND and SILT, dry, medium dense.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Rocky Baye Assistant - Shawn Penrod Augering becomes easier at 2.5 ft. HNU = 5-10 ppm on SB-3, possibly due to moisture.
5	2.0'	SB	2	6	10	16	11	At 4.0 ft.: Some gray clay. At 5.0 ft.: Moist.	
	1.4'	SB	3	4	8	6	28	[SAND and SILT] 7.5'	
	1.0'	SB	4	50					
10	REC 100% RQD 100%	NX	1					Light gray fine textured dolomite, moderately hard, little weathering, few horizontal fractures, some 4-6" vertical fractures present. At 12.5 ft.: Few vugs, some light and dark gray mottling. At. 17.5 ft.: Some white precipitate present which is highly reactive to HCl, some yellow precipitate observed which appears to contain sulfur (drilling fluid begins to have a sulfurous odor). At 19.5 ft.: Encountered water table At 23.0 ft.: Core exhibits increased fracture density and weathering, apparent transmissive zone.	Explosimeter = 0% :LEL : Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. NX core run 1 drilled on 8/18/88. Rotary drilled with 4.5 in. tri-cone bit from 7.5 ft. to 12.5 ft. NX core runs 2-4 drilled on 8/19/88. Coring was done using a long ear 5 ft. NQ core barrel. Run 1 was drilled with a 58-60 carat bit.
15	REC 100% RQD 100%	NX	2						
20	REC 100% RQD 100%	NX	3						
25	REC 100% RQD 97%	NX	4					[DOLOMITE BEDROCK] 28.0'	Run 2-4 were drilled with a Series 8 bit. Boring completed at 28.0 ft. G.W. elevation taken on 12/16/88.
30									
35									

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-15S

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Monroe County Resource Recovery Facility (See Plan)
ELEVATION: 532.81
DATUM: NGVD
START: 4 June 1993
FINISH: 7 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	---	---
INSIDE DIAMETER (IN)	4-1/4	---	---
HAMMER WEIGHT (LB)	---	---	---
HAMMER FALL (IN)	---	---	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 10.3 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5						Advanced augers to 10.3 ft. without split spoon sampling.
10						Auger Refusal at 10.3 ft. Apparent Top of Competent Rock at 10.3 ft.
15						Notes: 1. No OVA readings above background in breathing zone. 2. No explosimeter or radioactivity meter readings above back ground in breathing zone. 3. Set 6.0 in temporary casing to 10.3 ft. 4. Reamed with 5-7/8 in. tri-cone rollerbit to 15.0 ft. and grouted 4.0 in. PVC casing. 5. Reamed with 3-7/8 in. tri-cone rollerbit from 15.0 ft. to 31.0 ft. 6. Installed monitoring well in borehole, see Groundwater. Monitoring Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.3
ROCK CORED (LIN FT):	---
SAMPLES:	---
BORING NO.	MW-15S

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-15D

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: Monroe County Resource Recovery Facility (See Plan)
ELEVATION: 532.87
DATUM: NGVD
START: 2 June 1993
FINISH: 4 June 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 10.1 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						Augered through asphalt.
		7 20 18 14	S1 15"/24"	1.0 3.0	2.0	Mediume dense brown gravelly coarse to fine SAND, trace coal, damp. -FILL-
		10 7 6 6	S2 6"/24"	3.0 5.0		Dense gray GRAVEL, little coarse to fine sand, dry. Medium dense brown coarse to fine SAND, little gravel, damp.
5						Medium dense brown coarse to fine SAND, little gravel, damp.
		7 16 8 2	S3 8"/24"	5.0 7.0	6.8	Medium dense brown coarse sandy GRAVEL, some silt, damp. -FILL-
		1 2 8 11	S4 20"/24"	7.0 9.0	8.5	Loose red-brown fine SAND, trace coarse sand, trace silt, damp. -FLUVIAL-
10		100/.2	S5 2"/2"	9.0 9.2		Hard, highly weathered, gray, fine-grained, DOLOSTONE. damp. -LOCKPORT FORMATION-
						Auger Refusal at 10.1 ft. Apparent Top of Competent Rock at 10.1 ft.
15						Notes: 1. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 0 ppm S3 = 0 ppm S4 = 0 ppm S5 = 0 ppm No OVA readings above background in breathing zone. 2. No explosimeter or radioactivity meter readings above background from sample screening or in breathing zone. 3. See Core Boring Report, page 2. 4. Installed monitoring well in borehole, See Groundwater Monitoring Well Report.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.1
ROCK CORED (LIN FT):	30.0
SAMPLES:	5S
BORING NO.	MW-15D

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. MW-15D FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
	2	10.3					Began Coring at 10.3 ft.
	2				MOD		Hard, light to medium gray, fine-grained thin-bedded, DOLOSTONE, very thinly color-banded. Trace pits, vugs. Secondary gypsum seams in closely spaced partings.
	2						
	2	R1	117/84	98/70			
	2						
15	2						-LOCKPORT FORMATION-
	2						Rough, planar vertical joint from 12.0 ft. to 12.5 ft.
	2						Vug at 13.0 ft., 0.1 ft. wide.
	2						Rough, high angle stepped joint at 12.7 ft.
	2				SL		
	2						Secondary gypsum seams and partings below 17.4 ft.
20	2	20.3					
	2	20.3					
	2						
	2						
	2	R2	116/112	97/93	SL		
25	2					25.4	
	2						Moderately hard, light to dark gray, fine-grained, dolomitic MUDSTONE, very thinly color-banded. Trace pits and vugs throughout. Closely to very closely spaced horizontal argillaceous partings.
	2						
	2						
	2						-ROCHESTER FORMATION-
30	2	30.3					
	2	30.3					
	2						
	2						
	2	R3	123/117	103/95*	SL		* RQD based on rock core recovered.
35	2						
	2						
	2						
	2						
	2						
40		40.3					Bottom of Boring at 40.3 ft.
							Notes:
							1. Lost 2,950 gallons of water during coring and reaming process.
45							

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. MW-19

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 2
LOCATION: Browning-Ferris Ind. (See Plan)
ELEVATION: 530.97
DATUM: NGVD
START: 24 May 1993
FINISH: 26 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	NX
INSIDE DIAMETER (IN)	4-1/4	1-3/8	2-1/8
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 11.3 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
0		2 9 16 14	S1 15"/24"	0.0 2.0	1.5	Medium dense brown silty fine SAND, little gravel, little coarse sand, dry. -FILL-
		2 4 4 4	S2 15"/24"	2.0 4.0		Medium dense black ASH, with glass, metal slag, dry. Loose black and gray ASH with glass, moist.
5		1 1 1 1	S3 8"/24"	4.0 6.0		Very loose dark gray ASH with silt, trace fine sand, roots, glass fragments. -FILL-
		5 10 15 34	S4 6"/24"	6.0 8.0	6.0	Medium dense gray fine sandy GRAVEL, some silt, damp. -GLACIAL TILL- Very dense gray sandy GRAVEL, wet. -GLACIAL TILL-
10		12 25 36 38	S5 18"/24"	8.0 10.0	10.0	
		22 35 100/.5	S6 12"/18"	10.0 11.5	11.5	Hard, highly weathered, gray-brown, fine-grained DOLOSTONE. -LOCKPORT FORMATION-
15						Auger Refusal At 11.5 ft. Apparent Top of Competent Rock at 11.5 ft.
20						Notes: 1. OVA readings from sample screening noted as follows: S1 = 40 ppm (5 ppm methane) S2 = 250 ppm (140 ppm methane) S3 = 400 ppm (110 ppm methane) S4 = 120 ppm (30 ppm methane) S5 = 100 ppm (30 ppm methane) S6 = 100 ppm (30 ppm methane) No OVA readings above background in breathing zone. 2. No explosimeter or radioactivity meter readings above background from sample screening or in breathing zone. 3. See Core Boring Report, page 2. 4. Installed monitoring well in borehole, see Groundwater Monitoring Well Report.
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER
5/24/93	1045		11.5 ft.	11.5 ft.	4.5 ft.

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	11.5
ROCK CORED (LIN FT):	10.0
SAMPLES:	6S
BORING NO.	MW-19

H & A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	CORE BORING REPORT	BORING NO. MW-19 FILE NO. 70352-46 SHEET NO. 2 OF 2

DEPTH (FT)	DRILLING RATE (MIN./FT.)	CORE NO. / DEPTH(FT)	RECOVERY/RQD IN.	RECOVERY/RQD %	WEATHERING	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
							Began Coring at 11.5 ft.
	5	11.5					
	5	R1 12.0	5/5	83/83			Hard, slightly weathered, gray-brown, fine-grained DOLOSTONE. Trace pits and stylolites.
	7						-LOCKPORT FORMATION-
	4	12.0					Smooth, low angle, undulating joints at 12.6, 12.7 and 16.3 ft.
15	5						
	7		114/94	100/82	SL		Rough, low angle, undulating joint at 20.0 ft.
	5	R2					Horizontal partings at 12.2, 14.0, 15.1 and 19.3 ft.
	6						Smooth, planar, low angle joint at 16.1 ft.
	5						Smooth, planar, high angle joint at 18.6 ft.
20	4						Vugs at 18.1 ft.
	2	21.5					
							Bottom of Exploration at 21.5 ft.
25							
30							
35							
40							
45							

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-1
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.2 **Weather** Cloudy, 30° **Inspector** J. Metzgand
Date Started 4/7/95 **Completed** 4/7/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'3" Firm orange, brown, black & grey mottled FILL - 90% cinders & ash, 10% glass, scrap metal, wire, brick & cobbles
4			3'2" TOPSOIL 3'10"
6			Firm yellow brown moist SILT, some sand 5'10"
8			Compact light brown moist SILT, some sand, little gravel, few cobbles
10			
12			10'10" Refusal on bedrock at 10'10"
14			Notes: 1. Sides vertical and stable 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 of 1 **Test Pit No.** L-2
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.3 **Weather** Cloudy, 30° **Inspector** J. Netzband
Date Started 4/7/95 **Completed** 4/7/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm black moist ASH & CINDER FILL, trace glass, scrap metal 0'11" TOPSOIL 1'10"
4			Firm yellow brown moist SILT, some sand, little gravel, few cobbles
6			Compact below 5'0"
8			
10			
12			11'4" Refusal on bedrock at 11'4"
14			Notes: 1. Sides vertical and stable 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-3
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.7 **Weather** Cloudy, 30° **Inspector** J. Metzland
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Tom
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ASPHALT 0'3" Firm brown orange and black mottled FILL - 95% ash & cinders, 5% glass & tires
4			2'6" Firm dark brown TOPSOIL
6			4'3" Firm light brown to grey moist SILT, some sand Compact below 6'0"
8			24" diameter boulder at 7'0"
10			Dense below 9'0"
12			12'2"
14			Refusal on bedrock at 12'2" Notes: 1. Sides near vertical 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 2 **Test Pit No.** L-4
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.1 **Weather** Cloudy, 30° **Inspector** L. Metzgard
Date Started 4/7/95 **Completed** 4/7/95 **Operator** Tom
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Black damp ASH & CINDERS, little glass 1'5" TOPSOIL 1'10"
4			Firm yellow brown moist SILT, some sand, little gravel, few cobbles, few boulders to 24" diameter
6			
8			
10			
12			
14			14'0"

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-5
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation _____ **Weather** Cloudy, 30° **Inspector** J. Nezband
Date Started 4/7/95 **Completed** 4/7/95 **Operator** Joe
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Black ASH & CINDERS 1'0" GLASS & BOTTLES 2'0"
4			TOPSOIL 3'0" Firm yellow brown moist SILT, some sand, trace gravel
6			
8			Few cobbles & boulders below 7'0"
10			
12			10'7" Refusal on bedrock at 10'7"
14			Notes: 1. Sides vertical and stable 2. Dry on completion 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-6
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.4 **Weather** Cloudy, 30° **Inspector** J. Net[illegible]
Date Started 4/6/95 **Completed** 4/6/95 **Operator** To[illegible]
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, trace organic 0'3" Firm black, orange brown moist FILL - 80% cinders & ash, 20% glass, wood, scrap metal, possible asbestos
4			
6			5'8"
8			Firm grey brown moist SILT, some sand
10			9'9"
12			Refusal on bedrock at 9'9"
14			Notes: 1. Sides near vertical 2. Slight seepage at 5'8" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 2 **Test Pit No.** L-7
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.9 **Weather** Cloudy, 30° **Inspector** J. Nolland
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm orange brown black grey moist FILL - 75% cinders & ash, 25% brick, glass, scrap metal, rubber straps, wood
4			
6			
8			7'1" Firm grey moist SILT, some sand
10			
12			
14			

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-8
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 537.4 **Weather** Cloudy, 30° **Inspector** J. Nellband
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'2" Firm black orange brown moist FILL - 75% cinders & ash, 25% glass, scrap metal, rock slabs, wood, pipes, paint
4			
6			5'6" Firm yellow brown moist SILT, some sand
8			7'10"
10			Refusal on bedrock at 7'10"
12			
14			Notes: 1. Sides sloughed above 5'6" 2. Water flowing at 5'6", 25-50 gallon/minute 3. Odor noted 4. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-9
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.9 **Weather** Cloudy, 30° **Inspector** J. Nazzand
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			ORGANIC MAT 0'3" Firm grey damp ASH, trace metal, glass, ceramics, plastic
4			
6			4'8" Firm black wet FILL - ash, wood, cobbles, boulders, glass, scrap metal
8			
10			
12			10'1" Refusal on bedrock at 10'1"
14			Notes: 1. Sides caved below 6'0" 2. Water level at 6'0" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-10
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.8 **Weather** Cloudy, 30° **Inspector** L. Metzgar
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm brown CINDER & ASH FILL with glass
4			2'5" Firm grey ASH FILL 4'3" Firm black FILL - 40% wood, bottles, scrap metal, bed springs, plastic bag, blasted rock fragments, 60% ash & cinders
6			
8			
10			9'10"
12			Test pit terminated at 9'10"
14			Notes: 1. Sides caved below 4'3" 2. Water level constant at 6'2" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-11
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.2 **Weather** Cloudy, 30° **Inspector** J. Netzband
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			ORGANIC MAT 0'2" Firm orange brown to black mottled CINDERS & ASH FILL with glass, brick & plastic
4			2'4" Firm black FILL - 50% ash & cinders, 50% wood, bed springs, pipe, brick, scrap metal, glass, cobbles, boulders
6			
8			
10			
12			10'8" Refusal on bedrock at 10'8"
14			Notes: 1. Sides caved below 6'6" 2. Water level constant at 8'0" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-12
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 537.9 **Weather** Cloudy, 30° **Inspector** J. Netzband
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			Firm brown, black and grey damp ASH & CINDER FILL, trace glass, trace brick, trace scrap metal
4			3'0" Firm black to grey moist FILL - 65% ASH & CINDERS, 35% scrap metal, glass, wood
6			5'0" Firm black saturated WOOD, (branches & lumber), trace tile pipe
8			
10			10'0" Firm grey moist SILT, some sand
12			11'8" Test pit terminated at 11'8"
14			Notes: 1. Sides caved badly below 3'0" 2. Odor noted from 3 to 5 feet; 0.2 ppm on HNu meter 3. Possible bedrock at bottom of hole, too much water in hole to be certain. 4. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-13
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 539.5 **Weather** Cloudy, 30° **Inspector** J. Neuhard
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm orange brown, black & grey mottled FILL - 85% cinders & ash, 15% glass, scrap metal & plastic
4			
6			4'9" Firm grey to black wet FILL - 70% cinders & ash, 30% glass, scrap metal, wood, plastic, rubber tires, brick
8			
10			10'0"
12			Firm yellow brown moist SILT, some sand 12'7"
14			Refusal on bedrock at 12'7" Notes: 1. Sides caved below 4'9" 2. Water level at 8'4" on completion 3. Odor noted - Hnu reading 0.9 ppm from 5 to 10 feet 4. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-14
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.1 **Weather** Cloudy, 30° **Inspector** J. Metzand
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Tod
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			ORGANIC MAT 0'3" Firm orange brown, black, white & grey mottled ASH FILL - trace glass
4			4'0"
6			Firm black moist FILL - 60% ash & cinders, 40% wood, floor tile, pipe, scrap metal
8			8'1"
10			Firm grey moist SILT, some sand
12			11'1" Refusal on bedrock at 11'1"
14			Notes: 1. Sides vertical and not stable 2. Slight seepage at 8'1" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-15
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 538.7 **Weather** Cloudy, 30° **Inspector** [illegible]
Date Started 4/6/95 **Completed** 4/6/95 **Operator** [illegible]
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			Firm ASH & CINDER FILL, trace wood, trace brick
4			
6			lumber pocket at 5'3"
			6'1"
8			TOPSOIL with bent over brush
			7'0"
10			Firm grey wet SILT, some sand, few cobbles & boulders to 36" diameter
			9'8"
12			Refusal on bedrock at 9'8"
14			Notes: 1. Sides vertical, not stable 2. Slight seepage at 6'1" 3. Elevations provided by The Sear-Brown Group, Inc.

Test Pit Log

Project No. 2-1407.1 **Page** 1 **of** 1 **Test Pit No.** L-16
Project Name Outer Loop Industrial Park, Lot No. 38, Emerson Street, Rochester, New York
Client The Sear-Brown Group, 85 Metro Park, Rochester, New York
Elevation 540.1 **Weather** Cloudy, 30° **Inspector** L. Netzband
Date Started 4/6/95 **Completed** 4/6/95 **Operator** Todd
Backhoe Subcontractor The Nichols Team **Equipment** Kato 4D 700

DRAFT

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Compact dark brown damp blasted ROCK FRAGMENTS
4			2'7" Firm orange brown grey black mottled damp CINDER & ASH FILL, trace blasted rock fragments & glass
6			
8			
10			8'9" Firm grey moist SILT, some sand
12			11'5" Refusal on bedrock at 11'5"
14			Notes: 1. Sides caved below 5'0" 2. Water flowing at 8'9" about 25 to 50 gallon/minute 3. Elevations provided by The Sear-Brown Group, Inc.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-1 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown fine SAND, little silt, very few cobbles, with a gray clayey layer from 0.9 ft. to 1.1 ft.	No OVA or radiation meter readings above background.
				-FILL-	
			1.1	Same, trace plastic, paper, wood, dispersed through fill.	
			1.5	-FILL-	
2			2.0	Highly weathered, gray DOLOMITE. -LOCKPORT FORMATION-	
				Moderately weathered, gray, fine grained DOLOMITE.	
4				-LOCKPORT FORMATION-	
			4.5	Bottom of Test Pit at 4.5 ft.	
6					
8					
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 6 feet WIDTH 3 feet	DEPTH: 4.5 ft.
				JAR SAMPLES: ---
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: Not Encountered
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-1

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-2 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown and black silty fine SAND, moist.	No OVA or radiation meter readings above background.
				-FILL-	
			1.0		
				Same, trace plastic, paper and metal (cans) from 1.0 ft. to 2.0 ft. dispersed through fill.	
				-FILL-	
2			2.0		
				Brown and black silty fine SAND, little gravel, trace gray clay, moist.	
4					
6				-FILL OR DISTURBED NATURAL MATERIALS-	
8			8.0		
				Highly weathered, gray DOLOMITE. -LOCKPORT FORMATION-	
			8.5		Water level in test pit at 8.5 ft.*
				Apparent Top of Competent Bedrock and Bottom of Test Pit at 8.5 ft.	
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 8 feet WIDTH 3.5 feet	DEPTH: 8.5 ft.
				JAR SAMPLES: ---
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: 8.5 ft.*
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-2

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-3 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown coarse to fine sandy GRAVEL, trace metal, wood, and concrete from 1.0 ft. to 1.5 ft. Concrete slab at the surface at the north end of the test pit.	No OVA or radiation meter readings above background except as noted below.
2				-FILL-	
			3.0		
				Gray and black mottled silty CLAY, trace organic material.	Water seeping in at ~ 3.0 ft.*
4					OVA reading at ~ 4.5 ft. to 5.0 ft. in clay with organic material = 25 ppm.
6				-FILL OR DISTURBED NATURAL MATERIAL-	
			7.0		Water level in test pit at 7.0 ft.*
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 7 feet WIDTH 3.5 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY	
DEPTH:	7.0 ft.
JAR SAMPLES:	---
BAG SAMPLES:	---
WATER LEVEL:	7.0 ft.*
TEST PIT NO.	TP-3

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-4 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST
LOCATION: ROCHESTER, NEW YORK
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING
EQUIPMENT USED: JCB-1400B

LOCATION: W. Street
ELEVATION:
EXPLORATION DATE: 9 Dec. 1992
H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			1.5	Gray-brown coarse to fine sandy GRAVEL, with roots. -FILL-	No OVA or radiation meter readings above background.
2				Brown silty coarse to fine SAND, some gravel, damp.	
4					
6				-GLACIAL TILL-	
			7.5		
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.5 ft.	
10					
12					

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 7 feet WIDTH 3 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 7.5 ft.
JAR SAMPLES: ---
BAG SAMPLES: ---
WATER LEVEL: Not Encountered

TEST PIT NO. TP-4

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-5 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: W. Street ELEVATION: EXPLORATION DATE: 9 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Gray-brown coarse to fine sandy GRAVEL.	No OVA or radiation meter readings above background.
				-FILL-	
			1.0	Brown silty coarse to fine SAND, some gravel.	
2					
4					
				-GLACIAL TILL-	
6					
			6.5	Apparent Top of Bedrock and Bottom of Test Pit at 6.5 ft.	Water level in test pit at 6.5 ft.*
8					
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE
LENGTH 7 feet WIDTH 3.5 feet
BOULDERS
8" to 18" DIAMETER: No. = Vol. cu ft
Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY	
DEPTH:	6.5 ft.
JAR SAMPLES:	---
BAG SAMPLES:	---
WATER LEVEL:	6.5 ft.*
TEST PIT NO.	TP-5

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-6 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: W. Street ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Dark brown organic SILT, little coarse to fine sand, with trace plastic and paper from 1.0 ft. to 1.5 ft.	No OVA or radiation meter readings above background.
2				-FILL-	
			2.5		
			3.0	Dark brown organic SILT overlying yellow-brown mottled tan and gray clayey SILT. -BURIED SOIL-	
				Brown silty coarse to fine SAND, some gravel.	Water seeping into test pit at 3.5 ft.*
4					
6				-GLACIAL TILL-	
			7.0		
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 5 feet WIDTH 3.5 feet	DEPTH: 7.0 ft.
				JAR SAMPLES: ---
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: * Not Encountered
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-6

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-7 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION:Monroe Cty. Resource Recovery Facility, Emerson St. ELEVATION: EXPLORATION DATE: 14 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			1.5	Red-brown silty coarse to fine SAND, little gravel. -FILL-	No HNu or radiation meter readings above background.
2				Gray-black clayey SILT, with organic material, wood, roots, also numerous boulders (rocky fill). -FILL-	Water seeping in at 3.5 ft.*
4			4.0	Gray-brown mottled red and brown silty fine SAND. -LACUSTRINE/ALLUVIUM-	
6			7.0	Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	
8					
10					
12					

* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT

* Hrs after completed

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 5 feet WIDTH 3.5 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 7.0 ft.

JAR SAMPLES: ---

BAG SAMPLES: ---

WATER LEVEL: * Not Encountered

TEST PIT NO. TP-7

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-21 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Federal Stamping 1455 Emerson St. ELEVATION: EXPLORATION DATE: 11 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
	B1	1.0		Brown gravelly coarse to fine SAND, with brick, concrete, paper and plastic at ~ 1.5 ft.	OVA reading = 2 to 9 ppm from test pit soil. No radiation meter readings above background.
2					
	S1	3.0			
4					
				-FILL-	
6			6.0	Apparent Top of Bedrock and Bottom of Test Pit at 6.0 ft.	Water level in test pit at 6.0 ft.*
8					
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE
LENGTH 7 feet WIDTH 3.5 feet
BOULDERS
8" to 18" DIAMETER: No. = Vol. cu ft
Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY	
DEPTH:	6.0 ft.
JAR SAMPLES:	1
BAG SAMPLES:	1
WATER LEVEL:	6.0 ft.*
TEST PIT NO.	TP-21

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-22 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Federal Stamping 1455 Emerson St. ELEVATION: EXPLORATION DATE: 11 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Brown coarse to fine sandy GRAVEL, common cobbles and boulders (rocky fill), trace silt and clay, trace brick fragments.	No OVA readings or radiation meter readings above background.
4				-FILL or DISTURBED BEDROCK-	
6			5.0	Apparent Top of Bedrock and Bottom of Test Pit at 5.0 ft.	Water level in test pit at 5.0 ft.*
8					
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 6 feet WIDTH 3.5 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH:	5.0 ft.
JAR SAMPLES:	---
BAG SAMPLES:	---
WATER LEVEL:	5.0 ft.*
TEST PIT NO.	TP-22

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-23 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST
LOCATION: ROCHESTER, NEW YORK
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING
EQUIPMENT USED: JCB-1400B

LOCATION: Federal Stamping
1455 Emerson St.
ELEVATION:
EXPLORATION DATE: 10 Dec. 1992
H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2	B1	2.5		Gray-black gravel and cobble size rock fragments (rocky fill). Petroleum odor, and staining (sheen) along sides of pit and in water at bottom of pit. Sheen also seen on gravel.	OVA readings = 0 to 20 ppm above background. No radiation meter readings above background.
				-FILL or DISTURBED BEDROCK-	
4			4.0	Apparent Top of Bedrock and Bottom of Test Pit at 4.0 ft.	Water level in test pit at 3.5 ft.*
6					
8					
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 6 feet WIDTH 3.5 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 4.0 ft.
JAR SAMPLES: ---
BAG SAMPLES: 1
WATER LEVEL: 3.5 ft.*
TEST PIT NO. TP-23

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB-101
SHEET 1 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: E side of Vanguard Pkwy
GROUND SURFACE ELEVATION DATUM
START DATE: 9/27/10 END DATE:

TYPE OF DRILL RIG: CME track mtd
AUGER SIZE AND TYPE: 4.25 -Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE bgs BLOWS / 6"	NO.	DEPTH (FEET)	~~N-VALUE~~ /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
1	5 5 10 12	S-1	0-2		1.7'	0.7	grass/topsoil atop f/c gravel (fill) med. br. to lt. br. clayey SILT w/ f/c gravel tr. sand	0.2 ppm 10-15 μR/hr	S
2									
3	8 10 12	S-2	2-4		1.4'	3.5	grayish br. clayey SILT similar to above but reddish br.	0.1 ppm 15-20 μR/hr	S
4	14 3						w/ more clay	0.1 ppm	
5	4 3	S-3	4-6		1.5'		brownish gray Clay, tr. silt very plastic	15-20 peak 22 μR/hr	S
6	4							~~0.1 ppm~~	
7	50/6	S-4	6-6.4		poor 20.5		spoon/auger refusal @ 6.4 similar to above and rock fragments	0.1 ppm 15-20 peak 21 μR/hr	S
8				SLT	cashing	~12:30	5-7/8" roller bit to 8.5' BG 9/27 - begin coring @ 5:30 9/29		
9					60"		Run 1 lt. to med gray Dolostone		
10		R-1	8.5-13.5		5' 100%		small (1/2") quartz intrusion or calcite deposit @ 8.7' low ∠ frac @ 1"; 45° fracs from 1.5" to 6" low ∠ frac @ 9.5"; horiz fracs @: 12", 15.5", 20"		C
11									
12				28" 60" 42% ~~82%~~			22.5", 31.5", 38.5", 41.5" (infilled w/ silt ~~clay~~), 47.5", 48", 56" (1.5" to 6" may be caused by drilling)		
13							No coring water lost in Run 1		
14		R-2	13.5-				Run 2 lost ~15 gal coring water possible water bearing fracture @ ~16'		
15							rock similar to above cavity @ 20.5' horizontal fractures @: 6", 11", 15.5", 19", 23.5", 29 (see page 2		
16									

2.1 socket

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: background 0.1-0.2 ppm PID (Lab mini Rae Lite) 10-15 μR/hr. Ludlum meter (Ashtead)

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.

BORING # LAB 101

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 101
SHEET 2 of 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER:
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: Vanguard Pkwy
GROUND SURFACE ELEVATION: DATUM
START DATE: 9/29/10 END DATE:

TYPE OF DRILL RIG: ATV CME tracked
AUGER SIZE AND TYPE: ~~4.25 Inch ID Hollow stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split spoons~~
ROCK DRILLING METHOD: ~~NX &~~ HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FEET)	~~N-VALUE~~ /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
							calcite deposit @ 18.5'		
17		R-2	13.5 - 18.5	~~53.75~~ ~~58.75~~ 60 90%	~~58.75~~ 60 98%		Run 2 (cont.) horiz. fracs @ 33", 33.5", 38", 52" ~~many~~ ~~the~~ several horiz + vert. fracs from 45" to 49" but likely caused by drilling		C
18									
19									
20		R-3	18.5' - 23.5'	58" 62" 94%	62" 100%		Run 3 loss of ~10 gal cuttings water rock similar to above although slightly darker gray (med) to dk gray hard Dolostone)		C
21									
22							quartz/calcite deposit @ 1.5" to 2" horiz fracs @ 2", 4" (vert + horiz fracs 4" to 6" but appear related to drilling) 10.25", 36", 47", 54.5" (quartz/calcite in 4" frac		
23									
24									
9									
10							EOB @ 23.5' BG		
11									
12									
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
loss of ~25 gal cuttings water
Kevin says "Nice sump"
i.e., he feels 16' water bearing zone with some water

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.

BORING #

1575 Emerson

PROJECT: FESL Soil Investigation	Location "I" **Log of Well No.** LAB-103		
BORING LOCATION: ~~South Side of [illegible] (Basement)~~	ELEVATION AND DATUM:		
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 9/27/10	DATE FINISHED:	
DRILLING METHOD: 4¼" Ø HSA	TOTAL DEPTH:	SCREEN INTERVAL:	
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST	COMPL.	CASING:
SAMPLING METHOD: 4' Acetate sleeves	LOGGED BY: MAL		
HAMMER WEIGHT: 140 / DROP:	RESPONSIBLE PROFESSIONAL:	REG. NO.	

DEPTH (feet)	Sample No.	Sample	Blows/ Foot	OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., consistency, structure, cementation, react. w/HCl geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
			PID		0-0.5' brown (10YR 5/4) [illegible] (ML) w/ trace fine sand. Dry, loose	
2	1	M.C.	Bkgd	Ø	0.5-1.0' - AA w/ weathered shale / [illegible] gravel	* collect VOC sample from 5.5-6.0' bgs @ 12:00 -
4					1.0-1.3' - waste Slate, coal, clinkers, brick,	
6	2	M.C.	Bkgd	Ø	0-0.5 AA Ash material, plastic, glass	
					1.0-1.5 10YR 4/4 silty/sand fs (NATIVE)	
8					Top sampler refusal @ 6.5' bgs (bearing firm, bearing met @ ~6.3' bgs	
10						
12					* Advance 4¼" HSA to 9' bgs. Install 4" Ø permanent casing at 9' bgs.	
14						
16						
18						
20						
22						
24						
26						
28						

W-1 (12/95)

1575 Emerson

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	Subsurface Investigation FESL City of Rochester, New York	BORING LAB 103 SHEET 1 OF JOB # CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: S side Emerson S of Lard
GROUND SURFACE ELEVATION — DATUM
START DATE: 9/28/10 — END DATE: 9/28/10

TYPE OF DRILL RIG: ATV CME tracked
AUGER SIZE AND TYPE: ~~4.25 -Inch ID Hollow-stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split-spoons~~
ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	BLOWS /6"	NO.	DEPTH (FEET)	N-VALUE /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
9		R-1	9.1-10.1	0" 0%	10.0" 83% ~~0.875~~ ~~87.5~~		Run #1 hard med to lt. gray Dolostone nearly horiz fractures @ 0.5", 1.5", 3", 5", 6.25" 8.25", 9", 10.5" (betw 9-9.75" highly fraced w/ vert.)		C
12							Run #2 same rock as above highly frac 2.25" to 3", horiz fracs: 4.25", 5.5", 7", 8.5", 10", 13.5"		
13		R-2	10.1-14.1	21" ~~48.75~~ 43%	~~48.75~~ 49" 100%	102%	highly frac. 15.5"-17" horiz. frac @: 19" 23", 26", 29", and 46.5"		C
14-18		R-3	14.1-19.1	37"/60" 62%	60" 100%		Run #3 same rock as above vert./horiz fracs from 1" to 6" horiz fracs: 9", 13.5", 16", 19", 20", 22" 26.5", 28", 30.5", 40", 44", 46", 49.5" 54", 58", 59" w/ 45° frac from 54" to 55.5"		C
19-23		R-4	19.1-24'	43/~~49"~~ 59.5" 72% ~~82%~~	59.0" 99%		Run 4 same rock as above but perhaps med to dk gray horiz fracs: 2", 4", 5.5", 13", 13.75", 18.75", 19.5", ~~26"~~, 31" (w/ low ∡ frac @ 31.5"), ~~36"~~, 39", 43", 51.5" + 57"		
24							EOB @ 24' BG lost a total of ~10 gal of coring water		
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: 4" casing (steel) set @ 9' BG
Run 1 cut short to Δ coring bit from "surficial" to "impregnated"

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.

BORING #

1684 Emerson

PROJECT: FESL SVC investigation

LOCATION "B"

Log of Well No. LAB-104

BORING LOCATION: ~~S side of Emerson @ McCartneyville~~	ELEVATION AND DATUM:
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 9/27/10 — DATE FINISHED:
DRILLING METHOD: 4¼" Ø HSA	TOTAL DEPTH: — SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST 6-7 COMPL. — CASING:
SAMPLING METHOD: 4' Acetate sleeves	LOGGED BY: MMc
HAMMER WEIGHT: 140# — DROP: Auto	RESPONSIBLE PROFESSIONAL: BM — REG. NO.

DEPTH (feet)	Sample No.	Sample	Blows/Foot	OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
2	1	2.5	NA	Ø	0-6" - Brown (10YR 3/4) topsoil, dry, loose - 6"-2.5' - waste/fill - brown silt (ML) w/ fine sand, trace asp, brick, glass, coal clinker, coal cinders. MOIST throughout trace fine rounded gravel.	* sample LAB-104 11-12' collected at 1400.
6	2	1.5	NA	Ø	0-6" AA; 6"-1.0' - gray shale/ls Bedrock fragments; 1.0'-1.5' saturated, AA (6"-1.0') w/ brown silt matrix. loose throughout -	▽ (7)
10	3	2.5	NA	Ø	ML fine sand with silt, soft, saturated, mottled dark gray to light tan/brown - slight septic odor. Moist bottom 2.5' of sample; NO odors - top 6"; NATIVE	
14	RAD				→ sampler refusal. NO sample 12.0 [12.24 ref] * advance ~~???~~ 4" Ø permanent steel casing to 14' bgs.	* hole reamed with 3⅞" roller bit to 24' bgs.
18					9/28/10 - Begin ~~HQ~~ NX core Run @ 14' bgs	* Drill rate ~2 min./ft. * NO water loss
20					Run # 1 14-24' REC: ~~10'/10'~~ (119" - 99%) RQD: ~~3.2'/10'~~ (42" - 35%) LITH: Lockport Dolomite(?)	* HOLE Flushed with potable water to remove drill cuttings, well purged dry & allowed to recover.
24					Hard Gray Limestone w/ shale interbeds frequent mechanical breaks along shale beds throughout. few small 1-2mm vugs throughout large vug w/ calcite precipitation - open horizontal fractures prevalent where shale interbeds dominate. No vert. fractures	all vert. fractures in core are mech. breaks. OPEN 3⅞" COREHOLE 14-24'

Project No. | Geomatrix Consultants | Figure

W-1 (12/95)

W-1 (Blank)

1769 Emerson

PROJECT: FDL SVE INVESTIGATION	Location "A" **Log of Well No.** LAB-106
BORING LOCATION: ~~SW Corner of W Emerson~~	ELEVATION AND DATUM:
DRILLING CONTRACTOR: NORTHWESTERN	DATE STARTED: 9/28/10 / DATE FINISHED:
DRILLING METHOD: 4¼" ID HSA	TOTAL DEPTH: / SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST / COMPL. / CASING:
SAMPLING METHOD: 4' Acetate sleeves	LOGGED BY:
HAMMER WEIGHT: 140# / DROP: Auto	RESPONSIBLE PROFESSIONAL: / REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	Sample	Blows/6"	OVM Reading (ppm)	DESCRIPTION: NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl. geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
2	1	2.2'	RAD wet	Ø	0-1.0' (ML) brown silt & fs. loose, dry (topsoil). 10YR 5/4	
4					1.0-2.2' Fill brown fs w/ silt, trace brick pieces, coarse angular limestone/lsh. gravel, loose, dry -	
6	2	3.0	wet	Ø	→ Auger thought obstruction	
8					→ loose gravel-fill (Af) sampler bouncing @ 5.5' bgs. Augers grinding evenly @ 5.5' bgs.	* NO ANALYTICAL SAMPLE COLLECTED
10					* install 4" ID perm. casing @ 5.5' bgs.	
12						
14						
16						
18						
20						
22						
24						
26						

Project No.	Geomatrix Consultants	Figure

W-1 (12/95)

W-1 (Blank)

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 106
SHEET 1 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: W St. + Emerson "A"
GROUND SURFACE ELEVATION DATUM
START DATE: 9/29/10 END DATE:

TYPE OF DRILL RIG: ATV CME
AUGER SIZE AND TYPE: ~~4.25 Inch ID Hollow-stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split-spoons~~
ROCK DRILLING METHOD: ~~NX &~~ HQ Water Rotary Coring

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FEET)	SAMPLE N-VALUE /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
10									
11		R-1	10.5 – 15.5	55" / 59.5 / 92%	59.5" / 60" / 99%		Run 1 med gray hard Dolostone w/ calcite? soln. cavities @ 11" to 12" 21" to 22" and 44" horiz fracs @ 13", 14", 31", 40", & 52" low ∠ frac @ 48"		C
12									
13									
14		CAL			~~60.75~~" ~~100%~~		water return near 100%		
15									
16		R-2	15.5 – 20.5	60" / 98% / ~~100%~~	~~60.75~~" / 61" / 100%		rock similar to above but no obvious soln. cavities horiz fracs @ & 14", 30.25", 51.75" & 56.25"		C
17									
18									
19							water return near 100%		
20							rock similar to above but perhaps slightly darker (med to dk gray, hard Dolostone) horiz. fracs @ 12" & 49"		
21									
22		R-3	20.5 – 25.5	~~100%~~ / 58" / 94%	100% / 60"		soln cavity (calcite?) @ 59" water return near 100%		C
23									
24									
25									
26									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: Casing set 2' into rock @ ~~10.5~~ 10.5' BG by others

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.

BORING # LAB 106

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 106
SHEET 2 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: ~~W S.t. & Emerson "A"~~
GROUND SURFACE ELEVATION DATUM
START DATE: 9/29/10 END DATE: 9/29/10

TYPE OF DRILL RIG: ATV CME Tracked
AUGER SIZE AND TYPE: ~~4.25 inch ID Hollow-stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split-spoons~~
ROCK DRILLING METHOD: ~~NX &~~ HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FEET)	SAMPLE ~~N-VALUE~~ /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
26									
27		R-4	25.5	58.0"	61"		Run 4 rock similar to above 1/4 horiz. frac @ 3.5" (water bearing?) horiz frac @ 15", 41", & 51"		
28		x	30.5	6'	100%				
29				94%					
	x	x	x	x	x	x	x	x	x
30							loss of 10-15 gal of water during run 4		
31									
6							EOB @ 30.5' BG		
7							post-install well development: developed using rig pump for ~1 hr - 35+/- gal extracted; fairly clear water		
8									
9									
10									
11							post initial development		
12									
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE 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.

BORING #

Data by M SNODGRASS

Sheet ___ of ___

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-2
Project No. 576-005

Project Name ENERSON STREET
Client NYSDEC
Driller AMERICAN AUGER
Monitoring Instrument(s) HNU, MSA, CGI, DOSIMETER
SAMPLE HAMMER
Weight - lb
Fall - in.

Date 8/3/89 (start) ___ (finish)
Boring Location YELLOW FREIGHT
Total Depth 23.5
Depth to Water 13.91
Hole Diameter .7'-.3'
Ground Surface Elevation 546.4

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
										0	NO SAMPLING REQUIRED VEGETATION, ROOTS, ORGANIC MATTER, LIGHT BROWN-TAN FINE SAND, SILT & DRY SOME GRAVEL, COBBLES	
									DRY			
									MOIST	2	DARK SAND, SILT, SOME GRAVEL	
										4	OILY ODOR - DARK SILTS, FINE SANDS SOME GRAVEL ? COBBLES	HNU=30 PPM
										6	ANGULAR GRAVEL / COBBLES (FILL) LIGHT BROWN	
									DRY			
									MOIST	10	SAND, SILT, GRAVEL ? COBBLES	COHESIVE HNU = 5. PPM
									WET	11	DARK BROWN - BLACK FINE SAND & SILTS	
									WET	13	DARK BROWN - GREY FINE SAND, SILT (WELL SORTED)	
										13.5	REFUSAL	
									MIN	FT.		
									3.0	14.5		
									3.0	15.5	LIGHT GREY DOLOMITE SMALL SOLUTION CAVITIES	
									3.0	16.5		
									2.5	17.5		
									3.0	18.5		
									2.5	19.5		
									3.0	20.5		

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

LAWLER, MATUSKY & SKELLY ENGINEERS

Boringt No. P-2
Project No. 576-005

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
									3.6	21.5		
									3.0	22.5		
									2.5	23.5		
											SET 2" PVC SCHED 40 MONITORING WELL @ 23.5 10' SLOTTED SCREEN .010 SAND #2 TO 11.5' 3/8 BENTONITE PELLETS TO 10.5 BENTONITE GROUT TO 4' PORTLAND CEMENT TO SURFACE STEEL PROTECTIVE SLEEVE	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LAWLER, MATUSKY & SKELLY ENGINEERS

Data by KPM

Sheet 1 of ___

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-3
Project No. 516-005

Project Name EMERSON STREET

Client NYSDEC

Driller AMERICAN AUGER

Monitoring Instrument(s) +/NU, CGI, MSA, DOSIMETER

SAMPLE HAMMER

Weight — lb

Fall — in.

Date 7/31/89 (start) _____ (finish)

Boring Location SOUTH-BEHIND TRUCKING YARD

Total Depth 30.5'

Depth to Water 17.26 BG

Hole Diameter .7'-.3'

Ground Surface Elevation 542.6

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
									DRY	.2	DARK BROWN SILTY SANDY SOIL SIMILAR TO (TOPSOIL-LOAM)	
										1	COBBLES - ROCKS - BRICKS MIXED SOIL, SAND, GRAVEL	
										3.5	DRILLING BECAME EASIER - LESS DENSE	
									MOIST	12	DARK BROWN - GREY SILT MIXED W/ GLASS	COHESIVE
										15	REFUSAL ON AUGER USED HQ CORE FROM 15	
											15-15.5 VERY LOOSE MUDDY CUTTINGS	
									MIN	ft		
									1.5	15.5	REMOVED .5' CONCRETE CORE	
									3.5	16.5		
									2.5	17.5		
									2.5	18.5		
									2.4	19.5		
									2.5	20.5	PUMPED HOLE - NO WATER ENTERED	
									1.5	21.5	DOLOMITE - GREY	
									2.0	22.5	FEW FRACTURES - VERY COMPETENT	
									2.5	23.5		
									2.75	24.5	PUMPED HOLE - 2 FEET OF RECOVERY	
									5.0	25.5		

LAWLER, MATUSKY & SKELLY ENGINEERS

Boringt No. P-3
Project No. 576-005

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
									2.0	26.5	GREY DOLOMITE CLAY-SILT AT BOTTOM LITTLE f-c SAND MIXED IN CLAY	
									2.3	27.5		
									2.0	28.5		
									2.0	29.5		
									2.2	30.5		
											SATURATED ROCK HAS A MILD SULPHUR ODOR - PUMPED OUT HOLE SET 2" PVC MONITOR WELL @ 30.5' 10' SLOTTED SCHED 40 SCREEN PVC RISER TO SURFACE #2 SAND PACK TO 13' 3/8" BENTONITE PELLETS 13-12.4' BENTONITE SLURRY TO 4' PORTLAND CEMENT TO SURFACE STEEL PROTECTIVE CASING	

f - fine
m - medium
c - coarse

and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

Data by TPM

Sheet 1 of ___

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-4
Project No. 516-005

Project Name EMERSON STREET

Client NYSDEC

Driller AMERICAN AUGER

Monitoring Instrument(s) HNU, CGI, DOSIMETER, MSA

SAMPLE HAMMER

Weight – lb

Fall – in.

Date 8/2/89 (start) 8/2/89 (finish)

Boring Location CENTRAL AREA - FEDERAL STAMPING

Total Depth 16'

Depth to Water 8.41' BG.

Hole Diameter .7-.3'

Ground Surface Elevation 533.5

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
											NO SPLIT SPOON SAMPLES REQ. AUGERED THROUGH BROWN SANDY, SILTY COVER MATERIAL ROOTS, GLASS, WEEDS ON SURFACE	
									MOIST		DARK BROWN - GREY SILTY SAND W/ANGULAR GRAVEL FEW INTERMITTENT COBBLY ZONES	COHESIVE
									NIN	11.	REFUSAL @ 6.0' - HD CORING	
									3.25	7.0		
									3.5	8.0	GREY DOLOSTONE - INTERMITENT	
									2.0	9.0	FRACTURE W/SOME CLAY	
									3.25	10.0	INFILLINGS	
									2.75	11.0		
									1.75	12.0		
									2.5	13.0		
									3.0	14.0		
									3.5	15.0		
									2.0	16.0		
											* PVC MONITOR WELL INSTALLED	
											2 SAND TO 5'	
											10' 2" PVC WELL SCREEN	
											3/8" BENTONITE PELLET SEAL TO 3'	
											PORTLAND CEMENT TO SURFACE	
											PROTECTIVE STEEL CASING	

LAWLER, MATUSKY & SKELLY ENGINEERS

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB-101
SHEET 1 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: E side of Vanguard Pkwy
GROUND SURFACE ELEVATION DATUM
START DATE: 9/27/10 END DATE:

TYPE OF DRILL RIG: CME track mtd
AUGER SIZE AND TYPE: 4.25 -Inch ID Hollow-stem
OVERBURDEN SAMPLING METHOD: Standard 2" ID Split-spoons
ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE bgs BLOWS / 6"	NO.	DEPTH (FEET)	~~N-VALUE~~ /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
1	5 5 10 12	S-1	0-2		1.7'	0.7	grass/topsoil atop f/c gravel (fill) med. br. to lt. br. clayey SILT w/ f/c gravel tr. sand	0.2 ppm 10-15 μR/hr	S
2									
3	8 10 12	S-2	2-4		1.4'	3.5	grayish br. clayey SILT similar to above but reddish br.	0.1 ppm 15-20 μR/hr	S
4	14 3						w/ more clay	0.1 ppm	
5	4 3	S-3	4-6		1.5'		brownish gray Clay, tr. silt very plastic	15-20 peak 22 μR/hr	S
6	4							~~0.1 ppm~~	
7	50/6	S-4	6-6.4		poor 20.5		spoon/auger refusal @ 6.4 similar to above and rock fragments	0.1 ppm 15-20 peak 21 μR/hr	S
8				SLT	cashing	~12:30	5-7/8" roller bit to 8.5' BG 9/27 - begin coring @ 5:30 9/29		
9					60"		Run 1 lt. to med gray Dolostone		
10		R-1	8.5-13.5		5' 100%		small (1/2") quartz intrusion or calcite deposit @ 8.7' low ∠ frac @ 1"; 45° fracs from 1.5" to 6" low ∠ frac @ 9.5"; horiz fracs @: 12", 15.5", 20"		C
11									
12				28" 60" 42% ~~82%~~			22.5", 31.5", 38.5", 41.5" (infilled w/ silt ~~clay~~), 47.5", 48", 56" (1.5" to 6" may be caused by drilling)		
13							No coring water lost in Run 1		
14		R-2	13.5-				Run 2 lost ~15 gal coring water possible water bearing fracture @ ~16'		
15							rock similar to above cavity @ 20.5' horizontal fractures @: 6", 11", 15.5", 19", 23.5", 29 (see page 2		
16									

2.1 socket

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: background 0.1-0.2 ppm PID (Lab mini Rae Lite) 10-15 μR/hr. Ludlum meter (Ashtead)

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.

BORING # LAB 101

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 101
SHEET 2 of 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER:
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: Vanguard Pkwy
GROUND SURFACE ELEVATION: DATUM
START DATE: 9/29/10 END DATE:

TYPE OF DRILL RIG: ATV CME tracked
AUGER SIZE AND TYPE: ~~4.25 Inch ID Hollow stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split spoons~~
ROCK DRILLING METHOD: ~~NX &~~ HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FEET)	~~N-VALUE~~ /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
							calcite deposit @ 18.5'		
17		R-2	13.5 - 18.5	~~53.75~~ ~~58.75~~ 60 90%	~~58.75~~ 60 98%		Run 2 (cont.) horiz. fracs @ 33", 33.5", 38", 52" ~~many~~ ~~the~~ several horiz + vert. fracs from 45" to 49" but likely caused by drilling		C
18									
19									
20		R-3	18.5' - 23.5'	58" 62" 94%	62" 100%		Run 3 loss of ~10 gal cuttings water rock similar to above although slightly darker gray (med) to dk gray hard Dolostone)		C
21									
22							quartz/calcite deposit @ 1.5" to 2" horiz fracs @ 2", 4" (vert + horiz fracs 4" to 6" but appear related to drilling) 10.25", 36", 47", 54.5" (quartz/calcite in 4" frac		
23									
24									
9									
10							EOB @ 23.5' BG		
11									
12									
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:
loss of ~25 gal cuttings water
Kevin says "Nice sump"
i.e., he feels 16' water bearing zone with some water

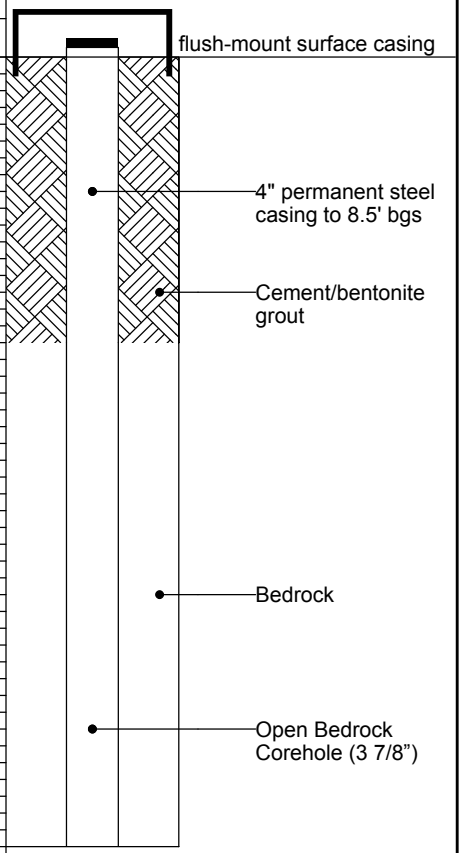
GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE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

BORING #

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York	**Log of Well No. LAB-101**	
BORING LOCATION: East Side of Vanguard Pkwy	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 23.5 fbgs	SCREEN INTERVAL: 8.5-23.5 fbgs
DRILLING EQUIPMENT: CME 55 ATV	DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 2" dia. Split Spoons	LOGGED BY: KRM	
HAMMER WEIGHT: 140 / DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1	1		5 5 10 12	0.2	Brown to reddish brown silty clay with fine to coarse gravel and trace fine sand. Medium plasticity.
2	2		8 10 12 14	0.1	
3					
4			3 4		
5	3		3 4	0.1	
6	4		50/0.6	0.1	Sampler and auger refusal at 6.4' bgs.
7					Advanced 5 7/8” roller bit to 8.5’ bgs.
8					
9					Begin HQ Core run at 8.5' bgs.
10					
11					Run #1 Depth: 8.5-13.5 'bgs Rec: 60" (100%) RQD: 28" (42%)
12					
13					
14					Run #2 Depth: 13.5-18.5 'bgs Rec: 58.75" (98%) RQD: 53.75" (90%)
15					
16					
17					
18					Run #3 Depth: 20.5-23.5 'bgs Rec: 62" (100%) RQD: 58" (94%)
19					
20					
21					
22					Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
23					
24					
25					
26					
27					
28					
29					
30					Rock coring details: *Rough high-angle joints at 8.6 -9.1’ *Low angle joints at 9.2, 10.1’ *Vertical joint 10.4-10.9‘ (tight) *Low angle joint at 11.7’ *Vertical joints at 17.2-17.5‘, 18.7-18.9’
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1575 Emerson

PROJECT: FESL SVI Investigation	Location "I" **Log of Well No.** LAB-103
BORING LOCATION: ~~South Side of ... (Basement)~~	ELEVATION AND DATUM:
DRILLING CONTRACTOR: Nothnagle	DATE STARTED: 9/27/10 · DATE FINISHED:
DRILLING METHOD: 4¼" Ø HSA	TOTAL DEPTH: · SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST · COMPL. · CASING:
SAMPLING METHOD: 4" Acetate sleeves	LOGGED BY: MAL
HAMMER WEIGHT: 140 · DROP:	RESPONSIBLE PROFESSIONAL: · REG. NO.

DEPTH (feet)	Sample No.	Sample	Blows/Foot	OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., consistency, structure, cementation, react. w/HCl geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
			RAD			
2	1	[illegible]	Bkgd	Ø	0-0.5' brown (10YR 5/4) MH/Silt (ML) w/ trace fine sand. Dry, loose 0.5-1.0' - AA w/ weathered shale/fine gravel 1.0-1.3' - waste Shale, coal, clinker, brick,	*collect VOC sample from 5.0-6.0' bgs @ 12:00 -
4						
6	2	[illegible]	Bkgd	Ø	0-0.5 AA Ash material, plastic, glass 1.0-1.5 10YR 4/4 silty sand to (NATIVE) Top sampler refusal @ 6.5' bgs (bearing firm, bearing out @ ~ 6.3' bgs	
8						
10						
12					*Advance 4¼" HSA to 9' bgs. Install 4" Ø permanent casing at 9' bgs.	
14						
16						
18						
20						
22						
24						
26						
28						

W-1 (12/95)

Project No.	Geomatrix Consultants	Figure

W-1 (Blank)

1575 Emerson

LABELLA Associates, P.C. 300 STATE STREET, ROCHESTER, NEW YORK ENVIRONMENTAL ENGINEERING CONSULTANTS	**Subsurface Investigation** FESL City of Rochester, New York	BORING	LAB 103
		SHEET	1 OF
		JOB #	
		CHKD. BY:	

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: ~~S side Emerson S of Laird~~
GROUND SURFACE ELEVATION DATUM
START DATE: 9/28/10 END DATE: 9/28/10

TYPE OF DRILL RIG: ATV CME tracked
AUGER SIZE AND TYPE: ~~4.25 -Inch ID Hollow-stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split-spoons~~
ROCK DRILLING METHOD: ~~NX~~ & HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	~~BLOWS /6"~~	NO.	DEPTH (FEET)	~~N-VALUE~~ /RQD(%)	RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
9–10		R-1	9.1–10.1	0" / 0%	10.0" / 83% / ~~0.875~~ / ~~87.5~~		Run #1 hard med to lt. gray dolostone nearly horiz fractures @ 0.5", 1.5", 3", 5", 6.25" 8.25", 9", + 10.5" (betw 9 & 9.75" highly fracd w/ vert.		C
12–13		R-2	10.1–14.1	21" / ~~48.75~~ / 43%	~~48.75~~ / ~~100%~~	49" / 102%	Run #2 same rock as above highly frac 2.25" to 3", horiz fracs: 4.25", 5.5", 7", 8.5", 10", 13.5" highly frac. 15.5"–17" horiz. frac @: 19" 23", 26", 29", and 46.5"		C
14–18		R-3	14.1–19.1	37" / 60" / 62%	60" / 100%		Run #3 same rock as above vert./horiz fracs from 1" to 6" horiz fracs: 9", 13.5", 16", 19", 20", 22" 26.5", 28", 30.5", 40", 44", 46", 49.5" 54", 58", 59" w/ 45° frac from 54" to 55.5"		C
19–23		R-4	19.1–24'	43 / ~~49"~~ / 59.5" / 72% / 82%	59.0" / 99%		Run 4 same rock as above but perhaps med to dk gray horiz fracs: 2", 4", 5.5", 13", 13.75", 18.75", 19.5", ~~26"~~, 31" (w/ low ∡ frac @ 31.5"), ~~36"~~, 39", 43", 51.5" + 57"		
24–16							EOB @ 24' BG lost a total of ~10 gal of coring water		

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: 4" casing (steel) set @ 9' BG
Run 1 cut short to Δ coring ~~bit~~ bit from "surficial" to "impregnated"

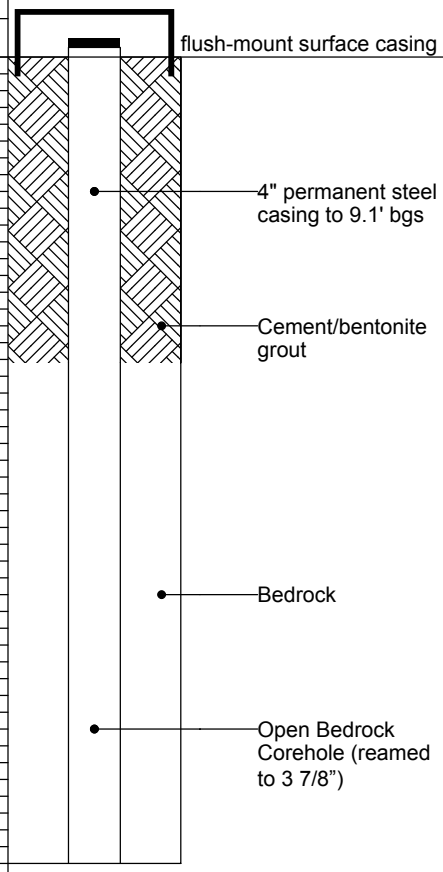
GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE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

BORING #

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York	**Log of Well No. LAB-103**	
BORING LOCATION: 1575 Emerson Street	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 24.0 fbgs	SCREEN INTERVAL: 9.1-24.0 fbgs
DRILLING EQUIPMENT: CME 55 ATV	DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 2" dia. Split Spoons	LOGGED BY: MAC/KRM	
HAMMER WEIGHT: 140 / DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1					Topsoil (ML) brown silt and fine sand, some weathered shale/limestone gravel, loose, dry.
2	1		NA	0	
3					Fill- (FESL Ash) Ash, black coal pieces, clinker, brick plastic, glass
4					
5	1		NA	0	NATIVE brown silt (ML) and some fine sand, moist, firm, becoming saturated at 6.3' bgs. sampler refusal at 6.5' bgs.
6					
7					Advance 4 1/4" HSA to 9.1' bgs.
8					
9					Begin HQ Core run at 9.1' bgs.
10					
11					Run #1 Depth: 9.1-10.1 'bgs Rec: 10" (83%) RQD: 0" (0%)
12					
13					
14					Run #2 Depth: 10.1-14.1 'bgs Rec: 49" (102%) RQD: 21" (43%)
15					
16					
17					
18					Run #3 Depth: 14.1-19.1 'bgs Rec: 60" (100%) RQD: 37" (62%)
19					
20					
21					
22					Run #4 Depth: 19.1-24.0 'bgs Rec: 59" (99%) RQD: 43" (72%)
23					
24					
25					Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
26					
27					
28					
29					
30					
31					
32					
33					Rock coring details: *closely spaced partings 9.1-12' bgs *rubbly seam at 10.0' *severely weathered seams at 10.3-10.5' *short vertical joint at 11.5' *rough vertical joints at 14.1-14.5', 14.8-15.2' *short irregular vertical joint at 18.7-18.8' *rough low angle joint at 21.7'
34					
35					
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1684 Emerson

PROJECT: FESL SVE investigation

LOCATION "B"

Log of Well No. LAB-104

BORING LOCATION: S side ~~of Emerson @ McCartneyville~~	**ELEVATION AND DATUM:**
DRILLING CONTRACTOR: Nothnagle	**DATE STARTED:** 9/27/10 — **DATE FINISHED:**
DRILLING METHOD: 4¼" Ø HSA	**TOTAL DEPTH:** — **SCREEN INTERVAL:**
DRILLING EQUIPMENT: CME 850	**DEPTH TO WATER:** FIRST 6-7 — COMPL. — **CASING:**
SAMPLING METHOD: 4' Acetate sleeves	**LOGGED BY:** MNE
HAMMER WEIGHT: 140# — **DROP:** Auto	**RESPONSIBLE PROFESSIONAL:** BM — **REG. NO.**

DEPTH (feet)	Sample No.	Sample	Blows/Foot	OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl, geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
2	1	2.5	NA	Ø	0-6" - Brown (10YR 3/4) topsoil, dry, loose - 6"-2.5' - waste/fill, brown silt (ML) w/ fine sand, trace asp, brick, glass, coal clinker, coal cinders. MOIST throughout trace fine rounded gravel.	* sample LAB-104 11-12' collected at 1400.
6	2	1.5	NA	Ø	0-6" AA. 6"-1.0' - gray shale/ls bedrock fragments. 1.0'-1.5' saturated, AA (6"-1.0') w/ brown silt matrix. loose throughout.	
10	3	2.5	NA	Ø	NO odors - ML fine sand with silt, soft, saturated, top 6" mottled dark gray to light tan/brown - slight septic odor. Moist bottom 2.5' of sample. NATIVE	
14	RAD		blind through		→ sampler refusal. No sample 12.0 [12.2 bgs ref] * advance ~~4~~ 4" Ø permanent steel casing to 14' bgs.	* hole reamed with 3⅞" roller bit to 24' bgs.
18					9/28/10 - Begin ~~HQ~~ NX core run @ 14' bgs	* Drill rate ~2 min/ft. * NO water loss
20					Run # 1 14-24' REC: ~~10/10'~~ 119" - 99%; RQD: ~~3.2/10'~~ 42" - 35%; LITH: Lockport Dolomite (?)	* HOLE Flushed with potable water to remove drill cuttings, well purged dry & allowed to recover.
24					Hard Gray Limestone w/ shale interbeds frequent mechanical breaks along shale beds throughout. few small 1-2 mm vugs throughout large vug w/ calcite precipitation - open horizontal fractures prevalent where shale interbeds dominate. No vert. fractures	all vert. fractures in core are mech. breaks.

OPEN 3⅞" COREHOLE 14-24'

W-1 (12/95)

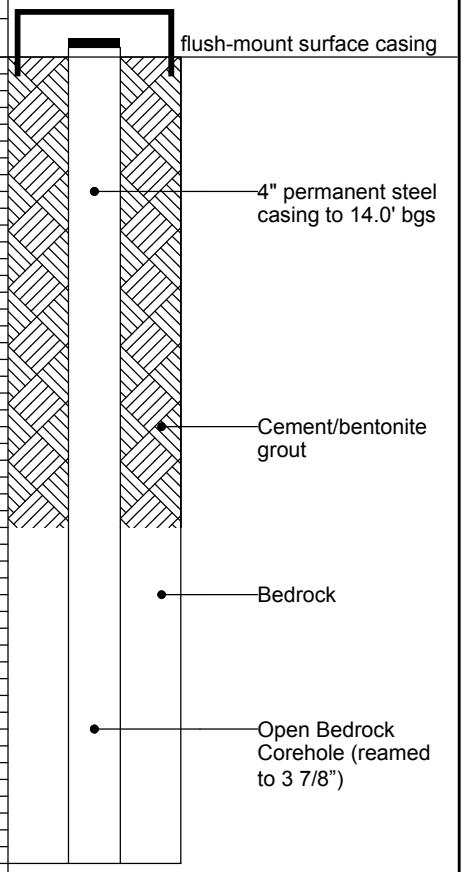
Project No.	**Geomatrix Consultants**	Figure

W-1 (Blank)

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York	**Log of Well No. LAB-104**	
BORING LOCATION: 1684 Emerson Street	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/27/10	DATE FINISHED: 9/28/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 24.0 fbgs	SCREEN INTERVAL: 14.0-24.0 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler	LOGGED BY: MAC	
HAMMER WEIGHT: 140 / DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1					Topsoil (ML) brown silt and fine sand, loose, dry.
2	1		NA	0	Fill: brown silt with fine sand (ML), trace ash, brick, glass, coal clinker, coal cinders. Trace fine rounded gravel. Moist throughout.
3					
4					
5					grey shale and limestone bedrock gravel
6	2		NA	0	Fill, as above. Saturated
7					
8					
9					
10	3		NA	0	NATIVE dark grey to light tan-brown find sand with silt (ML), soft, saturated top 6", slight septic odor.
11					
12	4		NA	0	sampler refusal at 12.2' bgs.
13					
14					Advanced roller bit to 14.0' bgs.
15					
16					Begin NX bedrock core at 14.0' bgs.
17					
18					Run #1 Depth: 14.0-24.0 'bgs Rec: 119" (99%) RQD: 42" (35%) Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					Rock coring details: *moderately closely spaced partings throughout *vertical joint at 17.8-18.0' bgs *rough high angle joint at 18.3-18.6' *vug with secondary gypsym at 21.7' *severely weathered, intersecting high angle joints at 22.4-22.5' *rough vertical joint at 21.7-22.0' *occassional pits and vugs throughout.
32					
33					
34					
35					
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



1769 Emerson

PROJECT: FDL SVE INVESTIGATION	Location "A" **Log of Well No.** LAB-106
BORING LOCATION: ~~SW Corner of W Emerson~~	ELEVATION AND DATUM:
DRILLING CONTRACTOR: NORTHWESTERN	DATE STARTED: 9/28/10 / DATE FINISHED:
DRILLING METHOD: 4¼" ID HSA	TOTAL DEPTH: / SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: FIRST / COMPL. / CASING:
SAMPLING METHOD: 4' Acetate sleeves	LOGGED BY:
HAMMER WEIGHT: 140# / DROP: Auto	RESPONSIBLE PROFESSIONAL: / REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	Sample	Blows/6"	OVM Reading (ppm)	DESCRIPTION: NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl. geo. inter. Surface Elevation:	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
2	1	2.2'	RAD wet	Ø	0-1.0' (ML) brown silt & fs. loose, dry (topsoil). 10YR 5/4	
4					1.0-2.2' Fill brown fs w/ silt, trace brick pieces, coarse angular limestone/lsh. gravel, loose, dry -	
6	2	3.0	wet	Ø	→ Auger thought obstruction	
8					→ loose gravel-fill (Af) sampler bouncing @ 5.5' bgs. Augers grinding evenly @ 5.5' bgs.	* NO ANALYTICAL SAMPLE COLLECTED
10					* install 4" ID perm. casing @ 5.5' bgs.	
12						
14						
16						
18						
20						
22						
24						
26						

Project No.	Geomatrix Consultants	Figure

W-1 (12/95)

W-1 (Blank)

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 106
SHEET 1 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin / Tom
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: W St. + Emerson "A"
GROUND SURFACE ELEVATION DATUM
START DATE: 9/29/10 END DATE:

TYPE OF DRILL RIG: ATV CME
AUGER SIZE AND TYPE: ~~4.25 Inch ID Hollow-stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split-spoons~~
ROCK DRILLING METHOD: ~~NX &~~ HQ Water Rotary Coring

WATER LEVEL DATA				
DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FEET)	SAMPLE N-VALUE /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
10									
11		R-1	10.5 – 15.5	55" / 59.5 / 92%	59.5" / 60" / 99%		Run 1 med gray hard Dolostone w/ calcite? soln. cavities @ 11" to 12" 21" to 22" and 44" horiz fracs @ 13", 14", 31", 40", & 52" low ∠ frac @ 48"		C
12									
13									
14		CAL			~~60.75~~" ~~100%~~		water return near 100%		
15									
16		R-2	15.5 – 20.5	60" / 98% / ~~100%~~	~~60.75~~" / 61" / 100%		rock similar to above but no obvious soln. cavities horiz fracs @ & 14", 30.25", 51.75" & 56.25"		C
17									
18									
19							water return near 100%		
20							rock similar to above but perhaps slightly darker (med to dk gray, hard Dolostone) horiz. fracs @ 12" & 49"		
21									
22		R-3	20.5 – 25.5	~~100%~~ / 58" / 94%	100% / 60"		soln cavity (calcite?) @ 59" water return near 100%		C
23									
24									
25									
26									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES: Casing set 2' into rock @ ~~10.5~~ 10.5' BG by others

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.

BORING # LAB 106

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

Subsurface Investigation
FESL
City of Rochester, New York

BORING LAB 106
SHEET 2 OF 2
JOB # 210173
CHKD. BY:

CONTRACTOR: Nothnagle Drilling Co.
DRILLER: Kevin
LABELLA REPRESENTATIVE: K R Miller

BORING LOCATION: ~~W S.t. & Emerson "A"~~
GROUND SURFACE ELEVATION DATUM
START DATE: 9/29/10 END DATE: 9/29/10

TYPE OF DRILL RIG: ATV CME Tracked
AUGER SIZE AND TYPE: ~~4.25 inch ID Hollow-stem~~
OVERBURDEN SAMPLING METHOD: ~~Standard 2" ID Split-spoons~~
ROCK DRILLING METHOD: ~~NX &~~ HQ Water Rotary Coring

WATER LEVEL DATA

DATE	TIME	WATER	CASING	REMARKS

DEPTH	SAMPLE BLOWS / 6"	SAMPLE NO.	SAMPLE DEPTH (FEET)	SAMPLE ~~N-VALUE~~ /RQD(%)	SAMPLE RECOVERY (FEET)	DEPTH (Feet)	SAMPLE DESCRIPTION	PID READINGS	NOTES
26									
27		R-4	25.5	58.0"	61"		Run 4 rock similar to above 1/4 horiz. frac @ 3.5" (water bearing?) horiz frac @ 15", 41", & 51"		
28		x	30.5	6'	100%				
29				94%					
	x	x	x	x	x	x	x	x	x
30							loss of 10-15 gal of water during run 4		
31									
6							EOB @ 30.5' BG		
7							post-install well development: developed using rig pump for ~1 hr - 35+/- gal extracted; fairly clear water		
8									
9									
10									
11							post initial development		
12									
13									
14									
15									
16									

LEGEND
S - SPLIT SPOON SOIL SAMPLE
M - MACROCORE SOIL SAMPLE
C - ROCK CORE SAMPLE

NOTES:

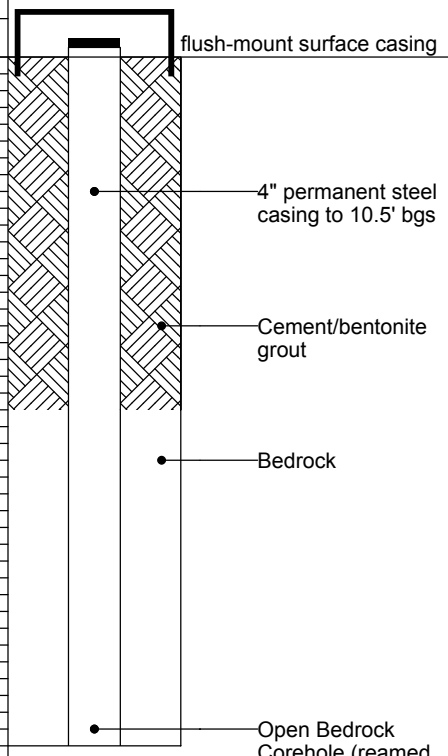
GENERAL NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE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

BORING #

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York			**Log of Well No. LAB-106**
BORING LOCATION: 1769 Emerson Street		TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling		DATE STARTED: 9/27/10	DATE FINISHED: 9/29/10
DRILLING METHOD: 4 1/4" Diameter HSA		TOTAL DEPTH: 30.5 fbgs	SCREEN INTERVAL: 10.5-30.5 fbgs
DRILLING EQUIPMENT: CME 850		DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler		LOGGED BY: MAC/KRM	
HAMMER WEIGHT: 140	DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1					Topsoil (ML) brown silt and fine sand, loose, dry.
2	1		NA	0	FILL- brown fine sand with silt, trace brick pieces, angular limestone shale gravel, loose, dry.
3					
4					
5					Auger through obstacle between 4.0 and 5.0' bgs.
6					
7	2		NA	0	loose, gravel fill as above.
8					Sampler refusal at 8.5' bgs.
9					Advance 4 1/4" HSA to 10.5' bgs.
10					
11					Begin HQ Core run at 10.5' bgs.
12					Run #1 Depth: 10.5-15.5 'bgs Rec: 59.5" (99%) RQD: 55" (92%)
13					
14					
15					
16					Run #2 Depth: 15.5-20.5 'bgs Rec: 61" (100%) RQD: 60" (98%)
17					
18					
19					
20					Run #3 Depth: 20.5-25.5 'bgs Rec: 60" (100%) RQD: 58" (94%)
21					
22					
23					
24					Run #4 Depth: 25.5-30.5 'bgs Rec: 61" (100%) RQD: 58" (94%)
25					
26					
27					
28					Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
29					
30					
31					
32					
33					
34					
35					
36					Rock coring details: *cavities (0.1' dia.) at 11.1' and 12.2' bgs *vertical joint at 12.8-13'
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-1
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	533.5	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-24-02	**Completed**	10-24-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots, 1-4 foot diameter boulder 1'2" Compact red-brown damp SILT, some fine sand, some gravel, little cobbles, few boulders (Probable fill)
4			
6			4'5" Compact to dense red-brown moist SILT, some fine sand, little gravel, few cobbles, few boulders
8			7'8" Refusal at 7'8"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-2
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	529.5	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-24-02	**Completed**	10-24-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, trace asphalt
4			2'6" Compact to dense brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
6			4'6" Refusal at 4'6"
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No. 2599.0 **Page** 1 **of** 1 **Test Pit No.** KS-3
Project Name Klein Steel Facility, Emerson Street, Rochester, New York
Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
Elevation 530.1 **Weather** Overcast, 40° **Inspector** E. Ashley
Date Started 10-24-02 **Completed** 10-24-02 **Operator** John
Backhoe Subcontractor Arrow Contracting, Inc. **Equipment** CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots 1'1" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			3'0" Refusal at 3'0"
6			
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No. 2599.0 **Page** 1 **of** 1 **Test Pit No.** KS-4
Project Name Klein Steel Facility, Emerson Street, Rochester, New York
Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
Elevation 532.8 **Weather** Overcast, 40° **Inspector** E. Ashley
Date Started 10-24-02 **Completed** 10-24-02 **Operator** John
Backhoe Subcontractor Arrow Contracting, Inc. **Equipment** CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			TOPSOIL, little roots 1'0" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4	S-1	3'6"	Hard digging below 4'
6			
8			8'0" Refusal on bedrock at 8'0"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-5
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	535.1	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-24-02	**Completed**	10-24-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications / Remarks
2			TOPSOIL, little roots 1'0" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			Grades to dense below 4'
6			
8			8'0" Refusal at 8'0"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No. 2599.0 **Page** 1 **of** 1 **Test Pit No.** KS-6
Project Name Klein Steel Facility, Emerson Street, Rochester, New York
Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
Elevation 529.9 **Weather** Overcast, 40° **Inspector** E. Ashley
Date Started 10-24-02 **Completed** 10-24-02 **Operator** John
Backhoe Subcontractor Arrow Contracting, Inc. **Equipment** CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots 1'0" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			4'0" Refusal at 4'0"
6			
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-7
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	532.1	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots, few cobbles, few boulders (surface) 0'8" Compact to dense red-brown mottled damp SILT, some fine sand, little gravel, few cobbles, few boulders
4			
6			4'9" Refusal on bedrock at 4'9"
8			
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-8
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	532.8	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots, few cobbles, few boulders (surface) 1'0" Firm grey damp SILT, trace sand 1'9" Compact to dense red-brown mottled moist SILT, little fine sand, little gravel, few cobbles
4	S-1	3'0"	
6			Hard digging below 5'
8			7'0" Refusal on bedrock at 7'0"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-9
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	533.4	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL, little roots, few cobbles (surface) 1'1" Compact tan damp SILT, some fine sand, little gravel, few cobbles, few boulders
4	S-1	4'0"	Grades to dense, moist below 4'
6			Hard digging below 5'
8			6'5" Refusal at 6'5"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No. 2599.0 **Page** 1 **of** 1 **Test Pit No.** KS-10
Project Name Klein Steel Facility, Emerson Street, Rochester, New York
Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
Elevation 536.9 **Weather** Overcast, 40° **Inspector** E. Ashley
Date Started 10-23-02 **Completed** 10-23-02 **Operator** John
Backhoe Subcontractor Arrow Contracting, Inc. **Equipment** CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			BLASTED ROCK FRAGMENTS, trace concrete baluster, trace tire 1'0" to 2'0" TOPSOIL, little roots 1'9" Firm brown moist TOPSOIL FILL, little roots, trace plastic, few cobbles
4			3'0" Compact to dense red-brown damp SILT, some fine sand, little gravel few cobbles, few boulders Hard digging below 4'
6	S-1	4'6"	Grades to little cobbles below 6'
8			
10			8'10" Refusal at 8'10"
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.

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Test Pit Log

Project No. 2599.0 **Page** 1 **of** 2 **Test Pit No.** KS-11
Project Name Klein Steel Facility, Emerson Street, Rochester, New York
Client Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614
Elevation 541.0 **Weather** Overcast, 40° **Inspector** E. Ashley
Date Started 10-24-02 **Completed** 10-24-02 **Operator** John
Backhoe Subcontractor Arrow Contracting, Inc. **Equipment** CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			TOPSOIL 1'2" Compact brown moist SILT, little gravel, little shot rock, trace sand, trace concrete, plastic, wood, brick, metal (FILL)
4			3'8" Firm black moist TOPSOIL, little organic, little wood, trace glass, few boulders to 36 inches in diameter (FILL)
6	S-1	6'0"	
8			
10			
12	S-2	12'0"	10'6" Firm brown moist SILT, little gravel, trace sand, few cobbles, few boulders
14			14'0"

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Test Pit Log

Project No.	2599.0	**Page** 2 **of** 2		**Test Pit No.**	KS-11
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	541.0	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-24-02	**Completed**	10-24-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
16			Test pit terminated at 14'0"
18			
20			
22			
24			
26			
28			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-12
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	536.4	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm black moist TOPSOIL, little ash, glass, plastic, bottles, trace tire, one rusted/decomposed 50 gallon drum (slight odor noted, no detectable reading on the Mini-Rae) (FILL)
4			
6	S-1	5'6"	4'10" Firm tan moist SILT, trace clay, trace sand, trace gravel, few cobbles
8			8'0" Refusal at 8'0"
10			
12			
14			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm manhole rim elevation 535.37 on the north side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 2		**Test Pit No.**	KS-13
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	547.3	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm brown moist SAND, some gravel, trace silt (FILL)
4			1'0" to 3'0" Firm black moist TOPSOIL, little organic, wood, plastic, concrete pieces, asphalt, cobbles (FILL)
6			
8			
10			
12			
14			

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Test Pit Log

Project No.	2599.0	**Page** 2 **of** 2		**Test Pit No.**	KS-13
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	547.3	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
16			Test pit terminated at 14'0" in fill
18			
20			
22			
24			
26			
28			Notes: 1. Sides vertical. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 1		**Test Pit No.**	KS-14
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	543.5	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm brown moist SAND, little gravel, trace silt, few cobbles (FILL) 1'8" Firm black moist TOPSOIL, some gravel, little roots, little organic, asphalt, concrete pieces, brick, wire, blasted rock fragments (FILL)
4			
6			
8			
10			
12			11'9" Shovel refusal in blasted rock fragments at 11'9"
14			Notes: 1. Sides caved below 9'. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 2		**Test Pit No.**	KS-15
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	544.2	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: Firm brown to grey mottled moist to wet 80% silt, sand, gravel 20% rock fragments, logs, concrete fragments, carpet, brick 3' diameter topsoil pocket noted at 3'
4			
6			5'9" BLASTED ROCK FRAGMENTS
8			
10			9'10" TOPSOIL
12			10'6" Compact red-brown moist SILT, some fine sand, little gravel
14			14'0"

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Test Pit Log

Project No.	2599.0	**Page** 2 **of** 2		**Test Pit No.**	KS-15
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	544.2	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
16			Test pit terminated at 14'0"
18			
20			
22			
24			
26			
28			Notes: 1. Sides raveled continuously between 5 feet and 10 feet while digging. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.

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Test Pit Log

Project No.	2599.0	**Page** 1 **of** 2		**Test Pit No.**	KS-16
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	544.8	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			Firm black moist TOPSOIL, little organic, trace to little wood, wire, tires, brick, concrete pieces to 3'x3'x2', plastic, glass, asphalt, metal pipe, 1 metal C-channel (FILL)
4	S-1	4'0"	
6			
8			
10			
12			Little to some blasted rock fragments below 11'0"
14			14'0"

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Test Pit Log

Project No.	2599.0	**Page** 2 **of** 2		**Test Pit No.**	KS-16
Project Name	Klein Steel Facility, Emerson Street, Rochester, New York				
Client	Day Environmental, Inc. 40 Commercial Street, Rochester, New York 14614				
Elevation	544.8	**Weather**	Overcast, 40°	**Inspector**	E. Ashley
Date Started	10-23-02	**Completed**	10-23-02	**Operator**	John
Backhoe Subcontractor	Arrow Contracting, Inc.			**Equipment**	CAT 315B excavator

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
16			Test pit terminated in the fill at 14'0"
18			
20			
22			
24			
26			
28			Notes: 1. Sides sloughed from surface while excavating. 2. Dry on completion. 3. Survey elevation referenced from storm sewer rim elevation 530.67 on the south side of the site.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B123

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: U.D.C
(See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8 ft. while standard sampling.

ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5		5 3 2 2	S1 20"/24"	3.0 5.0		Loose brown iron-stained ASH, granular with medium to fine sand-size particles, with glass and cinders, trace wood, dry. -FILL-
						Same, except with brick, some silt, damp. -FILL-
10		5 55 100/.3	S2 12"/18"	8.0 9.3	8.8 9.3	Hard, highly weathered, gray-brown, fine-grained, DOLOSTONE, wet. -LOCKPORT FORMATION-
						Bottom of Boring at 9.3 ft.
15						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 10 ppm methane S2 = 2 ppm methane in fill material and non-detect in native materials No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S1 (and duplicate) and portion of S2 was submitted for TCLP metals and hazardous characteristics analyses.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	9.3
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B123

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B124

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Yellow Freight (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft.

ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5		4 3 2 2	S1 14"/24"	3.0 5.0		Loose brown to black ASH, with glass and fine gravel-size slag, trace twigs and roots, dry. -FILL-
		5 6 8	S2 11"/24"	8.0 10.0	9.2	Loose brown to black ASH, with wood and brick, damp. -FILL-
10		100/.5				Hard, highly weathered, gray-brown, fine grained, DOLOSTONE. -LOCKPORT FORMATION-
						Bottom of Boring at 10.0 ft.
15						Notes: 1. Borehole backfilled to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 2 ppm methane S2 = 6.5 ppm methane No OVA readings above background in breathing zone. 3. No explosiometer or radioactivity meter readings above background from sample screening or in the breathing zone.
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B124

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B125

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: DeCarolis Trucking (See Plan)

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 13.0 ft.

ELEVATION: ---
DATUM: ---
START: 16 May 1993
FINISH: 16 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		50 40 8 8	S1 5"/24"	3.0 5.0		Dense black and light gray ASH, iron stained, with glass, trace cinders, moist.
5						-FILL-
					6.5	
		1 1 2 1	S2 10"/24"	8.0 10.0		Soft brown to black clayey SILT, with wood and other organic material, wet.
10						-MARSH DEPOSIT-
					11.5	
					13.0	Completely to highly weathered, medium gray-brown, fine-grained DOLOSTONE. -LOCKPORT FORMATION-
		50/.2	S3 2"/3"	13.0 13.2		Bottom of Boring at 13.2 ft.
15						
20						
25						

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = ppm
   S2 = 20 ppm methane
   S3 = 25 ppm methane
   500 ppm methane inside borehole. No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	13.2
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B125

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B126

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: DeCarolis Trucking (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Spring
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		4 4 3 3	S1 20"/24"	3.0 5.0		Loose red-brown to black ASH with glass, metal slag and cinders. -FILL-
		2 2 1 100/.5	S2 10"/24"	8.0 10.0	9.2	Loose black ASH with glass, piece of rubber. -FILL-
						Mottled brown fine SAND, overlying hard, highly to completely weathered, gray-brown, (fine-grained DOLOSTONE) -RESIDUAL SOIL ABOVE LOCKPORT FORMATION-
						Bottom of Boring at 10.0 ft.

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 0 ppm
   S2 = 3 ppm methane from ASH
   0 ppm in SAND
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
4. S1 submitted for full TCLP analyses.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B-126

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B127

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Abrasive Tool (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
CASING TYPE:4-1/4 in. I.D. H.S. Auger
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		3 3 2 2	S1 18"/24"	3.0 5.0		Loose dark brown and red-brown ASH with glass, metal slag, and charred newspaper, dry. -FILL-
					6.5	
		100/.1	S2 2"/2"	8.0 8.1	8.1	Hard, highly weathered, gray-brown, fine-grained DOLOSTONE. -LOCKPORT FORMATION-
						Bottom of Boring at 8.1 ft.

Notes:

1. Borehole backfilled to ground surface with soil cuttings.
2. No OVA, explosimeter, or radioactivity meter readings above background were detected in fill materials or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	8.1
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B127

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B128

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: DeCarolis Trucking/ Yellow Freight
ELEVATION: ---
DATUM: ---
START: 16 May 1993
FINISH: 16 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 11.2 ft.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5		6 5 5 4	S1 4"/24"	3.0 5.0		Loose black ASH, with iron staining, trace glass and cinders (with air bubbles), wet. -FILL-
10		2 1 3 4	S2 3"/24"	8.0 10.0		Very loose black ASH, trace glass and fine gravel, wet. -FILL-
						Auger Refusal at 11.2 ft. Bottom of Boring at 11.2 ft.

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 35 ppm methane
   S2 = 70 ppm methane
   1000 + ppm methane in borehole
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	11.2 ft.
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B128

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B129

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: DeCarolis Trucking (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		5 5 3 10	S1 12"/24"	3.0 5.0		Loose black ASH with glass, brick, wood, white cinders and paper, damp. -FILL-
5						Same, except wet. -FILL-
		2 2 2 100/.5	S2 18"/24"	8.0 10.0	8.5 9.6	Loose gray fine SAND, wet. -LACUSTRINE/FLUVIAL- Moderately hard, highly weathered, gray, fine-grained DOLOSTONE, wet. -LOCKPORT FORMATION-
10						Bottom of Boring at 10.0 ft.
15						
20						
25						

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 8 ppm methane
   S2 = 5 ppm methane
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
4. Sample S1 was submitted for TCLP metals and hazardous characteristics analyses. Sample S1 was taken with a 3 in. split spoon sampler.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B-129

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B130

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Rochester Ferrano St. R.O.W. (See Plan)
ELEVATION: ---
DATUM: ---
START: 18 May 1993
FINISH: 18 May 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mount
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 5.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		5 10 12 12	S1 24"/24"	3.0 5.0		Medium dense brown fine SAND, little subrounded gravel, little coarse to medium sand, moist. -FLUVIAL-
5						Bottom of Boring at 5.0 ft.
10						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. No OVA, explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
15						
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	5.0
ROCK CORED (LIN FT):	---
SAMPLES:	1S
BORING NO.	B-130

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B131

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Printing Methods, Inc. (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		5 3 2 2	S1 5"/24"	3.0 5.0		Loose black ASH with glass and cinders, trace wood and other organic material, wet. -FILL-
5						Same. -FILL-
		5 70 100/.4	S2 16"/18"	8.0 9.4	8.3 9.4	Moderately hard, highly to completely weathered, gray-brown, fine grained DOLOSTONE, damp. -LOCKPORT FORMATION-
10						Bottom of Borehole at 9.4 ft.
15						
20						
25						

Notes:

1. Borehole backfilled to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 32 ppm methane
   S2 = 12 ppm methane
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	9.4
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B131

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B132

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: DeCarolis Trucking (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 10.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
						No readings from radiation meter or explosimeter. * 1000 ppm methane in borehole.
5		11 14 8 5	S1 15"/24"	3.0 5.0		Medium dense gray-black silty fine SAND, some coarse sand, little gravel, with ash, trace glass, moist to wet. -FILL-
					6.5	
10		9 12 13 19	S2 12"/24"	8.0 10.0		Medium dense gray-brown silty fine SAND, trace coarse sand, wet. -LACUSTRINE/FLUVIAL-
15						Bottom of Boring at 10.0 ft.
20						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 100 ppm methane S2 = 100 ppm methane OVA reading was 1000+ ppm methane in the borehole. No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B-132

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B133

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: DeCarolis Truck Rental, Inc. (See Plan)
ELEVATION: ---
DATUM: ---
START: 17 May 1993
FINISH: 17 May 1993
DRILLER: S. Loranty
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Truck Mounted, CME-75
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: ---

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5		3 2 2 2	S1 10"/24"	3.0 5.0		Very loose black ASH with glass, metal slag, ceramic fragments, wood and what appears to be cardboard or dry wall. -FILL-
						Same.
10		3 4 3 100/.3	S2 16"/21"	8.0 9.8	8.4	Very dense gray-brown mottled red and yellow silty CLAY, some sand, wet. -GLACIAL TILL (SUBSOIL)-
						Bottom of Boring at 9.8 ft.

Notes:

1. Borehole backfilled to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 0 ppm
   S2 = 2 ppm (methane)

   No OVA readings above background in breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	9.8 ft.
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B133

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B134

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: Browning-Ferris Ind. (See Plan)
ELEVATION: ---
DATUM: ---
START: 18 May 1993
FINISH: 18 May 1993
DRILLER: S. Loranty
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES
RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: ---

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
5		11 11 7 7	S1 15"/24"	3.0 5.0	6.5	Medium dense black ASH or CINDERS with possible coal fragments, moist, uniform fine sand size particles. -FILL-
10		3 4 5 9	S2 18"/24"	8.0 10.0		Loose gray-brown fine SAND, trace coarse to medium sand, wet. -LACUSTRINE/FLUVIAL-
15						Bottom of Boring at 10.0 ft.
20						Notes: 1. Borehole backfilled to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 25 ppm (methane) S2 = 0 ppm 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION
O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY
OVERBURDEN (LIN FT): 10.0 ft.
ROCK CORED (LIN FT): ---
SAMPLES: 2S
BORING NO. B134

DS-4

DATE
STARTED 11-19-79
FINISHED 11-19-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-1
SURF ELEV 537.36
G W DEPTH See Note

PROJECT Outer Loop Industrial Park
LOCATION Rochester, New York

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0" / 6" / 12" / 18" / N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1 1 3		TOPSOIL 2"	Note #1: Groundwater information: Boring complete, Casing @ 10.0' 12:00-Augers in Water @ 6.5' 12:10-Augers out Water @ 6.5'
			11 5	14	Fill: Black CINDERS, little grass, paper, ash, silt, wood, gravel	
		2	4 3			
			3 2	6		
5		3	1 2			
			1 1	3		
		4	1 1			
			1 1	2		
		5	1 1			
10			1 2	2	(Moist-Loose to Firm) 10.0'	
		6	50/.0 No Recovery		Gray DOLOSTONE, slightly calcareous, sound, medium hard, slightly fractured w/a soft, weathered shaley zone from 10.8 to 12.0'	Run #1 10.0'-15.0' Recovered 90%
					Bottom of Hole @ 15.0'	

N = No blows to drive 2 "spoon 12 "with 140 lb pin wt. falling 30 "per blow.
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

BS-4

DATE
STARTED 11-21-79
FINISHED 11-21-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-2
SURF ELEV 535.60
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0"/6"	6"/12"	12"/18"	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	3				Fill: Brown ASH & GLASS, Some Silt, Some Wood (Damp)	Note #1: Groundwater information: Boring complete, Casing @ 10.0' Water @ 6.8'
			4	1		7		- grades trace brick	
		2	1	1					
			1	2		2			
5		3	1	1				- grades Some Brick	
			2	1		3		- grades wet @ 7.0', little brick, Some fine Sand	
		4	2	2	7				
		5	2	6				- SILT, Some fine Sand, trace brick, ash, glass	Augers out, hole caved
10			6	17		12		-decomposed rock (Damp) (Damp to Wet-Loose to Very Compact)	
		6	100/.2					Auger Refusal @ 10.2'	
15									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-21-79
FINISHED 11-21-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-3
SURF ELEV 537.94
G W DEPTH See Note #

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	6				Fill: Brown ASH & GLASS, Some Silt, Some fine Sand	Note #1: Groundwater information: Boring Complete, Casing @ 15.0', Water @ 11.0'
			8	8		14		-grades Some Glass, trace wood	
		2	6	6					
			3	4		9			
5		3	6	6				-grades little wood	
			3	2		9			
		4*	2	2					* No Recovery
			2	1		4			
		5	4	11				-grades wet, SILT & fine SAND, Some Ash	
10			14	15		25		(Damp to wet-Loose to Firm) 9.5'	
		6	17	24				Brown SILT & fine SAND, trace embedded fine gravel	
			27	25		51			
		7	20	21				-grades little fine to medium gravel, little medium to coarse sand (TILL)	
15								(Damp-Very Compact)	
		8	112/.5					Auger Refusal @ 15.5'	
20									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-19-79
FINISHED 11-19-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-4
SURF ELEV 539.28
G. W. DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH IN FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	3	7				TOPSOIL 2"	Note #1: Groundwater information: Boring Complete, Casing @ 14.0', 3:00 p.m., Augers in, No free water in boring
			9	5		16		Fill: Black CINDERS, Some Brick, Some Wood, little glass, ash, silt (Damp)	
		2	5	4					
			4	3		8		- grades and BRICK, Some Silt	
5		3	2	2					
			2	3		4		-grades little brick, little silt	
		4	2	2				-grades moist @ 6:0'	
			2	7		4		-grades Some Wood, little garbage	
		5	1	1				- grades and WOOD	
10			1	3		2			
		6	2	3				(Damp to Moist-Loose to Firm) 11.5'	3:10 p.m., Augers out, Water @ 8.5'
			3	3		6		Brown SILT, SAND, GRAVEL	
								(Wet-Loose) 12.0'	
15								Auger Refusal @ 14.0'	

N = No. blows to drive 2 "spoon 12 "with 140 lb pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-20-79
FINISHED 11-20-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-5
SURF ELEV 536.42
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	18/24	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	5	8				Fill: Brown SILT, Some Wood, trace fine gravel, trace glass	Note #1: Groundwater information: Boring complete, Casing @ 6.6', Water @ 2.0'
			8	4		16		- grades and ASH, little gravel	
		2	2	1				- grades and WOOD, trace gravel	Note#2: Top of Rock @ 6.6'
			1	1		2		- decomposed rock	
5		3	2	2					
			2	7		4		(Damp-Loose to Very Compact) 6.8'	Run #1: 6.6'-9.8' Recovered 100%
		4	47	100/.1					
10									
15									

N = No. blows to drive 2 "spoon 12 "with 140 lb pin wt. falling 30 "per blow
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3½" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-21-79
FINISHED 11-21-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-6
SURF ELEV 538.01
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	9	14				TOPSOIL 2"	Note #1: Groundwater information: Boring complete, casing @ 8.0', no free water in boring at completion.
			31	14		45		Fill: Black CINDERS, Some Silt, little glass, gravel, brick	
		2	9	3				- grades SILT & fine to coarse SAND, Some Wood, little gravel, glass, cinders (Damp-Cmpct. to V.Cmpct.) 5.0'	
			88	2		91			
5		3	3	4				Brown SILT & fine SAND, Some fine to medium Gravel	
			6	7		10		-grades Some fine Sand (Moist-Loose to Very Compact)	
		4	3	3					
			5	5		8		Auger Refusal @ 8.5'	
		5	68						
10									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-19-79
FINISHED 11-19-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-7
SURF ELEV 538.25
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER # 0 / 6 / 12 / 18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	3 5	10		Fill: Black CINDERS, Some Silt, little glass, wood, paper, ash, gravel	Note #1: Ground-water information: Boring complete, Casing @ 11.5', No free water in boring @ comple-tion. Augers out, no free water
			5 7			(Damp-Loose) 3.5'	
		2	7 9	20		Brown SILT, Some fine Sand	
			11 54			(Damp-Firm to Compact) 5.5'	
5		3	19 14	34		Brown fine SAND & SILT, little fine gravel	
			20 22				
		4	8 12	28			
			16 23				
		5	42 34				
10			27 42				
		6	34 50	136			
			86			(Damp-Compact to Very Compact)	
15						Auger Refusal @ 13.5'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-21-79
FINISHED 11-21-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-8
SURF ELEV 538.81
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	3	5				Fill: Black CINDERS, little glass, ash (Damp)	Note #1: Ground-water information: Boring Complete, Casing @ 8.0', No free water in boring at completion.
			12	8		17			
		2	5	5					
			4	8		9			
5		3	3	2				- layer of leaves 5.0'-6.8' (Wet)	
			1	1		3			
		4	1	1				- grades moist	
			14	9		15			
		5	4	4				- grades Gray SILT, little cinders, trace ash, trash, leaves (Damp to Moist-Loose to Firm)	
10			4	38		8		Auger Refusal @ 10.0'	
15									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive _____ "casing _____ "with _____ lb. weight falling _____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-20-79
FINISHED 11-20-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-9
SURF ELEV 538.92
G.W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	7				Fill: Black CINDERS & BRICK, little silt, glass, wood (Damp)	Note #1: Groundwater information: Boring complete, Casing @ 11.0', No free water in boring at completion.
			9	4		16			
		2	4	5				- grades little brick	
			6	6		11			
5		3	3	3					
			2	6		5			
		4	6	2				- grades little gravel	
			2	2		4			
		5	2	3				- grades moist	
10			2	2		5		- grades and SILT (Damp to Moist-Loose to Firm) 11.0'	
		6	27						
								Gray DOLOSTONE, slightly calcareous, sound, medium hard, slightly fractured	Run #1: 11.0'-16.0' Recovery 100%
15									
								Bottom of Hole @ 16.0'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-21-79
FINISHED 11-21-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-10
SURF ELEV 538.12
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	4				TOPSOIL 6"	Note #1: Ground-water information: Boring Complete, Casing @ 8.0', No free water in boring at completion.
			3	1		7		Fill: Black CINDERS & GLASS, little silt, ash, brick, wood	
		2	7	24					
			9	6		33		(Damp-Loose to Compact) 4.5'	
5		3	2	3				Brown & Gray SILT, Some Fine Sand, little fine gravel - grades & fine SAND	
			2	7		5			
		4	4	6					
			9	11		15		(Moist-Loose to Firm)	Augers out, no free water
		5	17	64					
10								Auger Refusal @ 9.0'	
15									

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

ES-4

STARTED 11-20-79
FINISHED 11-20-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-11
SURF ELEV. 538.66
G W DEPTH See Note #

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	1				Fill: Black CINDERS, little glass, ash, brick, paper, wood	Note #1: Ground-water information: Boring complete, Casing @ 9.5', Water @ 1.0' Augers out, Water @ 1.0'
			1	3		2		(Dry-Loose) 1.5'	
		2	8	13				Brown Fine SAND & SILT	
			16	17		29			
5		3	12	15					
			19	24		34			
		4	12	14				- grades trace fine gravel	
			17	27		31			
		5	22	34	68	102		(Damp-Firm to Very Compact) 9.5'	
10								Gray DOLOSTONE, slightly calcareous, sound, medium hard, slightly fractured	Run #1: 9.5'-14.5' Recovered 100%
15								Bottom of Hole @ 14.5'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

BS-4

STARTED 11-19-79
FINISHED 11-19-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-12
SURF ELEV 532.34
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOWS ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	3	4				TOPSOIL 6"	Note #1: Ground-water information: Boring complete, Casing @ 6.0' No free water on boring at completion
			4	8		8		Brown SILT, Some fine Sand, little fine gravel (Damp)	
		2	8	14				- trace fine gravel, boulder	
			21	35		35		(Damp-Loose to Compact) 4.0'	
5		3	21	29				Brown SILT, Some fine Sand,	
			31	38		60		Some embedded fine to medium	
		4	33	100				Gravel (TILL) (Damp)	
								- grades wet Sample #4	
10								(Damp to Wet-Very Compact)	
								Bottom of Hole @ 7.0'	

N = No. blows to drive 2 "spoon 12 "with 140 lb pin wt. falling 30 "per blow.
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION: 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-28-79
FINISHED 11-28-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-13
SURF ELEV 513.08
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	2				TOPSOIL 3"	Note #1: Ground-water information: Boring complete, Casing @ 6.0', Water @ 2.3'
			4	4		6		Brown fine SAND, Some Silt (Damp)	
		2	3	6				- grades and SILT, trace fine gravel	
			11	12		17			
5		3	7	11					
			16	19		27		- grades wet, possible decomposed rock	
		4	37	100/.2				(Damp to Wet-Loose to Very Compact)	
								Bottom of Hole @ 6.7'	
10									

N = No. blows to drive 2 "spoon 12 "with 140 lb pin wt. falling 30 "per blow.
C = No blows to drive _____ "casing _____ "with _____ lb. weight falling _____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-27-79
FINISHED 11-27-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-1
SURF ELEV 534.72
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	18-24	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
		1	3	3				Fill: Brown SILT & fine SAND little fine gravel, trace paper (Damp-Loose) 1.0'	Note #1: Groundwater information: Boring Complete, Casing @ 8.0', No free water in boring at completion.
			5	8		8			
		2	7	9					
			11	16		20		Brown fine SAND, Some Silt, Some fine to medium Gravel (Damp-Firm)	
		3	39	26					
			19	16		45			
		4	19	24				Brown SILT, Some fine Sand, Some fine Gravel - possible TILL (Damp-Compact to Very Compact)	
			31	39		55			
		5	31	39	110	149		Refusal @ 9.5'	

N = No blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-27-79
FINISHED 11-27-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-1
SURF ELEV 534.82
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING, C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	4				Brown Silty fine SAND, Some fine to medium Gravel - grades little silt	Note #1: Groundwater information: Boring Complete, Casing @ 8.0', No free water in boring at completion.
			15	12		19			
		2	12	15					
			11	12		26		(Damp-Firm)	
5		3	20	22				Brown fine to medium GRAVEL & fine to coarse SAND, little silt	
			16	19		38			
		4	17	19				- possible decomposed rock	
			22	22		41			
		5	39	100	/.1			(Damp-Firm to Very Compact)	
10								Auger Refusal @ 8.6'	

N = No blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE STARTED 11-28-79
FINISHED 11-28-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-17
SURF. ELEV. 532.36
G. W. DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	1	1				TOPSOIL 6"	Note #1: Ground-water information: Boring complete, Casing @ 6.0', No free water in boring at completion.
			6	8		7		Brown SILT & fine SAND, trace fine gravel	
		2	14	14				- grades little fine gravel, boulder	
			19	24		33		(Damp-Loose to Compact) 5.0'	
5		3	21	22				Red-Brown SILT & fine SAND,	
			40	28		62		Some fine to medium GRAVEL,	
		4	39	42				little medium to coarse sand	
			49	100	/.1	91		(Till)	
								- possible rock	
10								(Damp-Very Compact)	
								Auger Refusal @ 7.6'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-28-79
FINISHED 11-28-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-1B
SURF ELEV 533.68
G.W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2	3				TOPSOIL 5"	Note #1: Groundwater information: Boring Complete, Casing @ 7.6', No free water in boring at completion
			4	7		7		Brown SILT, Some fine Sand, little fine gravel	
		2	7	12					
			22	49		34		(Damp-Loose) 3.0'	
5		3	12	17				Brown SILT & fine SAND, little fine gravel (TILL) -boulder 4-5' -occasional boulders	
			22	28		39			
		4	38	100	/.1			(Damp-Compact to Very Compact)	Run #1: 7.6'-10.0' Recovery 63%
10								Gray DOLOSTONE, slightly calcareous, sound, medium hard, slightly fractured	
								Bottom of Hole @ 10.0'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DS-4

DATE
STARTED 11-21-79
FINISHED 11-21-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO B-21
SURF ELEV 531.17
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6 6/12 12/18 N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	2 2		TOPSOIL 6"	Note #1: Ground-water information: Boring complete, Casing @ 2.0', No free water in boring at completion
			6 17 8		Brown SILT, Some fine Sand, trace fine gravel -rock	
		2	17 109		(Damp-Loose to Very Compact) Auger Refusal @ 3.0'	
5						
10						

N = No blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow
C = No blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION: 3½" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

ES-4

DATE
STARTED 11-20-79
FINISHED 11-20-79
SHEET 1 OF 1

EMPIRE SOILS INVESTIGATIONS, INC.

SUBSURFACE LOG

HOLE NO. B-24
SURF ELEV 532.96
G W DEPTH See Note #1

PROJECT Outer Loop Industrial Park
LOCATION Rochester, NY

DEPTH-FT	SAMPLES	SAMPLE NO	BLOWS ON SAMPLER 0/6	6/12	12/18	N	BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	NOTES
0		1	5	5				Fill: Brown SILT, Some fine to coarse Sand, Some fine Gravel, trace wood, occasional boulders	Note #1: Ground-water information: Boring complete, Casing @ 7.5', Water @ 1.0' Augers out, Water @ 1.7'
			3	3		8			
		2	3	3					
			3	3		6			
5		3	2	20					
			27	49		47			
		4	10	16	20	36			
								(Moist-Loose) 4.5'	
								Brown SILT, fine SAND, & fine to medium GRAVEL	Top of Rock @ 7.5'
								(Moist-Compact) 7.5'	Run #1: 7.5'-12.5' Recovery 98%
10								Gray DOLOSTONE, slightly calcareous, sound, medium hard, slightly fractured	
								Bottom of Hole @ 12.5'	

N = No. blows to drive 2 "spoon 12 "with 140 lb. pin wt. falling 30 "per blow.
C = No. blows to drive ____ "casing ____ "with ____ lb. weight falling ____ "per blow.
METHOD OF INVESTIGATION 3¼" HSA Casing

CLASSIFICATION Visual By Laboratory Technician

DATE
STARTED 8/30/88
FINISHED 9/1/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-8D
SURFACE ELEV. 96.5
G.W. ELEV. 92.25

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
	1.7'	SB	1	2	9	28	50/.3'	Brown SAND and SILT, little clay, moist, dense. Grades to brown-gray SAND, trace gravel. At 6 to 6.5 ft. brown, fine SAND, trace red sandstone gravel, saturated. [SAND] 7.0'	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Lee Penrod Assistant - Shawn Penrod HNU = 0 ppm Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Explosimeter = 0% LEL Auger drilling refusal at 7.0 ft. NX core run 1 and 2 drilled on 8/31/88. NX core run 3 and 4 drilled on 9/1/88. Rotary drilled with 4-1/2 in. tri-cone bit from 7 ft.- 14ft. Coring was done with a long ear 5 ft./NQ core barrel and a Series 8 bit.
5	1.3'	SB	2	18	33	23	22		
10	REC 93% RQD 24%	NX	1					Gray, fine textured dolomite, many horizontal fractures. Rust staining on fractures at 8.5 ft. Some vertical fractures to 14 ft. Few small vugs present. Rock becomes less fractured and moderately hard with depth. Slight drilling fluid loss during Run 3. [DOLOMITE BEDROCK] 24.0'	
	REC 100% RQD 73%	NX	2						
15	REC 98% RQD 66%	NX	3						
20	REC 99% RQD 85%	NX	4						
25									Boring Completed at 24.0 ft. G.W. elevation taken on 12/16/88.
30									
35									

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

DB.00214.8D

DATE
STARTED 9/1/88
FINISHED 9/2/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-8S
SURFACE ELEV. 96.0
G.W. ELEV. 92.24

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
5	1.8'	SB	1	10	9	10	12	Brown SAND and SILT, little clay, moist, dense. Grades to brown-gray SAND, trace gravel. At 6 to 6.5 ft. brown, fine SAND, trace red sandstone gravel, saturated. [SAND] 7.0'	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Lee Penrod Assistant - Shawn Penrod HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Auger drilling refusal at 7.0 ft. NX core run 1 drilled on 9/1/88. Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit. Rotary drilled with 3-7/8 in. tri-cone bit from 7 ft. to 12.0 ft. Boring Completed at 12.0 ft. G.W. elevation taken on 12/16/88.
10	REC 95% RQD 40%	NX	1					Light gray fine textured dolomite. Numerous horizontal fractures. Fractures at 7.5 and 8.5 ft. show dark rust staining. Other fractures show weathering and some white precipitate. Rock is soft to moderately hard near end of core. [DOLOMITE BEDROCK] 12.0'	
15									
20									
25									
30									
35									

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.8S

DATE
STARTED 8/22/88
FINISHED 8/24/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-9
SURFACE ELEV. 100.2
G.W. ELEV. 84.11

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER (0/6 | 6/12 | 12/18 | 18/24)	DESCRIPTION	NOTES
	1.25'	SB	1	7 | 10 | 32 | 50/.1'	Brown SILT, some sand, some gravel, occasional cobble and boulder sized sandstone and dolomite rock fragments, dry, dense	Boring advanced with 4-1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
5	REC 79% RQD 14%	NX	1		[SILT with Rock FRAGMENTS] 5.0'	Driller - Lee Penrod Assistant - Shawn Penrod
10	REC 99% RQD 12%	NX	2		Gray fine textured dolomite, highly fractured, fractures oriented horizontally, vertically and at 45 degrees to coring axis. Rock is soft to moderately hard depending on extent of weathering. Rust staining on fractured surfaces at 8.0 ft. Some mottling beginning at 9.5 ft. At 10.0 ft.: Vuggy with small amount of white precipitate.	HNU = a reading of 2-3 ppm was observed over the drilling fluid during run 3. Explosimeter = 0 % LEL Geiger Counter = 0 mr/hr. Micro R Meter = 5-7 micro-rem/hr. Auger drilling refusal at 5.0 ft.
15	REC 100% RQD 10%	NX	3		Water table encountered at approximately 15.0 ft.	NX core run 1 drilled on 8/22/88. NX core run 2-5 drilled on 8/23/88.
20	REC 93% RQD 52%	NX	4		At 21 ft.: Begin to lose some drilling fluid.	Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit. Rotary drilled with a 3-7/8 in. tri-cone bit from 5.0 to 26.0 ft.
25	REC 99% RQD 58%	NX	5		From 22 ft. to 27 ft.: Weathering decreases and rock is less fractured. [DOLOMITE BEDROCK] 27.0'	
30						Boring completed at 27.0 ft. G.W. elevation taken on 12/16/88.
35						

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.9

DATE
STARTED 8/24/88
FINISHED 8/25/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-10S
SURFACE ELEV. 99.1
G.W. ELEV. 96.68

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER 0/6	BLOWS ON SAMPLER 6/12	BLOWS ON SAMPLER 12/18	BLOWS ON SAMPLER 18/24	DESCRIPTION	NOTES
	1.0'	SB	1	3	7	7	6	Black organic SILT some brown-gray clay, dry. Grades to brown medium SAND, moist.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig.
5	1.3'	SB	2	6	9	16	28	At 6.0 ft.: Fine SAND, well graded, saturated. At 7.5 ft.: Some silt, trace gravel. [SAND, SILT and CLAY] 8.0'	Driller - Lee Penrod Assistant - Shawn Penrod
10	REC 100% RQD 63%	NX	1					Gray, fine textured dolomite, soft to moderately hard. Numerous horizontal and vertical fractures. Becomes vuggy at 10.0 ft. Mottling starts at about 11.5 ft. Becomes highly weathered and soft near base. [DOLOMITE BEDROCK] 13.0'	HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-8 micro-rem/hr. Auger drilling refusal at 8.0 ft. NX core run 1 drilled on 8/24/88.
15									Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit.
20									Rotary drilled with a 3-7/8 in. tri-cone bit from 8-13 ft.
25									Boring completed at 13.0 ft.
30									G.W. elevation taken on 12/16/88.
35									

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.10S

DATE
STARTED 8/25/88
FINISHED 8/29/88
SHEET 1 OF 1

RECRA ENVIRONMENTAL, INC.

SUBSURFACE LOG

HOLE NO. GW-10D
SURFACE ELEV. 99.3
G.W. ELEV. 96.45

PROJECT NYSDEC PHASE II INVESTIGATION
SITE #828023

LOCATION EMERSON STREET LANDFILL
ROCHESTER, NEW YORK

DEPTH-FT	RECOVERY	SAMPLE TYPE	SAMPLE NO	BLOWS ON SAMPLER (0/6 6/12 12/18 18/24)	DESCRIPTION	NOTES
					Black organic SILT some brown-gray clay, dry. Grades to brown medium SAND, moist.	Boring advanced with 4 1/4 in. I.D. HSA, truck mounted CME-55 drill rig. Driller - Lee Penrod Assistant - Shawn Penrod
5	1.3'	SB	1	19 / 19	At 6.0 ft.: Fine SAND, well graded, saturated. At 7.5 ft.: Some silt, trace gravel.	
	0.8'	SB	2	21 / 15		
	0.6'	SB	3	31 / 48		
				50/.3' / 13	[SAND, SILT, and CLAY] 8.0'	HNU = 0 ppm Explosimeter = 0% LEL Geiger Counter = 0 mr/hr. Micro R Meter = 6-7 micro-rem/hr. Auger drilling refusal at 8.0 ft.
				50/.1'		
10	REC 94% RQD 48%	NX	1		Gray fine textured dolomite, numerous horizontal fractures, few vertical fractures to 4 in. Numerous vuggy zones, intense weathering at some fractured areas. White precipitate present in some vugs and on some fractured surfaces. Rock gets harder with depth except for areas of intense weathering.	Rotary drilled with 4 1/2 in. tri-cone bit from 8 ft. to 10 ft. Then core NX-1 from 10 ft. to 14 ft. and finish rotary drilling to 14 ft. on 8/26/88.
15	REC 100% RQD 58%	NX	2		Some drilling fluid loss at 13-14 ft.	
20	REC 98% RQD 79%	NX	3		[DOLOMITE BEDROCK] 13.0'	NX core run 2 &3 drilled on 8/29/88. Coring was done with a long ear 5 ft. NQ core barrel and a Series 8 bit.
25						Boring completed at 24.0 ft.
30						G.W. elevation taken on 12/16/88.
35						

CLASSIFICATION VISUAL

METHOD OF INVESTIGATION ASTM D1586-84, D2113-83

LOG DEVELOPED BY ROBERT STEINER

PB.00214.10D

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-13 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JOHN DEERE 310 BACKHOE	LOCATION: Ben-Mer Mfg. 1255 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Beikirch

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown silty fine SAND, with cobbles, logs, bricks and boulders, moist.	OVA reading = 30 ppm @ 0 ft. to 2.0 ft.
2	S1	2.0		Dark brown sandy SILT, some clay, with C&D debris, moist.	No radiation meter readings above background.
				-FILL-	
4			4.0		Water level in test pit at 4.0 ft.*
				Light brown silty fine SAND, with cobbles and brick fragments, wet.	
6					
				Same, with brick fragments. -FILL-	
			7.0		
				Brown coarse to medium SAND, little silt, few cobbles, wet.	
8				-FILL OR DISTURBED NATURAL MATERIALS-	
			9.0		
10				Apparent Bedrock and Bucket Refusal at 9.0 ft. Bottom of Test Pit at 9.0 ft.	
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 8 feet WIDTH 3.0 feet	DEPTH: 9.0 ft.
				JAR SAMPLES: 1
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: 4.0 ft.*
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-13

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-14 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST
LOCATION: ROCHESTER, NEW YORK
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING
EQUIPMENT USED: JOHN DEERE 310 BACKHOE

LOCATION: Ben-Mer Mfg. 1255 Emerson St.
ELEVATION:
EXPLORATION DATE: 10 Dec. 1992
H&A REP.: M. Beikirch

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Dark brown clayey organic SILT, with brick and plywood fragments.	
				-TOPSOIL-	
			1.5	Brown silty SAND, some clay, with cobbles and boulders, moist.	No OVA or radiation meter readings above background.
2					
				Tan to brown clayey SILT, some sand and gravel, common cobbles, wet.	
4				Same with brick fragments.	Water level in test pit at 4.0 ft.*
				-FILL-	
6					
				Same, bedrock fragments present.	
8			8.0	Light brown sandy SILT, trace clay, wet.	
				-GLACIAL TILL-	
			9.0	Bottom of Test Pit at 9.0 ft.	
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 8 feet WIDTH 3 feet	DEPTH: 9.0 ft.
				JAR SAMPLES: ---
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: 4.0 ft.*
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-14

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-15 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Jada Precision Plastics Co., 1335 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	Dark brown clayey organic SILT. -TOPSOIL-	No radiation meter readings above back-ground.
				Gray and black fine sandy SILT, little gravel, trace brick and ceramics to ~ 5.0 ft.	
2					
	S1	3.0			OVA readings from 20 to 1000+ ppm from soil at a depth of ~ 3.0 to 5.0 ft.
4					
	S2	5.0			
6				-FILL-	
			7.5		
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.5 ft.	
10					
12					

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 7 feet WIDTH 3.5 feet	DEPTH: 7.5 ft.
				JAR SAMPLES: 2
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: Not Encountered
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-15

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-16 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Alton Mfg., Inc. 1365 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	Gray fine GRAVEL (Crusher run).	No OVA readings or radiation meter readings above background.
2				Brown silty coarse to fine SAND, some gravel, with large brick, concrete, and wood fragments.	
4					
6				-FILL-	
			7.0	Apparent Top of Bedrock and Bottom of Test Pit at 7.0 ft.	Water seeping into test pit at 7.0 ft.*
8					
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL			APPROXIMATE PIT DIMENSIONS AT SURFACE	SUMMARY
DATE	TIME*	DEPTH FT	LENGTH 6 feet WIDTH 3 feet	DEPTH: 7.0 ft.
				JAR SAMPLES: ---
			BOULDERS	BAG SAMPLES: ---
			8" to 18" DIAMETER: No. = Vol. cu ft	WATER LEVEL: 7.0 ft.*
* Hrs after completed			Over 18" DIAMETER: No. = Vol. cu ft	TEST PIT NO. TP-16

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-17 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Alton Mfg., Inc. 1365 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
			0.5	Gray fine GRAVEL (Crusher run).	2 to 10 ppm OVA reading from soil at a depth of ~2.0 ft. No radiation meter reading above background.
2	S1 S2	2.0		Brown silty coarse to fine SAND, little gravel, very few cobbles and boulders (rocky fill), trace brick. Slight petroleum odor noted from test pit soils. -FILL-	
4			4.0	Apparent Top of Bedrock and Bottom of Test Pit at 4.0 ft.	
6					
8					
10					
12					

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 5 feet WIDTH 3.5 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 4.0 ft.

JAR SAMPLES: 2

BAG SAMPLES: ---

WATER LEVEL: Not Encountered

TEST PIT NO. TP-17

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-18 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Jada Precision Plastics Co., 1335 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Brown silty coarse to fine SAND, few cobbles and boulders with trace asphalt, and brick. -FILL-	No OVA or radiation meter readings above background.
			3.0		
			3.5	Dark brown organic SILT, with roots. -BURIED TOPSOIL-	
4				Brown coarse to fine SAND, some silt, little gravel, trace clay.	
6					
				-GLACIAL TILL-	
			7.5		Water level in test pit at 7.5 ft.*
8				Apparent Top of Bedrock and Bottom of Test Pit at 7.5 ft.	
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE
LENGTH 7 feet WIDTH 3.5 feet
BOULDERS
8" to 18" DIAMETER: No. = Vol. cu ft
Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY	
DEPTH:	7.5 ft.
JAR SAMPLES:	---
BAG SAMPLES:	---
WATER LEVEL:	7.5 ft.*
TEST PIT NO.	TP-18

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-19 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JOHN DEERE 310 BACKHOE	LOCATION: Peko Precision Prods., Inc., 1425 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Beikirch

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2				Dark brown silty fine SAND, common cobbles, trace clay, with bricks and C&D debris, moist. Road gravel at 1.0 ft. to 3.0 ft. with tiles, piece of plastic wrap and metal can.	No OVA or radiation meter readings above background except as noted below.
	S1	3.0			OVA reading= 3 to 4 ppm.
				-FILL-	
4			4.0		
				Light brown-tan silty fine SAND, common cobbles, with clayey pockets or lenses, concrete and asphalt-like material, moist. Same, except more clay.	
6				-FILL-	
8			8.0		
			8.5	Brown coarse to fine SAND, some silt, little gravel, trace clay. -GLACIAL TILL-	
				Apparent Bedrock, Bucket refusal at 8.5 ft. Bottom of Test Pit at 8.5 ft.	
10					
12					

WATER LEVEL		
DATE	TIME*	DEPTH FT
* Hrs after completed		

APPROXIMATE PIT DIMENSIONS AT SURFACE
LENGTH 8 feet WIDTH 3 feet
BOULDERS
8" to 18" DIAMETER: No. = Vol. cu ft
Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY
DEPTH: 8.5 ft.
JAR SAMPLES: 1
BAG SAMPLES: ---
WATER LEVEL: Not Encountered
TEST PIT NO. TP-19

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-20 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JCB-1400B	LOCATION: Peko Precision Prods., Inc., 1425 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Corrigan

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
2 4 6 8 10 12	S1	2.5	5.5 6.5	Brown and black silty coarse to fine SAND, some gravel with brick, wire, metal to 5.5 ft. -FILL- Light brown fine sandy SILT. -LACUSTRINE/ALLUVIUM- Apparent Top of Bedrock and Bottom of Test Pit at 6.5 ft.	OVA reading = 5 ppm from soil sample at a depth of ~ 2.5 ft. Readings in breathing zone checked. Up to 10 ppm near propane gas tank ~ 20 ft. from excavation. No OVA or radiation meter readings above background from test pit.

WATER LEVEL		
DATE	TIME*	DEPTH FT

* Hrs after completed

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 7 feet WIDTH 3.5 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH: 6.5 ft.

JAR SAMPLES: 1

BAG SAMPLES: ---

WATER LEVEL: Not Encountered

TEST PIT NO. TP-20

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST PIT REPORT	TEST PIT NO. TP-24 FILE NO. 70352-44

PROJECT: FORMER EMERSON STREET LANDFILL FILL VERIFICATION/DELIST LOCATION: ROCHESTER, NEW YORK CLIENT: CITY OF ROCHESTER CONTRACTOR: NOTHNAGLE DRILLING EQUIPMENT USED: JOHN DEERE 310 BACKHOE	LOCATION: Ben-Mer Mfg. 1255 Emerson St. ELEVATION: EXPLORATION DATE: 10 Dec. 1992 H&A REP.: M. Beikirch

SCALE IN FEET	SAMPLE NUMBER	SAMPLE DEPTH RANGE	STRATA CHANGE	DESCRIPTION OF MATERIALS	REMARKS
				Brown silty coarse to fine SAND, with cobbles, moist.	
				-FILL-	No OVA or radiation meter readings above background except as noted below.
2			2.0		
				Gray-brown-red sandy SILT, some clay, with cobbles and boulders.	
4	S1	4.0		-FILL-	OVA reading = 2 ppm
			4.5		
				Brown, coarse to medium SAND, few cobbles, wet. -FILL OR DISTURBED NATURAL MATERIALS-	
			5.5		Water level in test pit at 5.0 ft.*
6				Apparent Bedrock, Bucket Refusal at 5.5 ft. Bottom of Test Pit at 5.5 ft.	
8					
10					
12					* - See Note #3 on Subsurface Exploration Key.

WATER LEVEL		
DATE	TIME*	DEPTH FT

* Hrs after completed

APPROXIMATE PIT DIMENSIONS AT SURFACE

LENGTH 7 feet WIDTH 3 feet

BOULDERS

8" to 18" DIAMETER: No. = Vol. cu ft

Over 18" DIAMETER: No. = Vol. cu ft

SUMMARY

DEPTH:	5.5 ft.
JAR SAMPLES:	1
BAG SAMPLES:	---
WATER LEVEL:	5.0 ft.*
TEST PIT NO.	TP-24

Data by KPM

Sheet 1 of ___

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. P-5
Project No. 576-005

Project Name EMERSON STREET
Client NYSDEC
Driller AMERICAN AUGER
Monitoring Instrument(s) ___
SAMPLE HAMMER
Weight — lb
Fall — in.

Date 7/26/89 (start) 7/26/89 (finish)
Boring Location 210 Colfax - IMPOUND LOT
Total Depth 16'
Depth to Water 7.5 - 7.27'
Hole Diameter .7' - .3'
Ground Surface Elevation 535.8

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL	Remarks
											NO SAMPLING REQUIRED AUGERED THROUGH SURFACE GRAVEL TO DARK GREY MIXED SAND, GRAVEL, SILT (FILL)	
									DAMP ↓ MOIST			
										5	COBBLES - INTERMITENT	
										7	LIGHT BROWN FINE-MEDIUM SAND, SILT - NO REFUSE	
										10	COBBLES REFUSAL AT 11 HQ CORING FROM 11	
									MIN	ft.		
									3.75	12	BOULDER IN TIP OF BARREL	
									3.0	13		
									2.0	14	LIGHT BROWN CUTTING WATER	
									3.0	15		
									2.0	16	GREY DOLOMITE	
									3.0	17		
											HOLE OPEN TO 16.5' WATER @ 7.5' SET 2" PVC MONITOR WELL AT 16' #2 SANDPACK TO 4' 3/8" BENTONITE PELLETS TO 2' PORTLAND CEMENT TO SURFACE	

f - fine
m - medium
c - coarse
and - 35-50%
some - 20-35%
little - 10-20%
trace - 0-10%

LAWLER, MATUSKY & SKELLY ENGINEERS

Data by KPM

Sheet 1 of ___

SUBSURFACE EXPLORATION - TEST BORING LOG

Boring No. GW-11
Project No. 576-005

Project Name ENERSON STREET

Client NYSDEC

Driller AMERICAN AUGER

Monitoring Instrument(s) HNU, MSA, CGI, DOSIMETER

SAMPLE HAMMER

Weight 140 lb

Fall 30 in.

Date 8/2/89 (start) 8/2/89 (finish)

Boring Location PYRAMID BROKERAGE

Total Depth 15'

Depth to Water 6.64 BG.

Hole Diameter .7'

Ground Surface Elevation 532.6

Depth	BLOWS ON SAMPLER 0" to 6"	6" to 12"	12" to 18"	18" to 24"	Retained Sample	Recovery (feet)	Sample No.	Instrument Reading	Moisture Content	Stratigraphic Column	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Remarks
0-2	10	8	8	5		.7	1		DRY LOOSE		ANGULAR GRAVEL @ SURFACE (PROCESS) SILT - FINE SAND W/ ANGULAR / SUBANGULAR GRAVEL, SOME ASPHALT MASSES (COHESIVE)	
4-6	25	36	50/.06			.1	2		DRY	.3	METAL GRATING FRAGMENTS FINE SAND, BROKEN f-M GRAVEL PULVERIZED COARSE- CONCRETE LOOSE SOME TARMACK FRAGMENTS	HNU - 3-5 ppm
										4.5	COBBLE	BOREHOLE
									MIN	ft	REFUSAL @ 5'	5.25 ppm
									5.25	6	RETRIEVED 1.5' DOLOMITE W/ UPPER .2' CONCRETE NOTICEABLE OXIDATION BETWEEN NUMEROUS FRACTURES	NO ODOR
									1.2	6.5		
									4.5	1.5	FRACTURED GREY DOLOMITE SOLUTION CAVITIES NOTED THROUGHOUT - (SMALL)	
									3.5	8.5		
									3.0	9.5		
									2.5	10.5		
									2.5	11.5		
									2.75	12.5		
									2.5	13.5		
									2.5	14.5		
									1.0	15.0		
											INSTALLED 2" PVC MONITOR WELL @ 15' 10' SLOTTED PVC SCREEN #2 SAND TO 4', 3/8 BENTONITE PELLETS TO 2' CEMENT GROUT TO SURFACE PROTECTIVE STEEL CASING	

LAWLER, MATUSKY & SKELLY ENGINEERS

110-210 Colfax St.

PROJECT: PESL SVI investigation	LOCATION "G" **Log of Well No.** LAB-108
BORING LOCATION: ~~City of Rock. Maintenance Facility~~	ELEVATION AND DATUM: OK
DRILLING CONTRACTOR: NOTHNAGLE	DATE STARTED: 9/27/10 / DATE FINISHED:
DRILLING METHOD: 4¼" Ø HSA	TOTAL DEPTH: / SCREEN INTERVAL:
DRILLING EQUIPMENT: CME 55D	DEPTH TO WATER: FIRST / COMPL. / CASING:
SAMPLING METHOD: 4¼" Ø HSA	LOGGED BY: MPE
HAMMER WEIGHT: AUTO / DROP: 30"	RESPONSIBLE PROFESSIONAL: BM / REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	Sample	Blows/Foot	OVM Reading (ppm)	DESCRIPTION: NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl. geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Surface Elevation:	
2	1	2.0	RAD slight	Ø	0-6" - Brown topsoil, moist, firm -	
4					6"-2.0' Asph/Fill - shale bedrock fragments, porcelain, glass, ash, coal clinker, coal fragments loose, moist, no odors -	
6	2	1.5	slight	Ø	AA w/more brown f/silt matrix, little brick. No odors	
8						
10	3	1.0	slight	Ø	AA - looser (low recovery)	
12	4				Sampler bouncing (refusal) @ 13.0' (Ash) * advance 4¼" Ø HSA to 14' bgs & install 4" Ø permanent steel casing.	
14						
16						
18						
20						
22						
24						
26						
28						

W-1 (12/95)

Project No.	Geomatrix Consultants	Figure

W-1 (Blank)

108

PROJECT: FESL SUI Sampling PAGE 2 of 2 (Location "6") **Log of Well No.** LOG-107 (cont.)

9/30/10

DEPTH (feet)	Sample No.	Sample	Blows/Foot	OVM Reading (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight., plast., consistency, structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
					Begin NX core run @ 15.0' bgs after rollerbitting just to 15.0' bgs.	Drill rate ~1.5 min/ft. (first 5.0' of run #1)
					Run # 1: 15.0' - 25.0 bgs	Drill rate slows to 2-2.5 min/ft second 5.0' of run #1
					~~Rec: 9.5'/10' = 95%~~ ~~RQD: 6.8'/9.5' = 72%~~	* lose ~ 15-20 gal of recirc. water in first 6.0' of run #1 (30 g total for hole)
					LITH: Hard Gray Limestone with shale interbeds (interbeds generally ≤ 5 mm thickness) several horizontal fractures w/ iron staining throughout. few healed ~~horizontal~~ subvert. fractures between 5.5-5.8'. open sub vert fracture @ 9.7-10' of Run #1. Mild dolomitization between 5.0 & 6.0'. Core exhibits moderate stylolite presence bottom 1.5' of core	& 3 7/8" rollerbit to 25' bgs
					Rec 118"/98%	* Remove ~ 50 g of water from borehole w/ Drill Rig Moyno Pump.
					RQD 72"/60%	* well recovers slowly ~2.5' recovery in one hour (from dry)

W-2 (12/95)

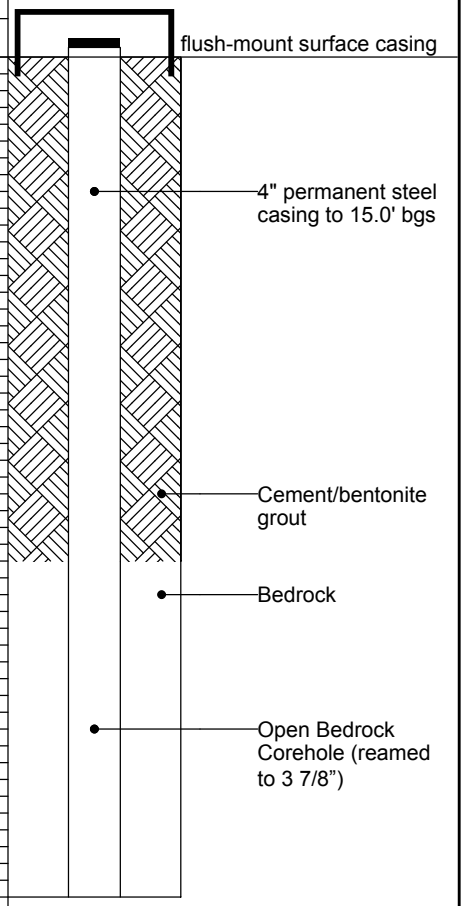
Project No. | Geomatrix Consultants | Figure

W-2 (Blank)

PROJECT: Former Emerson Street Landfill- SVI Investigation Rochester, New York	**Log of Well No. LAB-108**	
BORING LOCATION: 110-210 Colfax Street	TOP OF RISER ELEVATION: fmsl	DATUM:
DRILLING CONTRACTOR: Nothnagle Drilling	DATE STARTED: 9/29/10	DATE FINISHED: 9/30/10
DRILLING METHOD: 4 1/4" Diameter HSA	TOTAL DEPTH: 25.0 fbgs	SCREEN INTERVAL: 15.0-25.0 fbgs
DRILLING EQUIPMENT: CME 850	DEPTH TO WATER: / FIRST / COMPL.	CASING: 4" steel
SAMPLING METHOD: 4' Macrocore Sampler	LOGGED BY: MAC/KRM	
HAMMER WEIGHT: 140 / DROP: 30"	RESPONSIBLE PROFESSIONAL: RM	REG. NO.

DEPTH (feet)	SAMPLES: Sample No.	SAMPLES: Sample	SAMPLES: Blows/foot	OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.
					Surface Elevation: fmsl
1					Brown topsoil, moist, firm
2	1		NA	0	ASH/FILL- Shale bedrock fragments, procelain, glass, ash, coal clinker, coal fragments, loose, moist, no odors.
3					
4					
5					
6	2		NA	0	As above, within brown fine-sand/silt matrix. Little brick, no odors.
7					
8					
9					
10	3		NA	0	
11					
12	4		NA	0	refusal at 13.0' bgs (sampler bouncing)
13					Advanced roller bit to 15.0' bgs.
14					
15					Begin NX bedrock core at 15.0' bgs.
16					
17					Run #1 Depth: 15.0-25.0 'bgs Rec: 118" (98%) RQD: 72" (60%) Lithology: **LOCKPORT FORMATION** (Penfield Dolostone Member) Light to medium gray, fine-grained, medium-bedded moderately hard to hard, siliceous Dolostone, with occassional to frequent argillaceous partings and occassional shale interbeds. Zones of occassional pits and vugs are present. Secondary crystallization (calcite or gypsum) infilling of bedding planes, joints and vugs is common.
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					Rock coring details: * highly fractured zone, intersecting, planar, moderately dipping to high angle joints between 15 and 16.3' bgs * short fractured zone at 16.7', 17.3-17.5', 18.9-19.2', 19.7-19.9', 10.0-21.1' *vertical cracks, pits, vugs at 21-22' * high angle joints at 22.2-22.5', 22.8-23.0'
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page**	1	**of**	1	**Test Pit No.**	TP02-1
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York						
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534						
Elevation	527.0 Est.	**Weather**	Sunny 75°			**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02			**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.					**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ASPHALT 0'3" Washed No. 1 and No. 2 STONE 0'6" FILL: TOPSOIL, barrel bands, gravel silt, clay, wood
4			2'6" TOPSOIL
6			4'6" Compact gray green wet SAND and SILT, little gravel
8			7'0" Refusal on fractured rock 7'0"
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Water seepage at rock. 3. Test pit elevation estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page**	1	**of**	1	**Test Pit No.**	TP02-2
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York						
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534						
Elevation	526.0 Est.	**Weather**	Sunny 75°			**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02			**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.					**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'5" Run of bank sand and gravel, and crusher-run stone 1'1" FILL: ASH, grades to topsoil
4			3'2" Firm gray green moist SILT 4'0"
6			Compact tan red moist SAND, some gravel, some silt 4'9" Test pit terminated at 4'9"
8			
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Dry on completion. 3. Test pit elevation estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page** 1 **of** 1		**Test Pit No.**	TP02-3
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York				
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534				
Elevation	528.0 Est.	**Weather**	Sunny 75°	**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02	**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.			**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ASPHALT 0'3.5" FILL: Run of Bank sand and gravel, and crusher run stone (building side), black ash, rock, metal, wood, cmu concrete, perforated drain tile at 3'10"
4			
6			
8			7'0" Refusal on rock at 7'0"
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Flowing water at 3'10"±, static water level at 3'10" on completion. 3. Test pit elevations estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page** 1 **of** 1		**Test Pit No.**	TP02-4
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York				
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534				
Elevation	531.0 Est.	**Weather**	Sunny 75°	**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02	**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.			**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: 50% Run of Bank sand and gravel 50% SILT
4			2'8" FILL: Black ASH, plastic, wood, rock, few cobbles/boulders, blends to black topsoil 4'0"
6			Firm to compact moist tan red SAND, some silt, little gravel, few cobbles
8			Broken rock below 6' 8'0"
10			Refusal on fractured rock at 8'0"
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Water seepage 6'8". 3. Test pit elevations estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page**	1	**of**	1	**Test Pit No.**	TP02-5
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York						
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534						
Elevation	532.0 Est.	**Weather**	Sunny 75°			**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02			**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.					**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'3" FILL: Gray and brown SILT, some gravel, some wood, little concrete, brick, ash, incompletely stripped topsoil 1'9" Compact to dense moist SILT, some sand, little gravel, trace roots, trace clay
4			3'5" Compact to dense red-tan moist SAND, little gravel, little silt/clay, few cobbles, few boulders, random clay with green varved pockets
6	S-1	5'0"	
8			Cobbles and boulders increase below 7'
10			9'9" Refusal on rock at 9'9"
12			
14			Notes: 1. Sides slough below 5' on completion at 9:35 A.M. Sides slough below 4'6" at 12:00 P.M. 2. Dry on completion at 9:35A.M. test pit had 5" of water at 12:00 P.M. before backfilling. 3. Test pit elevation estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page**	1	**of**	1	**Test Pit No.**	TP02-6
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York						
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534						
Elevation	530.5 Est.	**Weather**	Cloudy 70°			**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02			**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.					**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ASPHALT 0'3" Run of bank gravel, some asphalt 0'9" Compact black moist TOPSOIL 1'10" Compact brown with red mottling moist SILT, some gravel, trace sand, trace roots
4			2'11" Compact red moist SILT, some fine sand 3'7" Dense tan moist SILT, some sand, little gravel
6			Grades to and rock/gravel below 6'
8			7'11" Refusal on rock at 7'11"
10			
12			
14			Notes: 1. Sides vertical and stable on completion. 2. Water seepage at 7'10". 3. Test pit elevations estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page**	1	**of**	1	**Test Pit No.**	TP02-7
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York						
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534						
Elevation	532.5 Est.	**Weather**	Sunny 75°			**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02			**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.					**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: GRAVEL, silt, brick, concrete 1'5" TOPSOIL
4			3'3" Compact tan moist-wet SAND, little gravel, little silt, trace clay seams, root stain
6	S-1	4'5"	5'6" Refusal on rock at 5'6"
8			
10			
12			
14			Notes: 1. Sides vertical and stable on completion at 9:55 A.M. Little running sand below 5' at 11:50 A.M. before backfilling. 2. Water seepage at rook at 9:55 A.M. 7" of water at 11:50A.M.. 3. Test pit elevations estimated to the nearest half foot form the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page** 1 **of** 1		**Test Pit No.**	TP02-8
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York				
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534				
Elevation	532.5 Est.	**Weather**	Sunny 75°	**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02	**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.			**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT, little topsoil, grass and roots 0'3" FILL: 75% BRICK, soil, ash, wood, metal (R-Bar) 25% COBBLES and boulders
4	S-1	4'0"	2'11" TOPSOIL 3'7" Dense tan moist SILT, some sand, little gravel, trace roots, and staining
6			Grades to some gravel and a few cobbles below 5'
8			
10			10'0" Refusal on rock. at 10'0"
12			
14			Notes: 1. Sides slough below 8'6" and 7'0" after 5min. 2. Running water and sands at 9'6" at 9:00A.M., 12" of water in test pit at 11:45A.M before backfilling. 3. Test pit elevations estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page**	1	**of**	1	**Test Pit No.**	TP02-9
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York						
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534						
Elevation	532.0 Est.	**Weather**	Sunny 75°			**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02			**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.					**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			FILL: Construction debris, concrete, wood, wire spool ends to 3'0"diameter, 2'x2'x3 'concrete (footing like), rock, brick, metal, wire, asphalt, trace ash, cobbles, and boulders
4			
6			4'6" TOPSOIL 5'6" Compact gray moist to wet SILTY CLAY, some sand
8			7'0" Compact red brown moist SAND, some gravel, little silty clay
10			9'4" Refusal on rock at 9'4"
12			
14			Notes: 1. Sides vertical and stable on completion at 10:10A.M., little running sands below 8' at 11:50. 2. Seepage at rock, 8" of water at 11:50A.M. 3. Test pit elevations estimated to the nearest half foot from the site plan.

DESIGN, P.C.

Test Pit Log

Project No.	2-2570.0	**Page** 1 **of** 1		**Test Pit No.**	TP02-10
Project Name	Flower City Transfer Statoin, 200 Ferrano, Street, Rochester, New York				
Client	Mitchell Group, 5800 Pittsford-Palmyra Road, P.O. Box 1058, Pittsford, New York 14534				
Elevation	530.0 Est.	**Weather**	Sunny 75°	**Inspector**	Jay Goggin
Date Started	07/26/02	**Completed**	07/26/02	**Operator**	Doug
Backhoe Subcontractor	Re-Surface Inc.			**Equipment**	Case Extend-A-Hoe

Depth Below Surface	Sample Number	Depth of Sample	Soil and Rock Classifications Remarks
2			ORGANIC MAT 0'3" FILL: Compact brown moist SILT, little gravel, little sand, few cobbles, few boulders, 20" diameter trace wood, ash, brick, trace topsoil and roots 1'3" Compact dense tan SAND, some silt, little gravel, few cobbles, few boulders, trace fine roots (Wet sand and gravel pocket at 3'4" – 4'3" with wet silt/clay inclusions 3"-6" diameter)
4			
6			5'7" Compact red tan SILT, some sand, some gravel, few cobbles and small boulders
8			
10			8'3" Refusal on rock at 8'3"
12			
14			Notes: 1. Sides vertical and stable on completion at 9:15A.M. Sloughing, caving, and running sands below 3'6", test pit 6' deep at 11:40A.M. before backfilling. 2. Dry on completion at 9:15A.M. 7" of water at 11:40A.M. 3. Test pit elevations estimated to the nearest half foot from the site plan.

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B135

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Rochester Colfax St. Complex (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Diedrich D-50, Truck-mount
BIT TYPE: 2-1/2 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: ---

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		3 2 2 3	S1 15"/24"	3.0 5.0		Soft brown clayey SILT, little sand, moist. -DISTURBED NATIVE MATERIAL OR FILL-
					6.5	
		50 50/.2	S2 5"/8"	8.0 8.7		Very dense brown clayey GRAVEL, some coarse to fine sand, damp to moist. -GLACIAL TILL- Bottom of Boring at 8.7 ft.

Notes:

1. Borehole backfilled to ground surface with soil cuttings.
2. No OVA, explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	BOTTOM OF HOLE	WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	8.7 ft.
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B135

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B136

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Rochester Colfax St. Complex (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Spring
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	---	S	---
INSIDE DIAMETER (IN)	---	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: Truck Mounted, CME-75
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: ---

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		1 1 2 1	S1 12"/24"	3.0 5.0		Very loose black and red-brown ASH, with wood and glass. -FILL-
5						Same. -FILL-
		7 10 14 12	S2 16"/24"	8.0 10.0	8.6	Medium dense red-brown fine SAND, little coarse to medium sand and fine gravel, wet. -LACUSTRINE/FLUVIAL-
10						Bottom of Boring at 10.0 ft.
15						Notes: 1. Borehole backfilled to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 5 ppm (methane) S2 = 0 ppm 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.
20						
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0 ft.
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B136

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B137

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Rochester Auto Pound (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Spring
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		5 5 2 2	S1 24"/24"	3.0 5.0		Loose brown to black ASH with wood, cinders and glass, damp. -FILL-
5						Same.
		6 8 9 12	S2 24"/24"	8.0 10.0	8.4 9.5	Medium dense red-brown silty fine SAND, wet. -FLUVIAL-
10						Medium dense red-brown coarse to fine SAND, little silt and gravel (dolostone fragments). -ABLATION TILL/FLUVIAL-
15						Bottom of Boring at 10.0 ft.
20						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 1000+ ppm (800 ppm methane) S2 = 600 ppm methane No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S1 was submitted for TCLP metals and hazardous characteristics analyses.
25						

WATER LEVEL DATA

DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B137

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B138

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Roch. Colfax Street Complex (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Spring
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 8.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		1 1 1 1	S1 12"/24"	3.0 5.0	3.8	Very loose brown ASH with glass, damp.
5						Very loose mottled brown silty CLAY, trace coarse to fine sand, damp. -FLUVIAL SUBSOIL-
					6.5	
		4 15 21 27	S2 16"/24"	8.0 10.0		Dense red-brown silty coarse to fine SAND, some subround gravel, wet. -ABLATION TILL/FLUVIAL-
10						Bottom of Boring at 10.0 ft.
15						Notes: 1. Backfilled borehole to ground surface with soil cuttings. 2. OVA readings from sample screening noted as follows: S1 = 0 ppm S2 = 10 ppm methane No OVA readings above background in the breathing zone. 3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone. 4. Sample S1 (ash) was submitted for TCLP metals and hazardous characteristics analyses.
20						
25						

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	10.0
ROCK CORED (LIN FT):	---
SAMPLES:	2S
BORING NO.	B138

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B139

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Rochester Auto Pound (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: S. Spring
H&A REP: J. Marschner

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	4-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE: CME-75, Truck-Mounted
BIT TYPE: 4-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 13.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		3 5 6 5	S1 6"/24"	3.0 5.0		Medium dense black ASH, with glass, cinders (possible coal fragments), damp. -FILL-
					6.5	
		2 2 2 3	S2 24"/24"	8.0 10.0		Loose black clayey SILT with wood, roots and other organic material, damp. -MARSH DEPOSIT-
		12 15 20 100/.5	S3 18"/24"	13.0 15.0	13.3	Same, except wet. Hard, highly to completely weathered, gray-brown, fine-grained, DOLOSTONE, wet. -LOCKPORT FORMATION-
						Bottom of Boring at 15.0 ft.

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 850 ppm (500 ppm methane)
   S2 = 70 ppm (50 ppm methane)
   S3 = 0 ppm
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY

OVERBURDEN (LIN FT):	15.0
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B-139

H&A OF NEW YORK, ROCHESTER, NEW YORK Consulting Geotechnical Engineers, Geologists and Hydrogeologists	TEST BORING REPORT	BORING NO. B140

PROJECT: FORMER EMERSON STREET LANDFILL MODIFIED REMEDIAL INVESTIGATION
CLIENT: CITY OF ROCHESTER
CONTRACTOR: NOTHNAGLE DRILLING

FILE NO. 70352-46
SHEET NO. 1 OF 1
LOCATION: City of Rochester Colfax Street Complex (See Plan)
ELEVATION: ---
DATUM: ---
START: 14 May 1993
FINISH: 14 May 1993
DRILLER: R. Bauer
H&A REP: M. Corrigan

ITEM	CASING	DRIVE SAMPLER	CORE BARREL
TYPE	Auger	S	---
INSIDE DIAMETER (IN)	2-1/4	1-3/8	---
HAMMER WEIGHT (LB)	---	140	---
HAMMER FALL (IN)	---	30	---

DRILLING EQUIPMENT & PROCEDURES

RIG TYPE:Diedrich D-50, Truck-Mounted
BIT TYPE: 2-1/4 in. I.D. H.S. Augers
DRILL MUD: ---
OTHER: Advanced augers to 4.0 ft. while standard sampling.

DEPTH (FT)	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE NUMBER & RECOVERY	SAMPLE DEPTH (FT)	STRATA CHANGE (FT)	VISUAL CLASSIFICATION AND REMARKS
		15 11 5 5	S1 6"/24"	3.0 5.0		Medium dense black ASH, with glass, cinders, trace wood and charred paper, wet. -FILL-
5						
		2 3 3 8	S2 3"/24"	8.0 10.0		Loose black ASH with glass, cinders, slag, and wood, trace brown silty clay, moist. -FILL-
10					11.5	
		13 100/.5	S3 6"/12"	13.0 14.0		Completely weathered, very dense, red-brown to gray DOLOSTONE--weathered to silty fine SAND, little gravel (dolostone fragments), wet. -RESIDUAL SOIL-
15						Bottom of Boring at 14.0 ft.
20						
25						

Notes:

1. Backfilled borehole to ground surface with soil cuttings.
2. OVA readings from sample screening noted as follows:
   S1 = 7 ppm methane
   S2 = 9 ppm (5 ppm methane)
   S3 = 0 ppm
   No OVA readings above background in the breathing zone.
3. No explosimeter or radioactivity meter readings above background from sample screening or in the breathing zone.

WATER LEVEL DATA					
DATE	TIME	ELAPSED TIME (HR)	DEPTH (FT) TO: BOTTOM OF CASING	DEPTH (FT) TO: BOTTOM OF HOLE	DEPTH (FT) TO: WATER

SAMPLE IDENTIFICATION

O Open End Rod
T Thin Wall Tube
U Undisturbed Sample
S Split Spoon

SUMMARY	
OVERBURDEN (LIN FT):	14.0
ROCK CORED (LIN FT):	---
SAMPLES:	3S
BORING NO.	B-140

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

Appendix 3

Table

Groundwater Analytical Results
Sampling Events: July, August, October, December 2010

Sample ID:	Part 703 Groundwater Standards (ug/L)	GMX-MW-1	GMX-MW-2	GMX-MW-3	GMX-MW-4	GMX-MW-5	GMX-MW-6S	GMX-MW-6D	P-5	MW-7	MW-5	GW-5	P-1	GW-6	MW-17	MW-16S	MW-16D
Lab Sample Number:		B2986-01	B2986-02	B2986-03	B2986-04	B2986-05	B2986-17	B2986-18	B2986-08	B2986-09	B2986-10	B2986-11	B2986-12	B3444-01	B3444-02	B3444-08	B3444-09
Sample Collection Date:		July 14, 2010	July 13, 2010	July 13, 2010	July 13, 2010	July 13, 2010	July 13, 2010	July 14, 2010	July 14, 2010	July 14, 2010	July 14, 2010	July 14, 2010	July 14, 2010	August 26, 2010	August 26, 2010	August 26, 2010	August 26, 2010
Dilution Factor:		1	1	1 & 20	1	1	1	1 & 20	1	1	1	1	1, 200 & 1000	1	1	1	1
Chlorinated VOCs																	
1,1,1-Trichloroethane	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Tetrachloroethene	5.0	<1 U	<1 U	1.9	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	5200 D	<1 U	<1 U	<1 U	<1 U
Trichloroethene	5.0	5.5	<1 U	1.5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	3200 D	<1 U	<1 U	<1 U	<1 U
cis-1,2-Dichloroethene	5.0	3.4	<1 U	870 D	<1 U	2.4	1.3	<1 U	<1 U	<1 U	<1 U	<1 U	24000 D	<1 U	<1 U	<1 U	<1 U
trans-1,2-Dichloroethene	5.0	<1 U	<1 U	17	<1 U	<1 U	1.2	<1 U	<1 U	<1 U	<1 U	<1 U	77	<1 U	<1 U	<1 U	<1 U
Vinyl Chloride	2.0	<1 U	<1 U	930 D	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	1400 D	<1 U	<1 U	<1 U	<1 U
1,1-Dichloroethane	5.0	<1 U	2.2	50	1.5	2.7	13	<1 U	<1 U	<1 U	<1 U	<1 U	67	<1 U	<1 U	<1 U	1.1
1,1-Dichloroethene	5.0	<1 U	<1 U	5.2	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	44	<1 U	<1 U	<1 U	<1 U
Chloroethane	5.0	<1 U	<1 U	160 D	<1 U	3.5	74	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Chloromethane	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	0.6 J	1.2	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Chlorinated VOCs		**8.9**	**2.2**	**2,035.6**	**1.5**	**8.6**	**89.5**	**0.0**	**0.0**	**0.6**	**1.2**	**0.0**	**33,988.0**	**0.0**	**0.0**	**0.0**	**1.1**
Petroleum Related VOCs																	
Benzene	1.0	<1 U	<1 U	20	<1 U	<1 U	3.2	520 D	<1 U	<1 U	<1 U	<1 U	6.2	<1 U	<1 U	<1 U	<1 U
Toluene	5.0	<1 U	<1 U	24	<1 U	<1 U	<1 U	300 D	<1 U	<1 U	<1 U	<1 U	13	<1 U	<1 U	<1 U	<1 U
Ethyl Benzene	5.0	<1 U	<1 U	5.8	<1 U	<1 U	<1 U	19	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
m/p-Xylenes	5.0	<2 U	<2 U	15	<2 U	<2 U	<2 U	130	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
o-Xylene	5.0	<1 U	<1 U	11	<1 U	<1 U	<1 U	36	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal BTEX		**0.0**	**0.0**	**75.8**	**0.0**	**0.0**	**3.2**	**1,005.0**	**0.0**	**0.0**	**0.0**	**0.0**	**19.2**	**0.0**	**0.0**	**0.0**	**0.0**
Methyl tert-butyl Ether	10.0	<1 U	<1 U	140 D	<1 U	<1 U	54	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
2-Butanone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	21	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Carbon Disulfide	60.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	6.4	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Cyclohexane	Not Listed	<1 U	<1 U	5.3	<1 U	<1 U	<1 U	85	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Methylcyclohexane	Not Listed	<1 U	<1 U	8.5	<1 U	<1 U	<1 U	42	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Acetone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	330	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
1,1,2-Trichlorotrifluoroethane	5.0	<1 U	<1 U	18	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-Trichlorobenzene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Isopropylbenzene	5.0	<1 U	<1 U	3.3	<1 U	<1 U	<1 U	1.5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Other VOCs		**0.0**	**0.0**	**175.1**	**0.0**	**0.0**	**54.0**	**485.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Total VOCs		**8.9**	**2.2**	**2,286.5**	**1.5**	**8.6**	**146.7**	**1,490.9**	**0.0**	**0.6**	**1.2**	**0.0**	**34,007.2**	**0.0**	**0.0**	**0.0**	**1.1**
Final Stabilized ORP (mV)		**18**	**-280**	**-202**	**-276**	**-315**	**68**	**-86**	**-162**	**-162**	**-211**	**-112**	**-83**	**-110**	**-130**	**-179**	**-270**
Final Stabilized DO (mg/L)		**8.04**	**0.00**	**0.00**	**0.00**	**0.00**	**NR**	**2.50**	**0.39**	**0.63**	**0.54**	**0.03**	**1.01**	**3.64**	**3.94**	**6.75**	**4.79**

D - Denotes results from initial dilution

D - Denotes results from secondary dilution (dilution factor of 1000)

Denotes results exceed the Part 703 Groundwater Standards

Table

Groundwater Analytical Results
Sampling Events: July, August, October, December 2010

Sample ID:	Part 703 Groundwater Standards (ug/L)	LAB-101	LAB-102	LAB-103	LAB-104	LAB-105	LAB-106	LAB-107	LAB-108	LAB-101	P-4	MW-19	GW-9	LAB-109	GW-7R
Lab Sample Number:		B3962-01	B3962-03	B3962-05	B3962-06	B3962-07	B3962-08	B3962-09	B3962-11	B4508-01	B4508-04	B4508-05	B4508-09	B4646-02	B4646-05
Sample Collection Date:		October 20, 2010	October 20, 2010	October 19, 2010	October 20, 2010	October 19, 2010	October 20, 2010	October 19, 2010	October 19, 2010	December 9, 2010	December 9, 2010	December 9, 2010	December 9, 2010	December 29, 2010	December 29, 2010
Dilution Factor:		1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chlorinated VOCs															
1,1,1-Trichloroethane	5.0	<1 U	<1 U	<1 U	1.3	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Tetrachloroethene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Trichloroethene	5.0	<1 U	<1 U	<1 U	1.1	<1 U	0.73 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	3.8
cis-1,2-Dichloroethene	5.0	1	<1 U	1.2	2.2	<1 U	1.1	<1 U	<1 U	<1 U	<1 U	<1 U	45	<1 U	53
trans-1,2-Dichloroethene	5.0	<1 U	<1 U	<1 U	1.7	<1 U	1.5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	2.8
Vinyl Chloride	2.0	<1 U	<1 U	1.3	3.8	<1 U	2.1	<1 U	<1 U	<1 U	<1 U	<1 U	67	<1 U	11
1,1-Dichloroethane	5.0	<1 U	<1 U	<1 U	45	<1 U	38	<1 U	<1 U	<1 U	<1 U	<1 U	3.8	<1 U	<1 U
1,1-Dichloroethene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Chloroethane	5.0	<1 U	<1 U	<1 U	11	<1 U	5	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Chloromethane	5.0	<1 U	1.9	<1 U	<1 U	<1 U	<1 U	1.6	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Chlorinated VOCs		**1.0**	**1.9**	**2.5**	**66.1**	**0.0**	**48.4**	**1.6**	**0.0**	**0.0**	**0.0**	**0.0**	**115.8**	**0.0**	**70.6**
Petroleum Related VOCs															
Benzene	1.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Toluene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Ethyl Benzene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
m/p-Xylenes	5.0	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	2.3	<2 U	<2 U	<2 U	<2 U	<2 U
o-Xylene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal BTEX		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Methyl tert-butyl Ether	10.0	<1 U	<1 U	<1 U	1.7	<1 U	0.87 J	<1 U	<1 U	<1 U	<1 U	0.61 J	1.6	<1 U	<1 U
2-Butanone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Carbon Disulfide	60.0	1.2	1.6	2	<1 U	<1 U	<1 U	1.3	1.9	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Cyclohexane	Not Listed	<1 U	<1 U	<1 U	0.73 J	<1 U	0.72 J	<1 U	<1 U	2.4	<1 U	<1 U	<1 U	<1 U	<1 U
Methylcyclohexane	Not Listed	<1 U	<1 U	<1 U	1.2	<1 U	0.67 J	<1 U	0.82 J	5.5	<1 U	<1 U	<1 U	<1 U	<1 U
Acetone	50.0	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	3.4 J	<5 U	<5 U	<5 U	<5 U
1,1,2-Trichlorotrifluoroethane	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-Trichlorobenzene	5.0	<1 U	<1 U	<1 U	1.2	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Isopropylbenzene	5.0	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
Subtotal Other VOCs		**1.2**	**1.6**	**2.0**	**4.8**	**0.0**	**2.3**	**1.3**	**2.7**	**7.9**	**3.4**	**0.6**	**1.6**	**0.0**	**0.0**
Total VOCs		**2.2**	**3.5**	**4.5**	**70.9**	**0.0**	**50.7**	**2.9**	**2.7**	**10.2**	**3.4**	**0.6**	**117.4**	**0.0**	**70.6**
Final Stabilized ORP (mV)		**-253**	**-322**	**-179**	**-319**	**-296**	**-300**	**-245**	**-362**	**-110**	**34**	**-128**	**-89**	**-167**	**-21**
Final Stabilized DO (mg/L)		**7.09**	**5.98**	**9.35**	**5.83**	**8.09**	**7.16**	**7.80**	**6.96**	**1.24**	**2.37**	**1.84**	**1.83**	**2.11**	**3.14**

D - Denotes results from initial dilution

D - Denotes results from secondary dilution (dilution factor of 100

Denotes results exceed the Part

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Appendix 4

Appendix
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. “Periodic” monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or

overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the

work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix 1B
Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50^{o} C (14 to 122^{o} F);
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative,

this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see Paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed. Activities that have a high dusting potential--such as solidification and treatment involving materials like kiln dust and lime--will require the need for special measures to be considered.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.