Always at Your Service

January 30, 2008

Mr. Salvatore Priore, P.E.
NYS Department of Environmental Conservation
625 Broadway
Albany, New York 12233-7013

RE: RG&E – Canal Street, Rochester Former MGP Site
Multi-Site VCA (MSVCA) Index # B8-0535-98-07
Site # V00594-8

Dear Mr. Priore:

Enclosed for your review are two copies of a report entitled *Site Characterization Report, Canal, Street Former MGP Site, Rochester, New York* (SC Report) dated January 2008 that was prepared by H&A on RG&E's behalf.

After you have reviewed the report please contact me so we can discuss the next steps. If you have any question, please contact me at (585) 771-4556.

Sincerely,

Steven R. Mullin

Steven Mullin
Lead Analyst
RG&E Environmental Compliance

Enclosure

c: Robert W. Schick, P.E. - DEC, (w/o enclosure)
James Charles Esq., Esq. – DEC (one copy of report)
David Crosby, P.E. – DEC (w/o enclosure)
Julia Kenney – NYSDOH (one copy of report)
Joespeh Simone, P.E. – Manager of Environmental Compliance (w/o enclosure)
Thomas F. Walsh, Esq. – Hiscock & Barclay – Special Counsel to RG&E (one copy of report)
File

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File – H/Canal St/ SC implmentation/SC Report/SRM627

SITE CHARACTERIZATION REPORT
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

by

Haley & Aldrich of New York
Rochester, New York

for

Rochester Gas & Electric Corp.
Rochester, New York

File No. 33879-006
30 January 2008

30 January 2008
File No. 33879-003

Rochester Gas and Electric Corporation
89 East Avenue
Rochester, New York 14649

Attention: **Mr. Steve Mullin**

Subject: **Site Characterization Report**
Canal Street Former MGP Site
Rochester, New York
Site No. V00594-8
Index No. B8-0535-98-07

Dear Mr. Mullin:

Haley & Aldrich is pleased to present this Site Characterization Report for the Canal Street Former Manufactured Gas Plant (MGP) Site in Rochester, NY. The site characterization was performed according to the September 2006 Site Characterization Work Plan, approved by the New York State Department of Environmental Conservation. This report describes the site history, current site conditions, summarizes the findings of the site characterization activities and presents conclusions and recommendations.

If you have any questions, do not hesitate to contact us.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Glenn M. White
Senior Scientist

Jonathan D. Babcock, P.E.
Project Manager

Colin R. Sweeney
Vice President

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EXECUTIVE SUMMARY

Rochester Gas and Electric Corporation (RG&E) retained Haley & Aldrich of New York (Haley & Aldrich) to conduct this Site Characterization Investigation at the Canal Street Former Manufactured Gas Plant (MGP) Site (the Site). The Site is located on portions of two contiguous parcels with the postal addresses of 90 Canal Street, and 65 Trowbridge Street, Rochester, New York. This investigation was performed in accordance with the requirements of a Voluntary Cleanup Agreement (Index # B8-0535-98-07, February 20, 2003) (MSVCA) between RG&E and the New York State Department of Environmental Conservation (NYSDEC) and of the NYSDEC-approved Site Characterization Work Plan dated September 2006 (Work Plan), prepared by Blasland, Bouck, and Lee, Inc.

The MGP occupied approximately 1.6 acres of two parcels. A five story brick building now occupies much of the 0.6 acre 90 Canal Street parcel located on the southeast side of the Site. The basement, 1st, and 2nd floors of that brick building are commercial space and the 3rd, 4th, and 5th floors of the building are residential apartments. A paved parking lot is located immediately south of the brick building. The 1.8 acre 65 Trowbridge Street parcel is now primarily vacant, with the exception of two unused railroad tracks and one active track that traverse the northern portion of the parcel.

A detailed examination of land uses at the Site prior to the construction of the MGP has not been performed. However, some time before the MGP operations began, railroad tracks were already laid across the northern part of the Site between the location of the current five-story brick building and the former Erie Canal (which was located immediately north of the 65 Trowbridge Street parcel in the current foot print of Broad Street). The Site and adjacent areas were used as a rail loading and unloading area, including the transfer of petroleum products between rail cars and underground pipelines serving an off-site petroleum company.

The MGP used the carbureted water process to generate gas. The operational life of the MGP (10 years or less between 1880 and 1891) was cut short by an explosion of its gas holder. Since MGP operations ceased, the Site has been used for more than 115 years for various commercial and industrial uses including: railroad yard operations, a wholesale grocery business, Eastman Kodak Company, and, since 1967, by various tenants of the five-story building for businesses such as printing, light manufacturing, and administrative offices.

Field investigations under the Work Plan were conducted during November and December 2006 and October 2007. A comprehensive investigation program was conducted, consisting of 25 soil borings, of which seven were completed as groundwater monitoring wells. The soil and two rounds of groundwater samples collected were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and cyanide.

The geology underlying the Site consists of dolostone bedrock overlain by unconsolidated materials ranging in depth from 7.5 to 15 feet below ground surface (bgs). The unconsolidated materials include urban fill and discontinuous layers of lacustrine soils, organic soils, and glacial till. The thickness of the urban fill ranged from approximately four to 15 feet bgs and contained varying amounts of concrete, brick, wood, ash, cinders, ceramic materials, and coal. In places, the fill extends to the top of bedrock, including in the area of the former gas holder, and suggests some re-working of the bedrock surface. Generally, the bedrock surface also slopes to the northeast.

Non-aqueous phase liquid (NAPL) was not encountered in any of the soil borings or monitoring wells, including in the area of the former gas holder. There were also no visual observations of coal tar or oil in the soil samples collected from the borings. Staining, possibly indicative of petroleum or coal tar constituents was noted in only three split spoon samples (from MW-2, MW-3, and SB-14), and each of those materials were subjected to laboratory analytical testing. Petroleum-like odors were reported at 10 boring locations, and possible naphthalene-like odors were reported at three locations. A "lime-like" material, possibly associated with former MGP purifier operations, was observed intermittently within the fill at two soil borings (SB-6 and MW-6) at disparate locations across the Site. All soil samples submitted to the laboratory were analyzed for cyanide, including one containing the "lime-like" material from SB-16. Cyanide was not detected above the Soil Cleanup Objectives (SCOs) referenced below in any of the samples.

For comparison purposes only, the analytical results of the soil samples were compared to New York State (NYS) Part 375 SCOs for both Restricted Residential and Restricted Commercial uses, as well as to the NYS Technical and Administrative Guidance Memorandum (TAGM) 4046 SCOs. Of the 25 soil boring locations only 9 locations had soil analytes at concentrations slightly above the Part 375 SCOs. None of the soil samples collected exhibited VOC concentrations in excess of the Part 375 SCOs. Only three VOCs exceeded the TAGM 4046 SCOs – acetone, methylene chloride, and total xylenes. Neither acetone nor methylene chloride are compounds associated with MGP wastes. The only SVOCs detected above the referenced SCOs were seven higher-molecular weight PAHs that were detected at relatively low concentrations. Metals that were found at concentrations greater than the Part 375 SCOs were arsenic, barium, cadmium, lead, manganese, and mercury, each found at four or fewer locations. The same metals were found to exceed the TAGM 4046 SCOs, with the addition of calcium, iron, copper, magnesium, nickel, selenium, and zinc. Of those metals, arsenic, calcium, iron, magnesium, mercury, and zinc exceeded the TAGM 4046 SCOs at ten or more locations.

Soil analytes detected at concentrations exceeding the referenced SCOs appeared randomly distributed throughout the Site and do not indicate the presence of a specific source on the Site. The origins of the impacts are not known; however, the nature and distribution of constituents in the Site soils are similar to typical urban background conditions.

Groundwater samples were collected from each of the seven newly installed monitoring wells in December 2006 and October 2007. NAPL was not observed in any of the groundwater monitoring wells and only two (MW-2 and MW-3) of the seven groundwater samples collected exhibited VOCs in excess of New York Ambient Water Quality Standards and Guidance (AWQS). Groundwater analyses from MW-2 detected benzene, toluene, ethylbenzene, total xylenes, and naphthalene at concentrations above the AWQS. The levels are relatively low and are not indicative of a significant nearby contaminant source. The Part 375 and TAGM 4046 SCOs were not exceeded for any of those analytes in the soil sample at MW-2. The groundwater sample from MW-3 exhibited benzene, ethylbenzene, total xylenes, and naphthalene at similarly low concentrations. The Part 375 and TAGM 4046 SCOs were not exceeded for any of those analytes in the soil sample at MW-3.

The groundwater sample from MW-3 also detected chlorinated VOCs unrelated to the MGP at concentrations greater than the AWQS. Trichloroethylene was detected above the AWQS in MW-3, as well as its degradation products cis-1,2-dichloroethene and vinyl chloride. For

comparison, none of the soil samples analyzed at the Site exhibited those compounds greater than the referenced SCOs.

Only three (MW-2, MW-3, and MW-5) of the seven groundwater samples taken in December 2006 exhibited SVOCs in excess of AWQS, with not one of the samples showing any exceedances for the previously noted seven higher molecular weight PAHs. Those three wells are located on the commercial-use 65 Trowbridge Street parcel. MW-2 is located immediately downgradient of the former gas holder. MW-5 is located cross-gradient to the east of and across the railroad tracks from the former gas holder. Pentachlorophenol (a common wood preservative) was detected at a trace concentration in MW-5. Naphthalene was detected in MW-2 and MW-3 in excess of the AWQS. Naphthalene, however, was not detected in soil samples at concentrations above the referenced SCOs at the Site.

Monitoring wells MW-4 and MW-7 are located hydraulically downgradient from MW-2 and MW-3. VOCs and SVOCs that were greater than the AWQS in MW-2 and MW-3 were not detected in MW-4 and MW-7, indicating that organic constituents are localized, not migrating, and/or are attenuating rapidly.

Metals were consistently detected in the monitoring wells at concentrations exceeding AWQS in both upgradient and downgradient wells, particularly for magnesium, manganese, iron, and sodium. Considering all seven wells, iron and magnesium were the only analytes that exceeded TAGM 4046 SCOs for soil and the AWQS for groundwater in the same well. These metals are consistent with natural groundwater conditions related to the dolostone bedrock and indigenous soils in the area. Lead was also detected in one of the seven monitoring wells (MW-5) at a concentration exceeding the AWQS. Additionally, in MW-5 only, arsenic (13 mg/L) exceeded the TAGM 4046 SCO for soil (12 mg/L) and the AWQS for groundwater. It is interesting to note that none of the soil samples collected from the depths consistent with the screened intervals of the seven monitoring wells exceeded Part 375 SCOs for the same analytes detected above the applicable AWQS. This is further evidence of the lack of a significant source to groundwater contamination.

In summary, the Site is located in an urban area with a long history of commercial/industrial use, including former railroad and petroleum operations unrelated to the former MGP. The MGP operations were conducted over a relatively brief period of approximately 10 years. The Site and surrounding area have been served by municipal water for more than 100 years and have had more than 115 years of commercial and industrial use since MGP operations ceased. VOCs were not detected in any soil samples above Part 375 SCOs applicable to the mixed commercial-residential use of the 90 Canal Street parcel and the commercial use of the 65 Trowbridge Street parcel. Most of the soil samples did not have detections of SVOCs above applicable Part 375 SCOs; and even where they did, those SVOCs were not observed above AWQS in the groundwater samples collected from the corresponding monitoring wells. The origin of the impacts that caused the exceedances of AWQS observed at two monitoring wells were organic compounds similar to those typically found in historical fill and in areas of historical industrial uses but are also similar to MGP-type uses and/or residuals. The only exceedances of referenced soil SCOs from the borings corresponding to these monitoring wells were relatively immobile higher-ring PAHs that were not detected in the groundwater from these wells. The presence of other constituents (chlorinated solvents, iron, magnesium, and manganese) unrelated to MGP operations in the two monitoring wells also suggest contribution from impacts other than the former MGP. Other monitoring wells located

relatively short distances downgradient did not detect organic constituents above the AWQS, indicating localized impacts and/or rapid attenuation.

No apparent on-site sources of groundwater contamination were identified. NAPL or coal tar was not encountered and there were only three visual observations of other petroleum or coal tar contamination such as staining. Overall, based on the data collected, the origin of the residual impacts observed could not be identified; however, the impacts observed do not appear to be indicative or representative of a single source or type of source, but rather the nature and distribution of constituents in the Site soils are similar to typical urban background and historical industrial conditions. As such, further characterization of site soils does not appear to be warranted.

To verify that organic constituents in the groundwater are either localized on-site and/or are not migrating or are attenuating, RG&E conducted a second round of groundwater sampling on 11 and 12 October 2007 (in a "seasonal low period") to compare to prior results. The results were consistent with the previous sampling round, which affirmed the conclusions drawn from the groundwater data collected in December 2006. Based on the data collected, further characterization of site groundwater does not appear to be warranted.

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1. INTRODUCTION

Rochester Gas and Electric Corporation (RG&E) retained Haley & Aldrich of New York (Haley & Aldrich) to conduct this Site Characterization Investigation at the site of a former manufactured gas plant (MGP), the footprint of which is believed to have been located on portions of two contiguous parcels known as 90 Canal Street and 65 Trowbridge Street, Rochester, New York. The former MGP was operated by the Municipal Gas Light Company of the City of Rochester (New York), which was a predecessor company to RG&E. The Site is currently referred to as the Canal Street Former MGP Site (the Site). The 90 Canal Street and 65 Trowbridge Street parcels are not currently owned by RG&E and have had various property owners and uses since the MGP ceased operation in the early 1890's. The investigation was performed in accordance with the requirements of Multi-Site Voluntary Cleanup Agreement (Index # B8-0535-98-07, February 20, 2003) (MSVCA) between RG&E and the New York State Department of Environmental Conservation (NYSDEC), and of the NYSDEC-approved Site Characterization Work Plan dated September 2006 (Work Plan), prepared by Blasland, Bouck, and Lee, Inc. (BBL).

1.1 Purpose of Investigation

The purpose of the investigation was to identify whether the Site was impacted by former MGP operations. The investigation addressed the following objectives, as stated in the Work Plan:

- Determine if MGP-related and/or non-MGP-related chemical constituents are present in soil and/or groundwater at the Site;
- Identify the potential presence of MGP-related and/or non-MGP-related by-product residuals (such as coal tar, non-aqueous phase liquid, purifier wastes, petroleum, solvents, etc.) in soil and/or groundwater at the Site;
- Evaluate, to the extent practicable, whether groundwater flow may be a pathway for offsite migration of identified chemical constituents (if present);
- Determine compliance with applicable NYSDEC standards, criteria, and guidance values (SCGs); and
- Provide sufficient data to evaluate the necessity for further action.

1.2 Site Setting

The footprint of the Canal Street Former MGP Site encompasses approximately 1.6 acres and is located on portions of two parcels in the City of Rochester, Monroe County, New York. As shown on Figure 1, the Site is located approximately 0.7 miles west of the Genesee River, which flows north towards Lake Ontario. Part of the former MGP Site is located at 90 Canal Street, which is an approximately 0.6 acre parcel that is currently owned by McGuire Properties, Inc. The other part of the former MGP Site extends north and east onto 65 Trowbridge Street, which is an approximately 1.8 acre parcel that is currently owned by Wm. B. Morse Lumber Co. (Morse Lumber). The Site is bordered by Canal Street to the west, a lumber yard to the south and east, a used car dealer/service garage to the north, and West Broad Street to the north. The layout of the Site and surrounding properties is shown on Figure 2. Much of the parcel located at 90 Canal Street is occupied by a five-story brick building. The basement and 1st and 2nd floors of the brick building are commercial space and the 3rd, 4th, and 5th floors of the building are residential apartments. The rest of 90 Canal

Street is occupied by a paved parking lot that is located immediately south of the brick building.

The 65 Trowbridge Street parcel is primarily vacant with the exception of two abandoned railroad tracks and one active track that traverse the northern portion of the parcel from east to west. Surface materials noted at the Site include railroad ballast, wood, slag and coal, trash (including wood, plastic containers, and tires), paving (brick and asphalt), grass, and unmaintained vegetation. The Site is generally flat with an elevation of approximately 512 feet above sea level and gently sloping to the northeast. Correspondingly, surface drainage flows to the northeast and ultimately to the Genesee River. West Broad Street is located approximately 300 feet north/northeast of the Site and was built in the footprint of the canal bed of the former Erie Canal. The former Genesee Valley Canal (which has been filled) is located immediately east of the Site. The City of Rochester receives its potable water supply from Lake Ontario and other surface water reservoirs located considerable distances from the Site. The Site and areas upgradient and downgradient have had water supply from the City of Rochester since the late 1800's.

1.3 Summary of Site History

This section discusses the historical use of the Site and adjacent properties, with emphasis on the former MGP operations. The Site has been used for commercial and industrial purposes for the 115 years since the MGP operations ceased. A summary of the site history prepared by Blasland, Bouck & Lee, Inc. (BBL) was presented in their "Site Characterization Work Plan" dated September 2006. To supplement that information Haley & Aldrich performed a review of local history reference and source material available at the Local History Department of the Central Library of Rochester and Monroe County. In addition to the review of newspaper articles from the 1880s and early 1890s, our library research included review of the 1935 plat map and listings for Canal Street, Trowbridge Street, and West Broad Street published in Rochester street directories from 1892 to 2002 (reviewed at intervals of approximately 5 years). A search of the library's catalog (including the digitized Rochester Images collection of historic photographs, drawings, and maps) was performed, and pertinent articles in the Rochester History pamphlet series were reviewed. Members of the library's local history department staff were consulted to determine what other potentially-relevant source material may be available. However, no other pertinent information was found in the materials identified by the library staff.

Copies of building permit records were obtained from the City of Rochester's property database for: 90 Canal Street; 65 Trowbridge Street; and 390 West Avenue (the adjacent W.B. Morse Lumber Company property). The historical information summarized in the following sections is based on written historical information collected by Haley & Aldrich and from the historical information reported in the Work Plan.

1.3.1 MGP-Related Site History

Gas manufacturing was performed by Municipal Gas Light Company gas works, which was in operation from 1880 to 1891. In the time period from 1877 to 1891, crude oil and refined petroleum products were loaded and unloaded in significant volumes along the rail lines that crossed the Site and at adjacent rail yards. Crude oil and petroleum products not related to the MGP's operation were apparently also transferred at or adjacent to the Site to an off-site petroleum company via an underground pipeline and/or by bulk delivery transportation.

During its operation, the MGP also received naphtha and other petroleum products by rail car as well as via an underground pipeline owned and operated by the off-site petroleum supplier.

This loading and unloading of petroleum tank cars to two underground pipelines is reported to have occurred from 1881 to 1883. The pipelines extended from the Buffalo, Rochester and Pittsburgh Railroad (BR&P RR) south along the bottom of the Genesee Valley Canal to Vacuum Oil Works, a refinery located approximately one mile south of the Site. After 1883, one pipeline was converted to function as a supply line for petroleum naphtha from Vacuum Oil Works to the MGP. Also, in approximately 1883, one of the two pipelines was extended west across the Site, crossing Canal Street and extending at least to Litchfield Street to reach the BR&P RR freight yards on adjacent properties to the east and west.

Beginning in 1883, the MGP used 500 to 1,000 gallons of naphtha (a petroleum distillate somewhat lighter than kerosene) per day in the gas manufacturing process. Naphtha was pumped from Vacuum Oil Works through a pipeline into two 10,000-gallon above ground tanks located at the junction of the Erie and Genesee Valley Canals.

Manufactured gas was stored at the Site during the 1880s until 1891, when an explosion ended the MGP operations. At the time of the explosion, the gas holder had been emptied and was under repair.

The MGP occupied the property from about 1880 until about 1895. From about 1915 until at least 1935, the Brewster Gordon & Co. wholesale grocery business was present at the Site. By 1938, an Eastman Kodak Company camera warehouse occupied the Site. Kodak sold its property to a real estate development company doing business as 90 Canal St. Inc. in 1967. The 90 Canal Street parcel is currently occupied by the five story brick building and parking lot as described in Section 1.2. The first floor of the building is currently leased by three companies: an injection molding company, a cooling tower and boiler water treatment chemical company, and a printing company. The 65 Trowbridge Street parcel is currently occupied by Morse Lumber operations and by railroad tracks. The portion of the 65 Trowbridge Street parcel between the existing five story building and Broad Street has been used for rail operations continually since the closing of the MGP. There is currently one active railroad track crossing the former Site.

In 2004, a petroleum spill was reported to NYSDEC (Spill No. 0408337) in connection with the car dealer/service garage located at the northern end of the Site. The Spill Incidents Data Base available on the NYSDEC web site indicates that the spill file was closed in February 2007; however, the exact actions taken to close this spill are unknown.

One map source suggested that Buckeye Partners, LP (Buckeye) may currently operate a petroleum pipeline on or adjacent to the Site. Haley & Aldrich contacted the Buckeye Right-of-Way department and confirmed that Buckeye had no pipelines crossing the Site. The nearest Buckeye pipeline is approximately two miles away

1.3.2 Historical Information for Adjacent Properties

South of the Site, the Morse Lumber yard has been present since prior to 1892, and from about 1892 until 1910, the Rock Asphalt Paving Company was also present. North of the Site, between Canal Street and Broad Street, a gas station appears on the 1935 Rochester Plat map and on Sanborn® maps beginning in 1950. The location is currently a small used car dealership and repair garage.

Northwest of the Site, from 1894 until about 1931, a coal company was present between the BR&P RR and the New York Central Railroad crossings. A coal storage area in this rail yard located about 200 feet northwest of the Site is shown on available maps from the period 1900 through 1971. Various industrial/commercial businesses were present along Canal Street to the west and southwest of the Site, including a macaroni factory, a shoe factory, and a carriage/car manufacturing company (Jas. Cunningham, Son & Co.). The Volunteers of America is currently a tenant of 89 Canal St., to the southwest of the Site. There is an open petroleum spill record at their location as a result of the discovery of gasoline in the building sump in 1993.

Southwest of the Site, beginning in 1850, Jas. Cunningham, Son & Co. purchased property between Litchfield and Canal Streets, and began carriage manufacturing. By the 1920s, they were producing a line of gasoline combustion automobiles. In 1928, they became Cunningham-Hall Aircraft Corporation, and manufactured single-engine cabin airplanes. During both World Wars I and II, Jas. Cunningham, Son & Co. manufactured goods for the war effort (i.e., tanks in WWI and aircraft parts in WWII). In 1961, the business moved to Honeoye Falls, New York.

The east side of the Site was bounded by the Genesee Valley Canal prior to and during the early operation of the MGP. Releases of oil and petroleum products from Vacuum Oil Works into the Genesee Valley Canal before the canal was abandoned in 1877 were reported in the historical documents and are a potential source of on-site residual petroleum impacts. During this same time, a municipal sewer line (a 45-inch wide tunnel) was present beneath the Genesee Valley Canal and ran along the same alignment.

In 1887, the petroleum naphtha pipeline from Vacuum Oil Works broke at a location about 0.4 miles south of the Site, as a result of a sewer construction project. The naphtha found its way into the municipal sewer system and thereby flowed north in the sewer line beneath the Genesee Valley Canal (potentially discharging into the canal) and ultimately flowing to the High Falls area, where several buildings were destroyed due to explosions and fires. Following this event, rail was used to deliver petroleum products to the MGP.

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2. FIELD INVESTIGATION

Prior to the investigation activities, field personnel mobilized to the Site to verify existing conditions and stake (with flagging) the proposed exploration locations. Once the sample locations were marked, Dig Safely New York was contacted to identify and mark underground utilities present on the Site. Field investigations were conducted during November and December 2006 according to the Work Plan.

2.1 Geophysical Survey

Geomatrix was engaged by RG&E to perform a geophysical survey at the Site using ground penetrating radar (GPR) and electromagnetics (EM) to identify potential former MGP features as may be identified by subsurface geophysical or metallic anomalies. The geophysical survey was performed by Geomatrix on November 19, 2006. The geophysical survey and its results are discussed in more detail below (the geophysical survey report is included in Appendix A).

2.1.1 Objectives

The primary objective of the geophysical survey was to identify the location of the former gas holder. The secondary objective was to explore for any anomalies of potential environmental significance.

2.1.2 Methodology

A reference grid (approximately 3-feet-on-center) was established over the Site to facilitate data acquisition. The property was surveyed using a Geonics EM61, which detects metallic objects in the soil. A Geonics EM31 Terrain Conductivity meter was used to measure the ground conductivity and the in-phase component of the EM field. The EM31 was used primarily to provide coverage in the northern portion of the survey area where dense brush precluded the acquisition of EM61 data. GPR works on the principle of inducing high frequency radio waves into the earth and recording the energy that is reflected back from depth. See Appendix A for more detailed information on the methodology used for the geophysical survey.

2.1.3 Results

The results of the geophysical survey are summarized in Figures 1 through 7 of the report in Appendix A. With the exception of the southern parking lot area, numerous possible buried metal anomalies representative of urban fill were observed randomly scattered throughout the Site. Some linear patterns were observed but these are believed to be associated with the railroad tracks and/or utilities that run under the tracks. The former gas holder was not identified during the survey. None of the anomalies appear to correlate with former MGP features as depicted on historic Sanborn® maps.

The EM61 data are presented in Figures 1 and 2 of the report in Appendix A. The EM31 conductivity and in-phase data are presented in Figures 3 through 6 of the report in Appendix A. The quality of the EM31 data relative to the EM61 data is poor. An anomaly in the EM31 data set is the conductivity and in-phase high observed in the northern area; a response that is typical of a large buried object or an area of electrically conductive fill material. This

anomaly may be indicative of a layer of lime identified in soil boring SB-16 (see Section 4.0). A time slice of the GPR data is presented in Figure 7 of the report in Appendix A. No GPR anomalies that could be mapped were detected, with the exception of buried utilities detected in the southern parking lot. See Appendix A for a more detailed discussion of the results.

2.2 Soil Investigation

The objectives of the soil investigation and the general procedures for obtaining and analyzing subsurface soil samples are detailed below.

2.2.1 Objectives

The objectives for soil investigations were presented in Section 1.1. In addition, the subsurface information collected as part of this investigation was used to characterize the distribution, saturated thickness, and relative hydraulic conductivity of subsurface soils at the Site. The following sections describe the methods used to collect soils for characterization.

2.2.2 Soil Borings

Although a total of only 14 soil borings were proposed in the Work Plan, a total of 25 borings were drilled based on soil conditions encountered and consultation with RG&E and the NYSDEC. The soil boring locations are shown on Figure 2.

Soil borings were completed using 2¼-inch inside diameter hollow stem augers (HSA). Continuous soil sampling was conducted at the boring locations by advancing a 2-foot long, 2-inch outer diameter (OD) split-spoon sampling device ahead of the augers. Soil recovered from each sample interval was visually characterized for color, texture, and moisture content. If encountered, the presence of visible staining, non-aqueous phase liquid (NAPL), and obvious odors were noted. In addition, each split spoon sample was screened for volatile organic vapors using a MiniRAE 2000 photoionization detector (PID). PID readings were recorded on boring logs. Each boring was completed to a depth of refusal (Soil Boring Logs are included in Appendix B).

2.2.3 Soil Analyses

A minimum of one subsurface soil sample from each boring was analyzed for Target Compound List (TCL) volatile organic compounds (VOCs) by SW846 8260B, TCL semivolatile organic compounds (SVOCs) by SW846 8270C, Target Analyte List (TAL) metals by SW846 6010B and 7471A, and cyanide by SW846 9012A. In addition, some of the samples were analyzed for total petroleum hydrocarbons (TPHs) by EPA 310.1 and diesel range organics (DRO) and gasoline range organics (GRO) by SW846 8015B based on indications of petroleum-type odors observed in the field.

Samples were generally selected for laboratory analyses based on the judgment of the field geologist to meet the soil investigation objectives listed above, visual observation of MGP and/or non-MGP residual staining in the soil sample interval, and/or the sample interval with the highest PID reading. If no staining or PID readings were encountered at a boring location, the sample interval immediately above the groundwater table was selected for laboratory analysis. Analytical results are discussed in Section 4.1. Analytical results were compared to the NYS Part 375 Soil Cleanup Objectives (SCOs) for Restricted Residential

and/or Restricted Commercial Use and to the NYS Technical and Administrative Guidance Memorandum (TAGM) 4046 SCOs.

Air emissions in the worker breathing zone during drilling activities were monitored using a PID. Real-Time Aerosol Monitors (mini-RAMs) were used along with PIDs in accordance with the Community Air Monitoring Plan (CAMP) provided in the Work Plan. Air monitoring documentation is provided in Appendix C.

According to the CAMP, work activities needed to be temporarily halted if the ambient air concentration of organic vapors at the downwind perimeter of the work area exceeded 5 parts per million (ppm) above background for a 15-minute time weighted average. This is the short term exposure limit (STEL). Activities needed to be shut down if the organic vapor STEL exceeded 25 ppm above background. On 28 November 2007, the STEL exceeded 25 ppm after the first 50 minutes of data logging in the downwind PID. However, at that time, there was no activity being performed that would have created high concentrations of organic vapors. This was confirmed by the instrument being used within the working area. The downwind PID was re-calibrated and set up again. After the re-calibration, the organic vapor STEL levels were much lower (below 5 ppm). On 1 December 2006, the STEL exceeded 25 ppm at the downwind PID again for approximately 45 minutes. Similar to the situation on 28 November 2007, there was no evidence in the working area that high concentrations of organic vapors were being generated. Work was completed within the 45 minute period of elevated readings in the downwind PID. The weather on this day was very windy and rainy, which may have contributed to the apparently incorrect high readings in the downwind PID.

According to the CAMP, if the downwind particulate level was 100 ug/m^3 greater than background at the upwind perimeter for a 15 minute period, then dust suppression techniques needed to be employed. On 27 November 2007, the rock core at MW-3 was drilled without using water. This created a dust cloud that lasted for approximately ten minutes. From that time on, water was used for rock core drilling. The particulate level at the downwind perimeter was not 100 ug/m^3 greater than background at any other time during the field activity. On days with precipitation, dust monitoring was not performed due to dampness of the soil.

Subsequent to the soil sampling activities, a New York State licensed surveyor field surveyed the soil sampling locations and other pertinent site features. For each soil boring, the surveyor determined its location and the ground surface elevation relative to a fixed site-specific datum (see Figure 2).

For equipment decontamination, non-disposable equipment, including drilling tools and equipment were decontaminated prior to first use on site, between each investigation location, and prior to demobilization. The integrity of the decontamination procedures were checked periodically with equipment rinse blanks, as required by the quality assurance project plan (QAPP).

2.3 Groundwater Investigation

The groundwater investigation objectives and the general procedures used to obtain and analyze groundwater samples are detailed below.

2.3.1 Objectives

The objectives of the groundwater investigation were presented in section 1.1. The following sections describe monitoring well installation, groundwater sample collection, and hydrogeology assessment.

2.3.2 Groundwater Monitoring Well Installation

Seven overburden monitoring wells were installed at the locations shown on Figure 2. The number and placement of monitoring wells were selected in accordance with the Work Plan, consideration of subsurface conditions encountered during borehole drilling, and in consultation with RG&E and the NYSDEC. Monitoring wells were positioned to characterize groundwater quality and determine groundwater flow direction in the overburden soils.

At each monitoring well location, a soil boring was first completed using the methodology described in Section 2.2.2 to refusal at bedrock. The borings were then over-drilled using 4¼-inch inside diameter HSAs for the monitoring well installation. Following completion of the borings, monitoring wells were installed and screened to span the water table surface. Surface mount completions were installed at each location except MW-3 and MW-4 which were completed as stick-ups in the only grass-covered areas of the Site which are not likely to receive vehicle traffic. The monitoring wells were constructed using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) pipe and were completed to the top of rock with 0.01-slot well screen. Due to the relatively shallow bedrock, the well screen lengths had to be adjusted to provide adequate thickness of the seals at the ground surface. Each well was installed with a 2-foot sump that was drilled and grouted into the bedrock, in accordance with the NYSDEC-approved Work Plan. Monitoring well installation reports are provided in Appendix B.

Following installation (and immediately prior to development as discussed below), each monitoring well was checked for the presence of NAPL Each well was then developed by pumping water from the well until the water was visibly clear or at least 10 well volumes were removed. For wells MW-1, MW-2, MW-4, MW-5, and MW-7, ten well volumes were removed during development. For well MW-3, 14 well volumes were pumped out, and for well MW-6, 20 well volumes were pumped out. Water generated by monitoring well development and equipment decontamination was securely stored in steel 55-gallon drums prior to being transported for off-site disposal by RG&E.

A New York State licensed surveyor field surveyed the monitoring well locations to determine the location, ground-surface elevation, and measuring-point elevation (defined as the top of the inner casing).

2.3.3 Groundwater Sampling

Two rounds of groundwater sampling were completed during the Site Characterization activities. One complete round of groundwater sampling was completed during 26-28 December 2006, two weeks following well development. The wells were purged using low-flow methods. Each well was checked for the presence of NAPL prior to purging and monitored for NAPL during the purging process.

Following purging, one groundwater sample was collected from each monitoring well using low-flow sampling methods. The samples were properly preserved in ice-filled coolers and transported to Severn Trent Laboratories-Buffalo (STL-Buffalo), a New York State

Department of Health (NYSDOH) accredited laboratory certified for the selected analyses, including: TCL VOCs by SW846 8260B, TCL SVOCs by SW846 8270C, TAL metals by SW846 6010B and 7470A, and cyanide by SW846 9012A. Groundwater quality was compared to the New York State Ambient Water Quality Standards for Class GA groundwater (AWQS). Analytical results are presented in Section 4.1.4.3.

The second round of groundwater sampling was conducted at the Site during 11 -12 October 2007. Static groundwater levels ranged from 0.2 feet to 2.11 feet lower during this event, when compared to the December 2006 sampling event. Each well was monitored for the presence of Non-Aqueous Phase Liquid (NAPL) prior to and during the purging process, as noted in the project Work Plan. NAPL was not observed in any of the monitoring wells.

In accordance with the Work Plan, low-flow purging and sampling was completed at MW-2 and MW-3. A low-flow purge was attempted at MW-1, MW-4, MW-5, MW-6, and MW-7 but could not be completed due to drawdown limitations and slow to immeasurable well recharge. Specifically, due to the low groundwater condition and slow recharge rates in these wells, low-flow sampling was discontinued where drawdown in the well could not be maintained at less than 0.3 feet at the lowest pump flow rate. Therefore, an alternative method was necessary to obtain the water samples. As an alternative to low flow sampling, these wells were purged to dryness using a peristaltic pump and allowed to recover for 24-hours prior to sampling. As MW-7 remained dry after the 24–hour recovery period, a groundwater sample was not collected. Samples from MW-1, MW-4, MW-5, and MW-6 were collected using one new disposable bailer per well. Monitoring well purge records are included in Appendix E.

Where it was necessary to use the alternative purging and sampling method describes above, suspended soil particles were entrained in the groundwater samples.

2.3.4 Hydrogeology Assessment

Water level readings were taken on 18 December 2006 and 11 October 2007 using a Heron Dipper-T water level meter, measuring from the top of the well casing. The water level measurements are reported in Section 4.2.

Slug tests were performed during 29 December 2006 and 2 January 2007 on the monitoring wells to calculate the hydraulic conductivity of site soils. To complete each slug test, a Solinst Levelogger LT water level data logger was calibrated to current barometric pressure and placed into the well. When the data logger read-out stabilized, a 1.5-inch diameter plastic slug was introduced into the well, initially raising the water level, which subsequently subsided to approximately the pre-test level. The slug was quickly removed, resulting in an initial drop in the water level, which subsequently returned to nearly the pre-test level. This was repeated three times for each well. There was insufficient water volume in MW-4 to conduct a slug test. The slug testing results are reported in Section 4.2.

3. WASTE MANAGEMENT

Investigation-derived waste (IDW) including soil cuttings from monitoring well installations, decontamination water, drilling water, and well development/purge water was containerized in 55-gallon drums. Drums were appropriately labeled with the contents, generator, location, and date. The drums were sampled in accordance with waste profiling requirements provided by the disposal facility and the drums were disposed of by Clean-Harbors Environmental Services, Inc. Personal protective equipment (PPE) was placed in plastic garbage bags and disposed of with municipal trash. Waste disposal documentation is included in Appendix D.

4. FINDINGS

The following sections present findings based on the information collected during subsurface explorations performed at the Site during November and December 2006.

4.1 Subsurface Characterization

The following sections provide a detailed description of the Site's subsurface components including soils, bedrock, and groundwater.

4.1.1 Regional Geology and Hydrogeology

The **Site** is located in the Ontario Lowlands, which is characterized by generally low relief and productive farmlands. **The** Soil Conservation Service **classifies** the soil at the **Site as** urban land**, consisting** of areas that have been altered or obscured by urban works and structures to the extent that identification of the soil is not feasible. The urban land designated areas are mainly in the closely built-up parts of the City of Rochester. The surficial geology is described as generally laminated clay and silt deposited in proglacial lakes, generally calcareous, with potential land instability. Overburden thickness is variable (up to 50 meters).

Glacial deposits overlie the bedrock in this area. Fluvial and lacustrine silts and sands overlie till of variable thickness over the bedrock. The bedrock beneath the Site is the Middle Silurian Lockport Group consisting of the Oak Orchard and Penfield Dolostones, both replaced eastwardly by the Sconondoa Formation limestone and dolostone. The Penfield Member is a sandy dolomite of medium gray to dusky yellowish brown, mottled, fine to medium grained, with a saccharoidal texture; minor quartz sand and coral fragments (calcareous); and numerous thin, tight fractures. The Oak Orchard Member Dolomite is medium dark gray to dusky yellowish brown, highly mottled, fine to medium grained, with a saccharoidal texture; scattered fossil detritus; and highly porous.

The average depth to groundwater in Monroe County, New York is 5.4 feet below ground surface (bgs). There are also local seasonal fluctuations in the water table depth. The water levels tend to be highest in the spring snowmelt period and lowest during midsummer.

Based on the topography, the shallow groundwater flow direction in the vicinity of the Site on a macro scale is expected to be generally north and east toward the Genesee River. The Genesee River, located east of the Site (Figure 1), has a watershed area which encompasses the drainage for much of the Rochester area and points south and west. In the upland areas, the water table slopes gently toward the northeast. Within the river valley, the groundwater gradient is nearly flat, with a northward, down-valley slope toward Lake Ontario.

Approximately 300 feet north/northeast of the Site, West Broad Street and the abandoned subway are present in the area of the former Erie Canal. Immediately east of the Site is the location of the former Genesee Canal. Dependent on the depth to water in the area and nature of the fill materials in the former canal beds, these **structures** may affect local groundwater flow patterns and potentially act as either a groundwater flow barrier or a preferential flow pathway. (Site Characterization Work Plan, Canal Street Former MGP Site, Rochester, NY, Blasland, Bouck & Lee, 2006).

4.1.2 Soil and Bedrock Conditions

Explorations at the Site revealed the following soil and rock strata, in order of occurrence from ground surface downward, although one or more strata may be absent at a specific boring location. Actual soil conditions may differ from these typical descriptions. Refer to the test boring logs (Appendix B) for specific descriptions of soil and rock samples obtained from the borings.

- **Fill**
- **Organic Deposit**
- **Lacustrine**
- **Glacial Till**
- **Dolostone (Weathered Bedrock and Bedrock)**

Figures 5A through 5G depict the subsurface profiles generated from the test borings. Note that the stratification lines designating the interface between soil and/or rock types represent approximate boundaries.

Descriptions of the soil conditions encountered during the subsurface exploration program conducted at the Site are provided below. These descriptions are based on the data obtained from the subsurface explorations. The nature and extent of variations between explorations is unknown, as indicated by the many cases where a soil stratum exists at one boring but does not exist at an adjacent boring.

Fill: Below approximately 0 to 0.5 ft of topsoil or pavement, the observed fill consisted of silty SAND (SM), poorly-graded SAND (SP), poorly-graded SAND with silt (SP-SM), clayey SAND (SC), poorly-graded GRAVEL (GP), and sandy SILT (ML) with varying amounts of coal, concrete, bricks, wood, ash, and ceramic particles.

The observed coloration includes brown, light brown, dark brown, gray, black, and yellow-brown. The apparent density of the fill, as indicated from the Standard Penetration Test (SPT) results (N values), ranged from very loose to dense for coarse-grained soils (sand) and medium stiff for fines (silt).

The fill was observed in all test borings. The top of fill was observed between approximately El. 515 to El. 511. The fill ranged in thickness from 3.9 to 14.8 ft. The fill was fully penetrated in all test borings.

Organic Deposit: Where encountered, the organic deposit consisted of ORGANIC SOIL (OL/OH) and SILT (ML) with varying amounts of sand, fibers and clam shells. The observed coloration was dark brown and black. The apparent density of the organic deposit, as indicated from the SPT results (N values), ranged from soft to medium stiff.

The organic deposit was observed and fully penetrated in 5 of the 25 test borings. The top of the organic deposit was observed between approximately El. 509 to El. 504 and the thickness ranged from 1.1 to 2.1 ft.

Lacustrine: Where encountered, the lacustrine consisted of silty SAND (SM), clayey SAND (SC), poorly-graded SAND with silt (SP-SM) and SILT (ML) with varying amounts of sand, gravel, wood, and clam shells. The observed coloration included gray-brown, light brown, brown, tan, and yellow-brown. The apparent density of the lacustrine, as indicated from the

SPT results (N values), ranged from very loose to very dense for coarse-grained soils (sand) and soft to very stiff for fines (silt).

The lacustrine was observed at 14 of the 25 test boring locations. The lacustrine was fully penetrated in most test boring locations, however at some locations the test borings were terminated upon split spoon or auger refusal (anticipated top of rock) and is the presumed extent of the lacustrine layer. The top of the lacustrine was observed between approximately El. 508 and El. 501. The thickness of the lacustrine ranged from 1.5 to 4.7 ft.

Glacial Till: Where encountered, the observed glacial till consisted of silty SAND (SM) with varying amounts of gravel, silty GRAVEL (GM) and poorly-graded GRAVEL (GP) with varying amounts of sand, cobbles, and boulders. The observed coloration included brown, light brown, gray-brown, and yellow-brown. The apparent density of the glacial till, as indicated from the SPT results (N values), ranged from loose to very dense.

The glacial till was observed in 5 of the 25 test borings. At the test boring locations where the glacial till was not fully penetrated, the borings were terminated upon split spoon or auger refusal (anticipated top of bedrock) and is the presumed extent of the till layer. The top of glacial till was observed between approximately El. 506 and El. 502; the thickness of the glacial till ranged from 1.3 to 4.6 ft.

Weathered Bedrock/Bedrock: The observed weathered bedrock and bedrock consists of varying amounts of rock fragments (weathered bedrock) and hard, highly to slightly weathered gray fine-grained DOLOSTONE. The bedrock was noted to have horizontal to low angle bedding.

Bedrock cores (two feet deep) were completed in 8 of the 25 soil borings including MW-1 through MW-7 and SB-15. In the remainder of the borings the top of bedrock was assumed based on split spoon and/or auger refusal. The top of weathered bedrock/bedrock was observed between approximately 7.5 and 16.6 ft below ground surface (bgs). Figure 8 shows the estimated top of bedrock elevations for each boring location and generalized top of bedrock contours. The top of bedrock generally slopes from southeast to northwest across the Site. The bedrock elevation at SB-2 is 4.2 feet higher than at MW-4 which is about 315 ft northwest from SB-2. As can be seen on Figure 8, the bedrock elevations at borings SB-1 and MW-1 do not fit this general pattern, as the elevations there are 3.7 to 4.8 ft higher than the bedrock elevation at SB-2 which is approximately 50 ft to the east.

Based on historical maps identifying the location of the former gas holder, SB-3, SB-4 and SB-15 were presumed to have been installed inside of the gas holder. Equipment refusal was encountered at SB-3 and SB-4. Subsequent to refusal at SB-15, a bedrock core was completed at boring to confirm the hypothesis that the gas holder concrete floor was constructed directly on the bedrock. The core boring report indicates that approximately 0.7 ft of concrete was placed directly on the bedrock at this location. There is evidence that bedrock was excavated to construct the foundation and floor of the gas holder. As can be seen on Figure 5F, a line of relatively uniform slope representing the "inferred" top of bedrock can be drawn from MW-1 to MW-4, through SB-1, SB-5, and MW-7. The bedrock found in SB-15, which is believed to be within the gas holder perimeter, is about 2 ft lower than the line. The approximate location of the perimeter and floor of the gas holder is shown on Figure 5F. The floor elevation shown for the gas holder was based on borings SB-3, SB-4 and SB-15, and assumes that the floor was flat and horizontal.

The bedrock is hypothesized to have been excavated at MW-2 to a depth approximately 7 ft lower than the pre-existing top of bedrock, based on evidence from the soil boring. MW-2 is outside the limits of what is believed to be the perimeter of the gas holder. The boring log for MW-2 shows fill materials (no native soils) from the ground surface to approximately 15.0 ft below ground surface and concrete from 15.0 to 16.6 ft below ground surface, where weathered bedrock was encountered.

4.1.3 Field Observations

Fill was observed throughout the Site ranging from 3.9 to 14.8 ft and contains varying amounts of coal, concrete, bricks, wood (including probable railroad ties), ash, clinker, and ceramic materials.

NAPL was not encountered in any of the soil borings or monitoring wells. There were also no visual observations of coal tar or oil in the soil samples collected from the borings. Staining, possibly indicative of petroleum or coal tar constituents, was noted in only three split spoon samples (from borings MW-2, MW-3, and SB-14). Petroleum-like odors were reported at 10 of the 25 boring locations, and possible naphthalene odors were reported at three (3) locations. In most cases, elevated PID readings were recorded corresponding with the observations of these odors.

Locations of Noted Petroleum Odors			Locations of Noted Naphthalene-like Odors
¾ SB-2	¾ SB-13	¾ SB-17	¾ MW-2
¾ SB-9	¾ SB-14	¾ SB-19	¾ MW-3
¾ SB-10	¾ SB-16	¾ MW-5	¾ SB-8
¾ SB-12			

Boring SB-15 was completed between borings SB-3 and SB-4 at a location believed to be within the former gas holder. Rock coring was performed through approximately 0.7 ft of concrete at the bottom of the boring and was extended two additional feet directly into bedrock. It appears that the concrete had been placed directly on the bedrock. No staining was observed at the concrete to bedrock interface.

A "lime-like" material, possibly associated with former MGP purifier operations, was observed intermittently within the fill at two soil boring locations. At boring SB-16 in the northern portion of the Site, a light blue tint was observed in the "lime-like" material found in the soil collected from the first five feet bgs. At boring MW-6 in the southern portion of the Site, similar blue-tinted "lime-like" material was found in the soil collected from the first four feet bgs. A sample of the material from SB-16 was submitted for chemical analysis.

In general, soil samples were selected for chemical analyses based on consideration of visual, odor, and PID field observations in order to represent expected worst-case conditions. The results of chemical analyses for the soil samples are presented in Section 4.1.4.1.

4.1.4 Laboratory Analytical Results

Soil and groundwater samples were analyzed by Severn Trent Laboratories-Buffalo (STL-Buffalo), a New York State Department of Health (NYSDOH) accredited laboratory certified for the selected analyses. Analytical methods, sample handling, and laboratory protocols are outlined in the QAPP (see Work Plan, Appendix B).

4.1.4.1 Data Usability

Sample analyses followed the NYSDEC Analytical Services Protocol (ASP), and included quality assurance/quality control (QC/QC) samples at a frequency indicated in the QAPP. Analytical results for analysis of soil and groundwater samples were reported using NYSDEC ASP Category B data deliverables and are provided in Appendix E, along with the data usability summary reports (DUSRs). The analytical data were validated and determined to be usable for the purposes of this report, with the exception of some of the groundwater results from the October 2007 sampling event.

The October 2007 field sampling logs noted high turbidity in the samples for MW-1, MW-4, MW-5, and MW-6. The analytical laboratory indicated that the extraction procedure used in the analysis of SVOCs and metals would capture constituents from any suspended soil particles as well as from the groundwater. As a result, results for SVOCs and metals results from those wells are most likely overstated and are not likely representative of true groundwater quality at the four sampling locations and the October 2007 results should be viewed in light of the sampling conditions. As the extraction procedure is not used in the analysis for VOCs, suspended soil particles in the sample did not affect the results or detection limits of the VOCs.

However, inspection of the analytical results for SVOCs shows that for the most part, only a few individual SVOCs were detected in both the October 2007 and December 2006 monitoring rounds, and the sample detection limits were approximately the same for both rounds (except for MW-1), even with the suspended soil particles in the October 2007 samples. Therefore it was concluded that the SVOC results for October 2007 could be used for comparison to the December 2006 SVOC results for MW-2, MW-3, MW-4, MW-5, and MW-6.

The following sections summarize the laboratory analytical results. Site specific soil cleanup objectives are not identified in the MSVCA; therefore, for comparison purposes, soil analytical results were compared to the NYCRR Part 375 Soil Cleanup Objectives (SCOs) for Restricted Residential Use and Restricted Commercial Use, as well as to the TAGM 4046 SCOs. Groundwater analytical results were compared to the NYS Ambient Water Quality Standards for Class GA Groundwater (AWQS).

4.1.4.2 Soil Analytical Results

A description of the soil analytical results is presented below and the results are summarized in Tables 1 through 4. Figure 6 depicts the soil analytical results in excess of the Part 375 Restricted Residential and Restricted Commercial Use SCOs.

<u>Volatile Organic Compounds (VOCs)</u>

VOCs were not detected in any of the soil samples at concentrations exceeding the Part 375 Restricted Residential SCOs (see Table 1). Only three VOCs exceeded the TAGM 4046 SCOs – acetone, methylene chloride, and total xylenes. Neither acetone nor methylene chloride are compounds associated with MGP wastes. As shown on Table A, those exceedances occurred at only five locations.

Table A.
Locations of VOC Exceedances of Soil Cleanup Objectives and Water Quality Standards

Constituent	Location of Exceedance		
	Part 375 Residential or Commercial Soil Cleanup Objectives	TAGM 4046 Soil Cleanup Objectives or Eastern U.S. Background for Metals)	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (1)
Acetone		MW-5	
Benzene			MW-2, MW-3
Cis-1,2-Dichloroethene			MW-3
Ethylbenzene			MW-2, MW-3
Isopropylbenzene			MW-3
Methylene Chloride		SB-9, SB-11, SB-14	
Toluene			MW-2
Total Xylenes		SB-13, SB-14	MW-2, MW-3
Trans-1,2-Dichloroethene			MW-3
Trichloroethene			MW-3
Vinyl chloride			MW-3

(1) Listed wells had detected analytes in excess of AWQS.

Semi-Volatile Organic Compounds (SVOCs)

Samples from only seven (7) of the 25 boring locations had SVOCs in excess of the Part 375 SCOs for Restricted Residential Use. The SVOCs detected above the Part 375 SCO for Restricted Residential Use were the following five higher-molecular weight PAHs that were detected at relatively low concentrations: benzo(a)anthracene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, benzo(a)pyrene, and dibenzo(a,h)anthracene (see Table 2). According to Table 2, the same compounds were found to exceed the TAGM 4046 SCOs, with the addition of benzo(k) fluoranthene and chrysene. Table B shows the locations where SVOCs were found at concentrations in excess of the referenced SCOs.

Table B.
Locations of Exceedances of SVOC Soil Cleanup Objectives and Water Quality Standards

Constituent	Location of Exceedance			
	Part 375 Residential Soil Cleanup Objectives	Part 375 Commercial Soil Cleanup Objectives	TAGM 4046 Soil Cleanup Objectives (and/or Eastern U.S. Background for Metals)	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (1)
Benzo(a)anthracene	SB-10, SB-12, SB-16, SB-17, SB-19, MW-2		Same locations as Part 375 Residential, plus SB-2, SB-4, SB-5, SB-9, ,SB-13, MW-6	
Benzo(a)pyrene	SB-10, SB-12, SB-16, SB-17, SB-19, MW-2	SB-10, SB-12, SB-16, SB-17, SB-19, MW-2	Same locations at Part 375 Residential, plus SB-1, SB-2, SB-3, SB-4, SB-5, SB-7, SB-8, SB-9, SB-13, MW-1, MW-6	
Benzo(b)fluoranthene	SB-10, SB-12, SB-16, SB-17, SB-19, MW-2, MW-6		Same locations as Part 375 Residential	
Benzo(k)fluoranthene			SB-17	
Chrysene			SB-2, SB-10, SB-12, SB-16, SB-17, SB-19, MW-2, MW-6	
Dibenzo(a,h)anthracene	SB-10, SB-12, SB-17, MW-2, MW-6	SB-12, SB-17, MW-6	Same locations as Part 375 Residential, plus SB-1, SB-2, SB-3, SB-4, SB-5, SB-7, SB-8, SB-9, SB-16, SB-19, MW-1	
Indeno(1,2,3-cd)pyrene	SB-10, SB-12, SB-16, SB-17, SB-19, MW-2, MW-6		SB-17	
Naphthalene				MW-2, MW-3
Pentachlorophenol				MW-5

(1) Listed wells had detected analytes in excess of AWQS.

Concentrations of only two SVOCs in soil (benzo(a)pyrene and dibenzo(a,h)anthracene) exceeded the Part 375 SCOs for Restricted Commercial Use at the previously listed seven locations. Naphthalene, a commonly observed contaminant found at MGP sites, was not detected in soil samples at concentrations above any of the referenced SCOs.

SVOCs detected at concentrations exceeding referenced SCOs appear randomly distributed throughout the Site and study area and do not appear to correlate to any specific source. According to the information given in Table A and presented in Figure 6, no areas of the Site had observed concentrations of SVOCs significantly higher than another. Comparison of the observed SVOC concentrations to published data indicates that they are typical of urban fill.

<u>Metals</u>

Table C shows the locations where metals were found at concentrations in excess of the referenced SCOs. Arsenic, barium, and lead were detected above the referenced SCOs at a limited number of locations. As presented in Table A and Table 3, samples from only six (6) of the 25 boring locations had metals detected at concentrations in excess of the Part 375 SCOs for Restricted Residential Use. The metals were arsenic (four locations), barium (one

location), cadmium (one location), and, at two locations each, lead, manganese, and mercury. The same metals were found to exceed the TAGM 4046 SCOs, with the addition of calcium, copper, iron, magnesium, nickel, selenium, and zinc.

Table C.
Locations of Metal Exceedances of Soil Cleanup Objectives and Water Quality Standards

Constituent	Location of Exceedance			
	Part 375 Residential Soil Cleanup Objectives	Part 375 Commercial Soil Cleanup Objectives	TAGM 4046 Soil Cleanup Objectives (and/or Eastern U.S. Background for Metals	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (1)(2)
Metals				
Arsenic	SB-9, SB-10, SB-17, MW-2	SB-9, SB-10, SB-17, MW-2	Same locations at Part 375 Residential, plus MW-5	
Barium	SB-9	SB-9	SB-9	
Cadmium	SB-9		SB-9	
Calcium			SB-2, SB-6, SB-8, SB-12, SB-13, SB-16, SB-17, MW-2, MW-5, MW-6,	
Copper			SB-1, SB-2, SB-12, SB-17, MW-1,	
Iron			All locations	MW-1, MW-2, MW-3, MW-4, MW-5, MW-7
Lead	SB-12	SB-12	SB-2, SB-12	MW-5
Magnesium			SB-2, SB-4, SB-6, SB-7, SB-8, SB-10, SB-12, SB-13, SB-16, SB-16, SB-17, SB-19, MW-1, MW-2, MW-3, MW-5, MW-6, MW-7	MW-2, MW-4, MW-5, MW-6
Manganese	SB-9, SB-17	SB-9	SB-9	MW-1, MW-2, MW-3, MW-4, MW-5, MW-7
Mercury	SB-12, SB-17		Same locations at Part 375 Residential, plus SB-1, SB-2, SB-3, SB-4, SB-7, SB-10, SB-16, SB-19, MW-1, MW-5, MW-6	
Nickel			SB-9	
Selenium			SB-9	
Sodium				MW-1, MW-2, MW-6
Zinc			SB-1, SB-2, SB-3, SB-4, SB-7, SB-9, SB-10, SB-12, SB-16, SB-17, SB-19, MW-1, MW-2, MW-3, MW-5, MW-6	

(1) Listed wells had detected analytes in excess of AWQS.
(2) Analytical results from October 2007 were excluded. See Section 4.1.4.1.

The soil sample SB-9 did not exceed the Part 375 SCO for Restricted Commercial Use for cadmium. The soil sample for SB-2 did not exceed the Part 375 SCO for Restricted Commercial Use for lead. All other soil samples that exceeded the Part 375 SCOs for Restricted Residential Use also exceeded the Part 375 SCOs for Restricted Commercial Use.

Metals were detected above the TAGM 4046 SCOs at most locations. Barium, cadmium, and manganese concentrations exceeded the TAGM 4046 SCOs at only one location each. Arsenic, copper, lead, manganese, nickel, and selenium concentrations exceeded the TAGM 4046 SCOs at five (5) or fewer locations. Calcium, iron, zinc, magnesium, and mercury concentrations exceeded the TAGM 4046 SCOs at eleven (11) or more locations.

The samples where metals were detected above the referenced SCOs were generally collected from the fill. As shown on Table C and in Figure 6, they appear randomly distributed across the Site and study area and do not appear to correlate to any specific source. With the exception of one isolated sample at SB-12 (8-10 feet bgs), no areas of the Site had concentrations of metals significantly higher than another. The origins of the impacts are not known, however the nature and distribution of constituents in the Site soils are similar to typical urban background conditions.

Cyanide

As noted in Section 4.1.3, a "lime-like" material (lime), possibly associated with former MGP purifier operations, was observed intermittently within the fill at two soil borings at disparate locations. The lime was most notable in SB-16, located in the northern portion of the Site, where a light blue tint was observed in the "lime-like" material found in the soil collected from the first five feet bgs. This sample was submitted for analysis that confirmed the presence of lime. This sample was also analyzed for cyanide which was detected at a concentration of 11.5 mg/kg which is below the Part 375 SCO for Restricted Residential (and Restricted Commercial) Use (27 mg/kg). There is no SCO for total cyanide given in TAGM 4046, which notes that the SCO for cyanide, if needed, should be established as appropriate for the site being investigated.

All the other soil samples collected during this investigation were also analyzed for cyanide. None of the samples were above the Part 375 SCO for Restricted Residential or Restricted Commercial Use.

Petroleum Hydrocarbon Analysis Results (TPH & DRO/GRO)

Total petroleum hydrocarbon analysis by EPA 310.1 and diesel range organics (DRO) and gasoline range organics (GRO) by SW846 8015B was performed based on field observations of petroleum-type odors and corresponding PID readings in borings SB-10, SB-13, and SB-14. These locations were in the area of the Site historically and currently used for railroad operations (refer to Section 1.3). Analytical results confirmed the presence of petroleum-type constituents in each sample (see Table 4). The concentrations of petroleum constituents detected were not indicative of an on-site source or area of the Site with particularly high concentrations of petroleum-related compounds and were also not suggestive of a particular petroleum product.

4.1.4.3 Groundwater Analytical Results

A description of the groundwater analytical results is presented below and the results are summarized in Tables 5 through 7. Figure 6 provides a summary of groundwater analytical results that exceed the Ambient Water Quality Standards (AWQS). For each analyte that exceeded the AWQS, the concentration of the analyte in the soil at the same location is listed. Tables A, B, and C present the locations where exceedances of the AWQS were observed.

VOCs

Only MW-2 and MW-3 exhibited groundwater quality having VOCs in excess of AWQS (see Table 5). In December 2006, VOCs were not detected above laboratory detection limits in MW-1 (upgradient), MW-4, MW-6, and MW-7 (with the exception of a detection of trichloroethene below the AWQS in upgradient monitoring well MW-6). This remained true

in October 2007, with the exceptions of methyl cyclohexane and toluene in MW-4, carbon disulfide and methyl acetate in MW-5 and trans-1,2-dichloroethene and trichloroethene in MW-6, were all below the AWQS.

MW-2 is located immediately downgradient of the former gas holder. Groundwater analyses of December 2006 samples collected from MW-2 detected benzene (52 ug/l), toluene (18 ug/l), ethylbenzene (6.6 ug/l) and total xylenes (13 ug/l) at concentrations above their respective AWQS. MW-3 is also located proximate to the former gas holder. The December 2006 groundwater sample from MW-3 exhibited concentrations of benzene (1.6 ug/l), ethylbenzene (38 ug/l), and total xylenes (25 ug/l) above the AWQS.

In October 2007, benzene was the only VOC detected in MW-2 in exceedance of the AWQS, and cis-1,2-dichloroethene and trichloroethene (TCE) were the only VOCs detected in MW-3 in exceedance of their respective AWQSs. The October 2007 data set indicated a slight reduction in VOC concentrations and frequency of VOCs detected above laboratory detection limits as compared to the results of the December 2006 sampling event. VOCs were not detected in exceedance of the AWQS in downgradient well MW-4. A comparison of the VOCs that exceeded the AWQS at MW-2 and MW-3 during the two sampling rounds is presented in Table D. A summary of all groundwater analytical results for VOCs is shown in Table 5.

Table D. Comparison of VOC Exceedances

Sample ID Lab Sample ID Date Sampled	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (ug/L)	MW-2 A6F46702 12/26/2006	MW-2 A7B81401 10/12/2007	MW-2-FD A7B81402 10/12/2007	MW-3 A6F49503 12/27/2006	MW-3 A7B81407 10/11/2007
Benzene	1	52	24	23	1.6 J	5 U
cis-1,2-Dichloroethene	5	1.1	5 U	5 U	96	22
Ethylbenzene	5	6.6	1.8 J	1.6 J	38	5 U
Isopropylbenzene	5	0.5 J	5 U	5 U	12	5 U
Total Xylenes	5(1)	13 J	2.4 J	1.3 J	25	15 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5.1	0.82 J
Trichloroethene	5	5 U	5 U	5 U	57	38
Vinyl chloride	2	5 U	5 U	5 U	5.9	5 U

(1) Applies to o-, m-, and p-xylene separately.

The relatively low concentrations of the VOCs detected in the groundwater at MW-2 and MW-3 are not indicative of a nearby significant contaminant source. That is, typically when NAPL is present in the subsurface, aromatic VOCs in the groundwater proximate to such a source exceed 1,000 ug/L. This is consistent with the lack of visual and soil analytical findings and suggests a significant source of contamination to groundwater is not present at the Site. Further, BTEX concentrations did not exceed the referenced SCOs in soil samples taken from MW-2 and MW-3. The BTEX compounds detected in MW-2 and MW-3 may be related to other historic petroleum-related activities conducted at or near the Site.

Chlorinated VOCs, including the common industrial solvent trichloroethene (TCE) and its related breakdown products, including cis-1,2- dichloroethene and trans-1,2-dichloroethene,

and vinyl chloride, were detected at concentrations exceeding AWQS in MW-3. TCE may also be associated with the common dry cleaning solvent tetrachloroethene (PCE), as PCE naturally breaks down into TCE. However, chlorinated compounds (other than methylene chloride) were not detected in soil samples above the referenced SCOs. Chlorinated VOCs were not detected in soil samples from MW-3 except for cis-1,2- dichloroethene at 9.0 ug/kg, which is below the Part 375 Restricted Residential SCO. Chlorinated solvents are not associated with former MGP operations.

Monitoring wells MW-4 and MW-7 are located hydraulically downgradient of MW-2 and MW-3. Groundwater samples detected from MW-4 and MW-7 did not detect VOCs above the AWQS. This indicates that the BTEX and chlorinated VOCs detected in MW-2 and MW-3 are localized and/or not migrating or they are attenuating rapidly.

SVOCs

In December 2006, three monitoring wells (MW-2, MW-3, and MW-5) exhibited groundwater quality having SVOCs in excess of AWQS. SVOCs were not detected above laboratory detection limits in samples collected from upgradient monitoring wells MW-1 and MW-6, or in samples collected from monitoring wells MW-4 and MW-7 (see Table 6).

The only SVOCs detected in groundwater samples collected in October 2007 at concentrations exceeding the AWQS were from MW-2 and MW-6 (see Table 6). All of these concentrations were qualified by the laboratory as estimated values. Benzo(a)anthracene was the only SVOC detected in MW-2 in exceedance of the AWQS. Benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene were the only SVOCs detected in MW-6 in exceedance of their respective AWQS. As noted, the groundwater from upgradient monitoring well MW-6 contained soil particles suspended in the sample, which may account for the estimated concentrations of these heavy molecular weight PAHs. These PAHs are indicative of the surrounding soil conditions and the overall urban nature of the fill.

The October 2007 data set shows a notable reduction in the naphthalene concentrations in MW-2 and MW-3, as compared with the December 2006 sampling event. SVOCs were not detected in exceedance of the AWQS in downgradient well MW-4. A comparison of the SVOCs that exceeded the AWQS during the two sampling rounds is presented in Table E. A summary of all groundwater analytical results is shown in Table 6. Based on the data usability evaluation, the October 2007 SVOC results for MW-1, MW-4, MW-5, and MW-6 may not be representative of the groundwater quality at those locations at the time of sampling.

Table E. Comparison of SVOC Exceedances

Sample ID Lab Sample ID Date Sampled	Class GA Water Quality Standards (ug/L)	MW-1 A6F46701 12/26/2006	MW-1 A7B81404 10/12/2007[3]	MW-2 A6F46702 12/26/2006	MW-2 A7B81401 10/12/2007	MW-2-FD A7B81402 10/12/2007
Benzo(a)anthracene	0.002[1]	9 U	10 J	9 U	0.2 J	0.2 J
Benzo(b)fluoranthene	0.002[1]	9 U	17 J	9 U	10 U	9 U
Chrysene	0.002[1]	9 U	8 J	9 U	10 U	9 U
Indeno(1,2,3-cd)pyrene	0.002[1]	9 U	7 J	9 U	10 U	9 U
Naphthalene	10[1]	9 U	200 U	68	4 J	2 J
Pentachlorophenol	1[2]	47 U	980 U	47 U	49 U	47 U

(1) Guidance per AWQS.
(2) Standard per AWQS.
(3) SVOC laboratory results for MW-1, MW-4, MW-5, and MW-6 may not be representative of the groundwater condition at that location due to suspended soil particles in the samples.

Table E. Comparison of SVOC Exceedances, continued

Sample ID Lab Sample ID Date Sampled	Class GA Water Quality Standards (ug/L)	MW-3 A6F49503 12/27/2006	MW-3 A7B81407 10/11/2007	MW-5 A6F49502 12/27/2006	MW-5 A7B81406 10/12/2007
Benzo(a)anthracene	0.002[1]	10 U	10 UJ	9 U	10 U
Benzo(b)fluoranthene	0.002[1]	10 U	10 UJ	9 U	10 U
Chrysene	0.002[1]	10 U	10 UJ	9 U	10 U
Indeno(1,2,3-cd)pyrene	0.002[1]	10 U	10 UJ	9 U	10 U
Naphthalene	10[1]	33	10 UJ	1 J	10 U
Pentachlorophenol	1[2]	50 U	50 UJ	7 J	48 U

(1) Guidance per AWQS.
(2) Standard per AWQS.
(3) SVOC laboratory results for MW-1, MW-4, MW-5, and MW-6 may not be representative of the groundwater condition at that location due to suspended soil particles in the samples.

Table E. Comparison of SVOC Exceedances, continued

Sample ID Lab Sample ID Date Sampled	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (ug/L)[1]	MW-6 A6F53001 12/28/2006	MW-6-FD A6F53004 12/28/2006	MW-6 A7B81405 10/12/2007
Benzo(a)anthracene	0.002[1]	10 U	10 U	0.3 J
Benzo(b)fluoranthene	0.002[1]	10 U	10 U	0.2 J
Chrysene	0.002[1]	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002[1]	10 U	10 U	0.2 J
Naphthalene	10[1]	10 U	10 U	10 U
Pentachlorophenol	1[2]	48 U	48 U	49 U

(1) Guidance per AWQS.
(2) Standard per AWQS.
(3) SVOC laboratory results for MW-1, MW-4, MW-5, and MW-6 may not be representative of the groundwater condition at that location due to suspended soil particles in the samples.

Pentachlorophenol (a common wood preservative) was detected in the groundwater above the AWQS in the December 2006 groundwater sample collected from MW-5 at a trace concentration (7 ug/L). The AWQS for pentachlorophenol is 1.0 ug/L. Pentachlorophenol is not an MGP-related constituent, was not detected in soils from any location above laboratory detection limits, and was not detected in any other groundwater samples.

Naphthalene was detected in MW-2 at 68 ug/L and in MW-3 at 33 ug/L in December 2006. In October 2007, naphthalene was detected in MW-2 at an estimated concentration of 4 ug/L and was not detected in MW-3. The AWQS for naphthalene is 10 ug/L. Naphthalene is common to both coal tar and most petroleum-related products. Consistent with the VOC findings, the relatively low concentrations of these compounds detected in the groundwater at MW-2 and MW-3 are not indicative of a significant nearby contaminant source. Naphthalene was not detected in any soil samples at concentrations above the Part 375 SCO for Restricted Use or the TAGM 4046 SCO for Protection of Groundwater, including the soil samples collected from the depths consistent with the screened intervals associated with MW-2 and MW-3. This is consistent with the VOC findings and suggests that a significant source of SVOC constituents to groundwater is not present at the Site.

Moreover, monitoring wells MW-4 and MW-7 are located hydraulically downgradient of MW-2 and MW-3. VOCs and SVOCs (including naphthalene) that were greater than the AWQS in MW-2 and MW-3 were not detected in MW-4 and MW-7, indicating that organic constituents are localized and/or not migrating or they are attenuating rapidly.

Metals

Metals were consistently detected at concentrations exceeding AWQS in both upgradient and downgradient wells, including magnesium, manganese, iron, and sodium (see Table 7). Considering all seven wells, iron and magnesium were the only analytes that exceeded TAGM 4046 SCOs for soil and the AWQS for groundwater in the same well. These metals are consistent with natural groundwater conditions related to the dolostone bedrock and indigenous soils in the area. To a lesser extent, these metals may also be attributable to the lime observed in the soils at the Site.

Lead was also detected in one of the seven monitoring wells (MW-5) at concentrations exceeding the AWQS. Additionally, in MW-5 only, arsenic exceeded the AWQS for groundwater and the TAGM 4046 SCO for soil (at 13 mg/L vs. the SCO of 12 mg/L). It is interesting to note that none of the soil samples collected from the depths consistent with the screened intervals of the seven monitoring wells exceeded Part 375 SCOs for the same analytes detected above the applicable AWQS. This is further evidence of the lack of a significant source to groundwater contamination.

Based on the data usability evaluation, the October 2007 metals results for MW-1, MW-4, MW-5, and MW-6 may not be representative of the groundwater condition at that location due to suspended soil particles in the samples (see Section 4.1.4.1). In MW-2 and MW-3, only four metals were detected in groundwater samples collected in October 2007 at concentrations exceeding the AWQS (see Table 7). Iron, magnesium, manganese, and sodium were the only metals detected in MW-2 in exceedance of the AWQS. Iron was the only metal detected in MW-3 in exceedance of its AWQS.

The October 2007 data set shows lower concentrations of metals in MW-2 and MW-3, as compared with the December 2006 sampling event, with the exception of sodium in MW-2, which was higher in October 2007 compared to December 2006. A comparison of the metals that exceeded the AWQS during the two sampling rounds is presented in Table F. A summary of all groundwater analytical results is shown in Table 7.

Table F. Comparison of Metals Exceedances

Sample ID Lab Sample ID Date Sampled	Class GA Water Quality Standards (ug/L)	MW-1 A6F46701 12/26/2006	MW-1 A7B81404 10/12/2007(1)	MW-2 A6F46702 12/26/2006	MW-2 A7B81401 10/12/2007(1)	MW-2-FD A7B81402 10/12/2007(1)
Arsenic - Total	25	10 U	120	10 U	10 U	10 U
Iron - Total	300	11800	246000	8850	7830	7770
Lead - Total	25	12.2	3940	16.2	11.8	12.1
Magnesium - Total	35000	24100	165000	38200	35800	37500
Manganese - Total	300	382	4080	740	604	604
Sodium - Total	20000	58900	44700	49700	65600	70100

(1) Laboratory results for metals in MW-1, MW-4, MW-5, and MW-6 are may not be representative of the groundwater condition at that location due to suspended soil particles in the samples.

Table F. Comparison of Metals Exceedances, continued

Sample ID Lab Sample ID Date Sampled	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (ug/L)	MW-3 A6F49503 12/27/2006	MW-3 A7B81407 10/11/2007	MW-4 A6F53003 12/28/2006	MW-4 A7B81403 10/12/2007[1]
Arsenic - Total	25	10 U	10 U	10 U	14.5
Iron - Total	300	547	433	1960	45100
Lead - Total	25	3 U	3 U	6.6	89.8
Magnesium - Total	35000	33300	24400	184000	82800
Manganese - Total	300	667	15 U	490	2590
Sodium - Total	20000	11700	9840	7110	9570

(1) Laboratory results for metals in MW-1, MW-4, MW-5, and MW-6 are may not be representative of the groundwater condition at that location due to suspended soil particles in the samples.

Table F. Comparison of Metals Exceedances, continued

Sample ID Lab Sample ID Date Sampled	Class GA Water Quality Standards (ug/L)	MW-5 A6F49502 12/27/2006	MW-5 A7B81406 10/12/2007[1]	MW-6 A6F53001 12/28/2006	MW-6-FD A6F53004 12/28/2006	MW-6 A7B81405 10/12/2007[1]
Arsenic - Total	25	23.3	44.5	10 U	10 U	10 U
Iron - Total	300	39500	47700	100 U	100 U	9920
Lead - Total	25	44.8	112	3 U	3 U	23.7
Magnesium - Total	35000	103000	124000	221000	219000	218000
Manganese - Total	300	1400	1540	22.1	22.5	172
Sodium - Total	20000	17500	22100	61800	61800	75500

(1) Laboratory results for metals in MW-1, MW-4, MW-5, and MW-6 may not be representative of the groundwater condition at that location due to suspended soil particles in the samples.

As shown in Table F, metals were consistently detected at concentrations exceeding AWQS in both upgradient and downgradient wells for magnesium, manganese, iron, and sodium. These metals are consistent with natural groundwater conditions related to the dolostone bedrock and indigenous soils in the area.

Cyanide

Cyanide was not detected above laboratory detection limits in any wells except MW-6, where it was detected at a concentration 25.5 ug/L in December 2006, well below the AWQS of 200 ug/L. In October 2007, cyanide was not detected in the groundwater sample from MW-6. As noted in Section 4.1.3.1, none of the soil samples detected cyanide at concentrations above the Part 375 SCO for Restricted Residential Use.

4.2 Site Hydrogeology

The following sections describe groundwater depth and direction of flow and information regarding the hydraulic conductivity of site soils.

4.2.1 Groundwater Depth and Direction of Flow

Table 8 presents the groundwater level measurements in terms of depth below ground surface (bgs) and elevation for December 2006 and October 2007. Figures 7A and 7B show groundwater elevations and generalized groundwater contours for December 2006 and October 2007, respectively. In December 2006, groundwater was found between 5.5 and 13.3 feet bgs at the Site, generally shallower at the southern end and deeper at the northern end of the Site. The saturated thickness of overburden soils ranged from zero to 6.4 feet above bedrock, with the downgradient (northwestern) wells MW-7 and MW-4 exhibiting the least thick saturated zones. The direction of groundwater flow is generally to the northwest; however, there is a groundwater high in the vicinity of MW-1, which results in local deviation from this general pattern. The groundwater high is apparently associated with high bedrock at the same location.

The direction of groundwater flow and the groundwater high in the vicinity of MW-1 for October 2007 were similar to those for December 2006. However, the depth to groundwater was found to be between 6.9 and 15.8 feet bgs, generally deeper (e.g., at a lower elevation) than December 2006. This drop in groundwater elevation was consistent with the relatively dry preceding summer months.

4.2.2 Hydraulic Conductivity of Site Soils

The site fill, lacustrine deposits, and glacial deposits are all generally sandy in character, which suggests that the soils have a relatively high hydraulic conductivity. This was confirmed by the analysis of the rising head slug test data using the Bouwer Rice method. The calculated hydraulic conductivities ranged from 1.5×10^{-3} to 3.1×10^{-2} cm/sec, which is consistent with those commonly reported for sand. Results of the analysis are presented in Table 9.

5. SUMMARY AND CONCLUSIONS

Based on the results of the site characterization investigation, we conclude the following:

- **The Site is located in an urban area with a long history of commercial and industrial use, including former railroad and petroleum operations unrelated to the former MGP. The MGP operations were conducted over a relatively brief period of approximately 10 years. The Site and surrounding area has had more than 115 years of commercial and industrial use since MGP operations ceased.**

- **The geology consists of dolostone bedrock overlain by unconsolidated materials ranging in depth from approximately 7.5 to 15 feet bgs. The unconsolidated soils include urban fill and discontinuous layers of lacustrine soils, organic soils, and glacial till. In many places, the fill extends to the top of bedrock. Generally, the bedrock surface slopes to the northeast. The static groundwater level was approximately 5.5 to 13.3 feet below ground surface. Groundwater in the unconsolidated materials flows to the northwest.**

- **Organic MGP-related products or by-products were not observed. NAPL, such as coal tar and petroleum, was not encountered. In fact, only three soil samples had apparent staining possibly indicative of petroleum or coal tar constituents.**

- **The nature and extent of soil contamination is limited.**

    - **Samples from only nine (9) of the 25 boring locations had soil analytes in excess of the Part 375 SCOs. Only eleven (11) of the more than 135 soil constituents analyzed were found to exceed the Part 375 SCOs. VOCs were not detected at concentrations above the Part 375 SCOs for Restricted Residential Use. Only seven (7) of the 25 soil boring locations have SVOCs in excess of the Part 375 SCOs for Restricted Residential Use at relatively low concentrations. Naphthalene was not detected in any soil samples at concentrations above Part 375 SCOs.**

    - **Only six (6) of the 25 boring locations had metals detected at concentrations in excess of the Part 375 SCOs for Restricted Residential Use, including at locations upgradient to the former MGP operational area.**

    - **Lime was observed at two locations within the fill and may have been associated with former MGP purifier operations. Cyanide was not detected above the Part 375 SCOs for Restricted Residential Use in the lime or any soil samples.**

    - **Soil analytes detected at concentrations exceeding SCOs appear randomly distributed throughout the Site and do not indicate the presence of a specific source on the Site. The nature and distribution of constituents in the Site soils are similar to typical urban background conditions.**

- **The nature and extent of groundwater contamination is limited.**

    - **Only three (3) of the seven (7) monitoring wells exhibited groundwater having VOCs or SVOCs in excess of AWQS. Only 16 of more than 135 groundwater constituents analyzed were found to exceed the AWQS.**

    - **Two (2) of these wells contained BTEX and naphthalene in excess of the AWQS and which could be related to historic MGP operations or other industrial activities, including on-site petroleum handling by the railroad and an off-site upgradient oil spill. However, soil samples collected on site did not exhibit BTEX or naphthalene in concentrations in excess of the Part 375 SCOs for Restricted Residential use. Although other non-MGP related constituents (e.g., chlorinated compounds) were observed in two of these monitoring wells, no chlorinated VOCs were detected above the Part 375 SCOs for Restricted Residential in any of the 25 soil borings.**

    - **On-site monitoring wells located hydraulically downgradient did not detect VOCs or SVOCs above the AWQS, indicating that organic constituents are localized and/or not migrating or they attenuate rapidly.**

    - **Metals were consistently detected at concentrations exceeding AWQS in both upgradient and downgradient wells for magnesium, manganese, iron, and sodium. These metals are consistent with natural groundwater conditions related to the dolostone bedrock and indigenous soils in the area. Lead was detected in only one (1) of the seven monitoring wells at a concentration exceeding the AWQS.**

Study results indicate that the Site is comprised of reworked fill material typical of urban fill in old industrial and urban settings and that further soil investigation would likely do nothing more than affirm the random and sporadic distribution of soil analytes both above and below referenced SCOs across the Site. No VOCs were detected in any soil samples above Part 375 SCOs applicable to the mixed commercial-residential use of the 90 Canal Street parcel and the commercial use of the 65 Trowbridge Street parcel. (Only acetone, methylene chloride, and/or xylenes were detected in soil samples at concentrations exceeding the TAGM 4046 SCOs, and those exceedances occurred at only five locations). Most of the boring locations did not detect SVOCs in soil samples above referenced SCOs, and even when they did, those few SVOCs were not observed above AWQS in the related groundwater quality monitoring wells. NAPL was not encountered and there were only three visual observations of staining possibly indicative of petroleum or coal tar contamination.

Overall, the nature and distribution of constituents in the Site soils are similar to typical urban background conditions; however, their origins could not be determined. NAPL and/or signs of coal tar were not encountered and staining was only observed in three soil samples. The data do not indicate that a specific source of impact is present at the Site. This is affirmed by the lack of possible MGP-related constituents at downgradient monitoring wells MW-4 and MW-7. Further characterization of site soils does not appear to be warranted.

To verify that organic constituents in the groundwater are either localized on-site or are attenuated prior to leaving the site, RG&E conducted a second round of groundwater sampling on 11 and 12 October 2007 (in a "seasonal low period") to compare to prior results. The results were consistent with the previous sampling round, which affirmed the conclusions drawn from the groundwater data collected in December 2006. Based on the data collected, further characterization of site groundwater does not appear to be warranted.

REFERENCES

1. **Site Characterization Work Plan. Blasland, Bouck, and Lee, Inc. Canal Street, Rochester Former MGP Site. Rochester Gas & Electric Corp. Rochester, New York. September 2006.**

2. **Geophysical Survey Report. Geomatrix. Canal Street Former MGP Site. Rochester, New York. November 2006.**

3. **Rochester Union & Advertiser articles from the following dates;**
   a. **March 31, 1880**
   b. **August 5, 1880**
   c. **September 10, 1880**
   d. **December 27, 1880**
   e. **January 11, 1881**
   f. **December 22-24, 1887**
   g. **December 26-31, 1887**
   h. **January 5, 1888**
   i. **January 7, 1888**
   j. **March 16, 1888**
   k. **July 15, 1891**
   l. **July 18, 1891**

4. **Rochester Democrat & Chronicle articles from the following dates:**
   a. **December 28, 1887**
   b. **December 29, 1887**

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DRAFT Table 1
Soil Volatile Organic Compound Results
Canal Street, Rochester, New York

Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-1, S2 (2.0-4.0) A6E53502 12/1/2006		SB-2, S3 (4.0-6.0) A6E53503 12/1/2006		SB-3, S5 (8.0-10) A6E21901 11/27/2006		SB-4, S5 (8.0-10) A6E21902 11/27/2006		SB-5, S5 (8.0-9.5) A6E21903 11/27/2006		SB-6, S3 (6.0-8.0) A6E42505 11/30/2006		SB-7, S6 (10-12) A6E42504 11/30/2006		SB-8, S4 (6.0-8.0) A6E42503 11/30/2006		SB-9, S6 (10-12) A6E37701 11/29/2006		SB-10, S2 (4.0-6.0) A6E27408 11/28/2006		SB-10, S6 (12-13.2) A6E27401 11/28/2006		SB-11, S6 (10-12) A6E37702 11/29/2006		SB-12, S2 (2.0-4.0) A6E27402 11/28/2006	
TCL VOCs (ug/kg)																															
1,1,1-Trichloroethane	800	100000	500000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,1,2,2-Tetrachloroethane	600	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6000	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,1,2-Trichloroethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,1-Dichloroethane	200	26000	240000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	UJ	150	U	29	U	6	U
1,1-Dichloroethene	400	100000	500000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,2,4-Trichlorobenzene	3400	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,2-Dibromo-3-chloropropane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,2-Dibromoethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,2-Dichlorobenzene	7900	100000	500000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,2-Dichloroethane	100	3100	30000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	**160**	U	6	U	**150**	U	29	U	6	U
1,2-Dichloropropane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,3-Dichlorobenzene	1600	49000	280000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
1,4-Dichlorobenzene	8500	13000	130000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
2-Butanone	300	N/A	N/A	12	U	12	U	12	U	12	U	11	U	12	U	27		11	U	**320**	U	12		**310**	U	59	U	12	U
2-Hexanone	N/A	N/A	N/A	12	U	12	U	12	U	12	U	11	U	12	U	12	U	11	U	320	U	12	U	310	U	59	U	12	U
4-Methyl-2-pentanone	1000	N/A	N/A	12	U	12	U	12	U	12	U	11	U	12	U	12	U	11	U	320	U	12	U	310	U	59	U	12	U
Acetone	200	100000	500000	25	U	23	U	25	UJ	9	J	23	UJ	10	J	100		11	J	**650**	U	38	J	**610**	U	120	U	20	J
Benzene	60	4800	44000	6	U	6	U	6	U	6	U	6	U	6	U	2	J	6	U	**160**	U	6	U	**150**	U	29	U	6	U
Bromodichloromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Bromoform	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Bromomethane	N/A	N/A	N/A	6	UJ	6	UJ	6	R	6	R	6	R	6	R	6	R	6	R	160	R	6	R	150	UJ	29	R	6	U
Carbon Disulfide	2700	N/A	N/A	12	U	12	U	12	U	12	U	11	U	12	U	12	U	11	U	320	U	12	U	310	U	59	U	12	U
Carbon Tetrachloride	600	2400	22000	6	U	6	U	6	U	6	U	6	U	6	UJ	6	U	6	U	160	U	6	U	150	U	29	UJ	6	U
Chlorobenzene	1700	100000	500000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Chloroethane	1900	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Chloroform	300	49000	350000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Chloromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
cis-1,2-Dichloroethene	N/A	100000	500000	6	U	6	U	1	J	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
cis-1,3-Dichloropropene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Cyclohexane	N/A	N/A	N/A	12	U	12	U	12	U	12	U	11	U	12	U	12	U	11	U	320	U	12	U	310	U	59	U	12	U
Dibromochloromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Dichlorodifluoromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Ethylbenzene	5500	41000	390000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	500		1	J	1200		29	U	6	U
Isopropylbenzene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	510		8		1000		29	U	6	U
Methyl acetate	N/A	N/A	N/A	12	U	12	U	12	UJ	12	UJ	11	UJ	12	U	12	U	11	U	320	UJ	12	UJ	310	U	59	U	12	U
Methyl-t-Butyl Ether (MTBE)	N/A	100000	500000	12	U	12	U	12	U	12	U	11	U	12	U	12	UJ	11	UJ	320	U	12	U	310	U	59	U	12	U
Methylcyclohexane	N/A	N/A	N/A	12	U	12	U	12	U	12	U	11	U	12	U	12	U	11	U	3800		18		2400		6	J	12	U
Methylene chloride	100	100000	500000	14	U	12	U	6	U	6	U	7	U	13	U	12	U	10	U	**170**		14	U	**150**	U	**130**	J	10	J
Styrene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Tetrachloroethene	1400	19000	150000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Toluene	1500	100000	500000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Total Xylenes	1200	100000	500000	18	U	18	U	19	U	17	U	17	U	17	U	19	U	17	U	730		3	J	790		88	U	18	U
trans-1,2-Dichloroethene	300	100000	500000	6	U	6	U	6	U	6	U	6	U	6	UJ	6	UJ	6	UJ	160	U	6	U	150	U	29	UJ	6	U
trans-1,3-Dichloropropene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Trichloroethene	700	21000	200000	6		6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Trichlorofluoromethane	N/A	N/A	N/A	6	UJ	6	UJ	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Vinyl chloride	200	900	13000	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	160	U	6	U	150	U	29	U	6	U
Total VOC	*10000*			*6*		*ND*		*1*		*9*		*ND*		*10*		*129*		*ND*		*5710*		*80*		*5390*		*136*		*30*	

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives are bolded.

Data Qualifiers:
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UJ = Estimated Nondetect Result
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DRAFT Table 1
Soil Volatile Organic Compound Results
Canal Street, Rochester, New York
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Sample ID	NYSDEC	NYSDEC	NYSDEC	SB-12, S5		(DUP of SB-13, S3) DUP-112806		SB-13, S3		SB-14, S4		SB-14, S6		Dup of SB-16, S1 DUP120506		SB-16, S1		SB-16, S7		SB-17, S1		SB-17, S6		SB-19, S2		SB-19, S5	
Sample Depth (ft)	TAGM #4046	Part 375	Part 375	(8.0-10)				(4.0-6.0)		(6.0-8.0)		(10-12)				(0.0-2.0)		(12-14)		(0.0-2.0)		(10-12)		(2.0-4.0)		(8.0-10)	
Lab Sample ID	Soil Cleanup	Restricted	Restricted	A6E27403		A6E27406		A6E27404		A6E37703		A6E37704		A6E62904		A6E62902		A6E62903		A6E53513		A6E53510		A6E53504		A6E53505	
Date Sampled	Objectives	Residential	Commercial	11/28/2006		11/28/2006		11/28/2006		11/29/2006		11/29/2006		12/5/2006		12/5/2006		12/5/2006		12/4/2006		12/4/2006		12/1/2006		12/1/2006	
TCL VOCs (ug/kg)																											
1,1,1-Trichloroethane	800	100000	500000	6	U	280	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,1,2,2-Tetrachloroethane	600	N/A	N/A	6	U	280	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6000	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,1,2-Trichloroethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,1-Dichloroethane	200	26000	240000	6	U	**280**	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,1-Dichloroethene	400	100000	500000	6	U	280	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,2,4-Trichlorobenzene	3400	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dibromo-3-chloropropane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dibromoethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dichlorobenzene	7900	100000	500000	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dichloroethane	100	3100	30000	6	U	**280**	U	**140**	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,2-Dichloropropane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,3-Dichlorobenzene	1600	49000	280000	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
1,4-Dichlorobenzene	8500	13000	130000	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
2-Butanone	300	N/A	N/A	13	U	**550**	U	290	U	**2300**	U	6	J	13	U	12	U	11	U	11	U	7	J	11	J	12	U
2-Hexanone	N/A	N/A	N/A	13	U	550	U	290	U	2300	U	11	U	13	U	12	U	11	U	11	U	13	U	12	U	12	U
4-Methyl-2-pentanone	1000	N/A	N/A	13	U	550	U	290	U	**2300**	U	11	U	13	U	12	U	11	U	11	U	13	U	12	U	12	U
Acetone	200	100000	500000	7	U	**1100**	U	**580**	U	**4600**	U	17	J	25	U	25	U	10	J	23	U	28		50		24	U
Benzene	60	4800	44000	6	U	**280**	U	**140**	U	**1100**	U	6	U	6	U	6	U	6	U	10		6	U	3	J	6	U
Bromodichloromethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Bromoform	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Bromomethane	N/A	N/A	N/A	6	U	280	UJ	140	R	1100	U	6	R	6	R	6	R	6	R	6	UJ	6	UJ	6	UJ	6	UJ
Carbon Disulfide	2700	N/A	N/A	13	U	550	U	290	U	2300	U	11	U	13	U	12	U	11	U	11	U	13	U	1	J	12	U
Carbon Tetrachloride	600	2400	22000	6	U	280	U	140	U	**1100**	U	6	U	6	UJ	6	UJ	6	UJ	6	U	6	U	6	U	6	U
Chlorobenzene	1700	100000	500000	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	UJ	6	U	6	U	6	U
Chloroethane	1900	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Chloroform	300	49000	350000	6	U	280	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Chloromethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
cis-1,2-Dichloroethene	N/A	100000	500000	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
cis-1,3-Dichloropropene	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Cyclohexane	N/A	N/A	N/A	1	J	5100		430		3100		11	U	13	U	12	U	11	U	11	U	2	J	12	U	12	U
Dibromochloromethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Dichlorodifluoromethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Ethylbenzene	5500	41000	390000	6	U	270	J	140	U	750	J	6	U	6	U	6	U	6	U	6	U	7		5	J	6	U
Isopropylbenzene	N/A	N/A	N/A	6	U	540		120	J	1500		6	U	6	U	6	U	6	U	6	U	6	U	3	J	6	U
Methyl acetate	N/A	N/A	N/A	13	U	550	U	290	UJ	2300	U	11	U	13	UJ	12	UJ	11	UJ	11	U	13	U	12	U	12	U
Methyl-t-Butyl Ether (MTBE)	N/A	100000	500000	13	U	550	U	290	U	2300	U	11	UJ	13	U	12	U	11	U	11	U	13	U	12	U	12	U
Methylcyclohexane	N/A	N/A	N/A	3	J	34000		6400		16000		19		13	U	12	U	11	U	11	U	1	J	12	U	12	U
Methylene chloride	100	100000	500000	7	U	**280**	U	98	J	**790**	J	11	U	9	U	8	U	10	U	12	U	16	U	13	U	12	U
Styrene	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	2	J	6	U
Tetrachloroethene	1400	19000	150000	1	J	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Toluene	1500	100000	500000	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	9		6	U
Total Xylenes	1200	100000	500000	19	U	**4400**		610		**1400**	J	3	J	19	U	19	U	16	U	17	U	8	J	13	J	18	U
trans-1,2-Dichloroethene	300	100000	500000	6	U	280	U	140	U	**1100**	U	6	UJ	6	UJ	6	UJ	6	UJ	6	U	6	U	6	U	6	U
trans-1,3-Dichloropropene	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Trichloroethene	700	21000	200000	6	U	280	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Trichlorofluoromethane	N/A	N/A	N/A	6	U	280	U	140	U	1100	U	6	U	6	U	6	U	6	U	6	UJ	6	UJ	6	UJ	6	UJ
Vinyl chloride	200	900	13000	6	U	**280**	U	140	U	**1100**	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U	6	U
Total VOC	*10000*			*5*		**44310**		*7658*		**23540**		*45*		*ND*		*ND*		*10*		*10*		*59*		*97*		*ND*	

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Canal Street, Rochester, New York
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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	MW-1, S2 (2.0-4.0) A6E53501 12/1/2006		MW-2, S8 (14-15) A6E27405 11/28/2006		MW-3, S5 (8.0-10) A6E21904 11/27/2006		MW-4, S5 (8.0-10) A6E37705 11/29/2006		MW-5, S5 (8.0-10) A6E42501 11/30/2006		MW-5, S7 (12-13.5) A6E42502 11/30/2006		MW-6, S2 (2.0-4.0) A6E62901 12/5/2006		MW-7, S4 (6.0-8.0) A6E53508 12/4/2006	
TCL VOCs (ug/kg)																			
1,1,1-Trichloroethane	800	100000	500000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,1,2,2-Tetrachloroethane	600	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,1,2-Trichloro-1,2,2-trifluoroethane	6000	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,1,2-Trichloroethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,1-Dichloroethane	200	26000	240000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,1-Dichloroethene	400	100000	500000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,2,4-Trichlorobenzene	3400	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,2-Dibromo-3-chloropropane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,2-Dibromoethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,2-Dichlorobenzene	7900	100000	500000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,2-Dichloroethane	100	3100	30000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,2-Dichloropropane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,3-Dichlorobenzene	1600	49000	280000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
1,4-Dichlorobenzene	8500	13000	130000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
2-Butanone	300	N/A	N/A	12	U	6	J	11	U	11	U	66		11	U	13	U	11	U
2-Hexanone	N/A	N/A	N/A	12	U	12	U	11	U	11	U	16	U	11	U	13	U	11	U
4-Methyl-2-pentanone	1000	N/A	N/A	12	U	12	U	11	U	11	U	16	U	11	U	13	U	11	U
Acetone	200	100000	500000	24	U	20	J	13	J	7	J	**240**		16	J	26	U	23	U
Benzene	60	4800	44000	6	U	37		6	U	6	U	8	U	6	U	6	U	6	U
Bromodichloromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Bromoform	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Bromomethane	N/A	N/A	N/A	6	UJ	6	U	6	R	6	R	8	R	6	R	6	R	6	UJ
Carbon Disulfide	2700	N/A	N/A	12	U	12	U	11	U	11	U	16	U	11	U	13	U	11	U
Carbon Tetrachloride	600	2400	22000	6	U	6	U	6	U	6	U	8	U	6	U	6	UJ	6	U
Chlorobenzene	1700	100000	500000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Chloroethane	1900	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Chloroform	300	49000	350000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Chloromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
cis-1,2-Dichloroethene	N/A	100000	500000	6	U	6	U	9		6	U	8	U	6	U	6	U	6	U
cis-1,3-Dichloropropene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Cyclohexane	N/A	N/A	N/A	12	U	10	J	11	U	11	U	16	U	11	U	13	U	11	U
Dibromochloromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Dichlorodifluoromethane	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Ethylbenzene	5500	41000	390000	6	U	210		23		6	U	8	U	6	U	6	U	6	U
Isopropylbenzene	N/A	N/A	N/A	6	U	23		7		6	U	8	U	6	U	6	U	6	U
Methyl acetate	N/A	N/A	N/A	12	U	12	U	11	UJ	11	U	16	U	11	U	13	UJ	11	U
Methyl-t-Butyl Ether (MTBE)	N/A	100000	500000	12	U	12	U	11	U	11	UJ	16	UJ	11	UJ	13	U	11	U
Methylcyclohexane	N/A	N/A	N/A	12	U	63		2	J	11	U	3	J	11	U	13	U	11	U
Methylene chloride	100	100000	500000	16	U	10	J	7	U	18	U	14	U	10	U	12	U	13	U
Styrene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Tetrachloroethene	1400	19000	150000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Toluene	1500	100000	500000	6	U	45		6	U	6	U	8	U	6	U	6	U	6	U
Total Xylenes	1200	100000	500000	18	U	190		10	J	17	U	24	U	17	U	20	U	17	U
trans-1,2-Dichloroethene	300	100000	500000	6	U	6	U	6	U	6	UJ	8	UJ	6	UJ	6	UJ	6	U
trans-1,3-Dichloropropene	N/A	N/A	N/A	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Trichloroethene	700	21000	200000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Trichlorofluoromethane	N/A	N/A	N/A	6	UJ	6	U	6	U	6	U	8	U	6	U	6	U	6	UJ
Vinyl chloride	200	900	13000	6	U	6	U	6	U	6	U	8	U	6	U	6	U	6	U
Total VOC	*10000*			*ND*		*614*		*64*		*7*		*309*		*16*		*ND*		*ND*	

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives are bolded.

Data Qualifiers:
U = Nondetected Result
J = Estimated Result
UJ = Estimated Nondetect Result
R = Rejected Result

Acronyms
- ND = All analytes in this sample are nondetect.
- N/A = Data Not Available.

DRAFT Table 2
Soil Semivolatile Organic Compound Results
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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-1, S2 (2.0-4.0) A6E53502 12/1/2006		SB-2, S3 (4.0-6.0) A6E53503 12/1/2006		SB-3, S5 (8.0-10) A6E21901 11/27/2006		SB-4, S5 (8.0-10) A6E21902 11/27/2006		SB-5, S5 (8.0-9.5) A6E21903 11/27/2006		SB-6, S3 (6.0-8.0) A6E42505 11/30/2006		SB-7, S6 (10-12) A6E42504 11/30/2006		SB-8, S4 (6.0-8.0) A6E42503 11/30/2006		SB-9, S6 (10-12) A6E37701 11/29/2006		SB-10, S2 (4.0-6.0) A6E27408 11/28/2006	
TCL SVOCs (ug/kg)																							
2,2'-Oxybis(1-Chloropropane)	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
2,4,5-Trichlorophenol	100	N/A	N/A	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
2,4,6-Trichlorophenol	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
2,4-Dichlorophenol	400	N/A	N/A	390	U	**2200**	U	**410**	U	390	U	400	U	370	U	**420**	U	380	U	**440**	U	**2000**	U
2,4-Dimethylphenol	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
2,4-Dinitrophenol	200 or MDL	N/A	N/A	**2000**	U	**11000**	U	**2100**	UJ	**2000**	UJ	**2000**	UJ	**1900**	UJ	**2200**	U	**2000**	U	**2300**	UJ	**10000**	UJ
2,4-Dinitrotoluene	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
2,6-Dinitrotoluene	1000	N/A	N/A	390	U	**2200**	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	**2000**	U
2-Chloronaphthalene	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
2-Chlorophenol	800	N/A	N/A	390	U	**2200**	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	**2000**	U
2-Methylnaphthalene	36400	N/A	N/A	390	U	2200	U	410	U	390	U	21	J	370	U	420	U	29	J	3000		340	J
2-Methylphenol	100 or MDL	N/A	N/A	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
2-Nitroaniline	430 or MDL	N/A	N/A	**2000**	U	**11000**	U	**2100**	U	**2000**	U	**2000**	U	**1900**	U	**2200**	U	**2000**	U	**2300**	U	**10000**	U
2-Nitrophenol	330 or MDL	N/A	N/A	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
3,3'-Dichlorobenzidine	N/A	N/A	N/A	1900	U	11000	U	2000	U	1900	U	1900	U	1800	U	2000	U	1800	U	2100	U	9500	U
3-Nitroaniline	500 or MDL	N/A	N/A	**2000**	U	**11000**	U	**2100**	U	**2000**	U	**2000**	U	**1900**	U	**2200**	U	**2000**	U	**2300**	U	**10000**	U
4,6-Dinitro-2-methylphenol	N/A	N/A	N/A	2000	U	11000	U	2100	U	2000	U	2000	U	1900	U	2200	U	2000	U	2300	U	10000	U
4-Bromophenyl phenyl ether	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
4-Chloro-3-methylphenol	240 or MDL	N/A	N/A	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
4-Chloroaniline	220 or MDL	N/A	N/A	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
4-Chlorophenyl phenyl ether	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
4-Methylphenol	900	N/A	N/A	390	U	**2200**	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	**2000**	U
4-Nitroaniline	N/A	N/A	N/A	2000	U	11000	U	2100	U	2000	U	2000	U	1900	U	2200	U	2000	U	2300	U	10000	U
4-Nitrophenol	100 or MDL	N/A	N/A	**2000**	U	**11000**	U	**2100**	U	**2000**	U	**2000**	U	**1900**	U	**2200**	U	**2000**	U	**2300**	U	**10000**	U
Acenaphthene	50000	100000	500000	15	J	84	J	410	U	390	U	87	J	370	U	420	U	59	J	960		100	J
Acenaphthylene	41000	100000	500000	390	U	2200	U	26	J	390	U	400	U	370	U	420	U	140	J	110	J	870	J
Acetophenone	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	250	J	2000	U
Anthracene	50000	100000	500000	40	J	190	J	65	J	52	J	150	J	370	U	88	J	81	J	560		610	J
Atrazine	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Benzaldehyde	N/A	N/A	N/A	390	UJ	2200	UJ	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Benzo(a)anthracene	224 or MDL	1000	5600	120	J	**460**	J	210	J	**230**	J	**260**	J	14	J	140	J	170	J	**330**	J	**2100**	
Benzo(a)pyrene	61 or MDL	1000	1000	**120**	J	**410**	J	**220**	J	**260**	J	**190**	J	8	J	**100**	J	**240**	J	**300**	J	**2400**	
Benzo(b)fluoranthene	1100	1000	5600	140	J	560	J	240	J	290	J	210	J	11	J	160	J	200	J	260	J	**4800**	
Benzo(ghi)perylene	50000	100000	500000	80	J	260	J	210	J	280	J	110	J	370	U	63	J	200	J	120	J	1600	J
Benzo(k)fluoranthene	1100	3900	56000	61	J	160	J	88	J	110	J	77	J	370	U	420	U	380	U	440	U	**2000**	U
Biphenyl	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	48	J	760		130	J
Bis(2-chloroethoxy) methane	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Bis(2-chloroethyl) ether	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	UJ	2000	U
Bis(2-ethylhexyl) phthalate	50000	N/A	N/A	81	J	2200	U	410	U	390	U	400	U	370	U	420	U	150	J	440	U	2000	U
Butyl benzyl phthalate	50000	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Caprolactam	N/A	N/A	N/A	2000	U	11000	U	2100	U	2000	U	2000	U	1900	U	2200	U	2000	U	2300	U	10000	U
Carbazole	N/A	N/A	N/A	12	J	55	J	410	U	25	J	64	J	370	U	47	J	380	U	440	U	160	J
Chrysene	400	3900	56000	110	J	**410**	J	210	J	230	J	210	J	10	J	130	J	170	J	330	J	**2300**	
Di-n-butyl phthalate	8100	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U

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Soil Semivolatile Organic Compound Results
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Sample ID **Sample Depth (ft)** **Lab Sample ID** **Date Sampled**	**NYSDEC TAGM #4046 Soil Cleanup Objectives**	**NYSDEC Part 375 Restricted Residential**	**NYSDEC Part 375 Restricted Commercial**	**SB-1, S2 (2.0-4.0) A6E53502 12/1/2006**		**SB-2, S3 (4.0-6.0) A6E53503 12/1/2006**		**SB-3, S5 (8.0-10) A6E21901 11/27/2006**		**SB-4, S5 (8.0-10) A6E21902 11/27/2006**		**SB-5, S5 (8.0-9.5) A6E21903 11/27/2006**		**SB-6, S3 (6.0-8.0) A6E42505 11/30/2006**		**SB-7, S6 (10-12) A6E42504 11/30/2006**		**SB-8, S4 (6.0-8.0) A6E42503 11/30/2006**		**SB-9, S6 (10-12) A6E37701 11/29/2006**		**SB-10, S2 (4.0-6.0) A6E27408 11/28/2006**	
Di-n-octyl phthalate	50000	N/A	N/A	8	J	2200	U	410	U	20	J	20	J	370	U	420	U	380	U	30	J	2000	U
Dibenzo(a,h)anthracene	14 or MDL	330	560	**23**	J	**75**	J	**45**	J	**63**	J	**37**	J	**370**	U	**27**	J	**36**	J	**31**	J	**490**	J
Dibenzofuran	6200	N/A	N/A	8	J	50	J	410	U	390	U	56	J	370	U	23	J	380	U	56	J	280	J
Diethyl phthalate	7100	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Dimethyl phthalate	2000	N/A	N/A	390	U	**2200**	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Fluoranthene	50000	100000	500000	210	J	900	J	400	J	320	J	480		17	J	220	J	180	J	620		2900	
Fluorene	50000	100000	500000	14	J	73	J	23	J	21	J	79	J	370	U	40	J	96	J	520		180	J
Hexachlorobenzene	410	N/A	N/A	390	U	**2200**	U	410	U	390	U	400	U	370	U	**420**	U	380	U	**440**	U	**2000**	U
Hexachlorobutadiene	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Hexachlorocyclopentadiene	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Hexachloroethane	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Indeno(1,2,3-cd)pyrene	3200	500	5600	68	J	230	J	160	J	230	J	110	J	370	U	54	J	100	J	88	J	1300	J
Isophorone	4400	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
N-Nitroso-Di-n-propylamine	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
N-nitrosodiphenylamine	N/A	N/A	N/A	390	U	2200	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	2000	U
Naphthalene	13000	100000	500000	390	U	2200	U	410	U	390	U	40	J	13	J	420	U	130	J	2300		260	J
Nitrobenzene	200 or MDL	N/A	N/A	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
Pentachlorophenol	1000 or MDL	6700	6700	390	U	**2200**	U	410	U	390	U	400	U	370	U	420	U	380	U	440	U	**2000**	U
Phenanthrene	50000	100000	500000	140	J	710	J	230	J	200	J	540		20	J	230	J	320	J	2000		1000	J
Phenol	30 or MDL	100000	500000	**390**	U	**2200**	U	**410**	U	**390**	U	**400**	U	**370**	U	**420**	U	**380**	U	**440**	U	**2000**	U
Pyrene	50000	100000	500000	150	J	650	J	510		320	J	490		13	J	210	J	360	J	1100		2900	J
Total PAHs				*1291*		*5172*		*2637*		*2606*		*3091*		*106*		*1462*		*2511*		*12629*		*24150*	
Total SVOC	*500000*			*1400*		*5277*		*2637*		*2651*		*3231*		*106*		*1532*		*2709*		*13725*		*24720*	

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background (metals only) are bolded.
- Total PAHs includes 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.
- ND = All analytes in this sample are nondetect.
- N/A = Data Not Available.

Data Qualifiers:
U = Nondetected Result
J = Estimated Result
UJ = Estimated Nondetect Result

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Soil Semivolatile Organic Compound Results
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Sample ID	NYSDEC	NYSDEC	NYSDEC	SB-10, S6		SB-11, S6		SB-12, S2		SB-12, S5		(DUP of SB-13, S3) DUP-112806		SB-13, S3		SB-14, S4		Dup of SB-16, S1 DUP120506		SB-16, S1	
Sample Depth (ft)	TAGM #4046	Part 375	Part 375	(12-13.2)		(10-12)		(2.0-4.0)		(8.0-10)				(4.0-6.0)		(6.0-8.0)				(0.0-2.0)	
Lab Sample ID	Soil Cleanup	Restricted	Restricted	A6E27401		A6E37702		A6E27402		A6E27403		A6E27406		A6E27404		A6E37703		A6E62904		A6E62902	
Date Sampled	Objectives	Residential	Commercial	11/28/2006		11/29/2006		11/28/2006		11/28/2006		11/28/2006		11/28/2006		11/29/2006		12/5/2006		12/5/2006	
TCL SVOCs (ug/kg)																					
2,2'-Oxybis(1-Chloropropane)	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
2,4,5-Trichlorophenol	100	N/A	N/A	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	**2000**	U	**2000**	U
2,4,6-Trichlorophenol	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
2,4-Dichlorophenol	400	N/A	N/A	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	**2000**	U	**2000**	U
2,4-Dimethylphenol	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
2,4-Dinitrophenol	200 or MDL	N/A	N/A	**2000**	U	**2000**	UJ	**2000**	U	**11000**	UJ	**19000**	UJ	**19000**	UJ	**2000**	UJ	**10000**	UJ	**10000**	UJ
2,4-Dinitrotoluene	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
2,6-Dinitrotoluene	1000	N/A	N/A	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	**2000**	U	**2000**	U
2-Chloronaphthalene	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
2-Chlorophenol	800	N/A	N/A	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	**2000**	U	**2000**	U
2-Methylnaphthalene	36400	N/A	N/A	160	J	380	U	390	U	290	J	1400	J	680	J	3400		61	J	69	J
2-Methylphenol	100 or MDL	N/A	N/A	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	**2000**	U	**2000**	U
2-Nitroaniline	430 or MDL	N/A	N/A	**2000**	U	**2000**	U	**2000**	U	**11000**	U	**19000**	U	**19000**	U	**2000**	U	**10000**	U	**10000**	U
2-Nitrophenol	330 or MDL	N/A	N/A	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	**2000**	U	**2000**	U
3,3'-Dichlorobenzidine	N/A	N/A	N/A	1900	U	1800	U	1900	U	10000	U	18000	U	18000	U	1900	U	9600	U	9600	U
3-Nitroaniline	500 or MDL	N/A	N/A	**2000**	U	**2000**	U	**2000**	U	**11000**	U	**19000**	U	**19000**	U	**2000**	U	**10000**	U	**10000**	U
4,6-Dinitro-2-methylphenol	N/A	N/A	N/A	2000	U	2000	U	2000	U	11000	U	19000	U	19000	U	2000	U	10000	U	10000	U
4-Bromophenyl phenyl ether	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
4-Chloro-3-methylphenol	240 or MDL	N/A	N/A	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	**2000**	U	**2000**	U
4-Chloroaniline	220 or MDL	N/A	N/A	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	**2000**	U	**2000**	U
4-Chlorophenyl phenyl ether	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
4-Methylphenol	900	N/A	N/A	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	**2000**	U	**2000**	U
4-Nitroaniline	N/A	N/A	N/A	2000	U	2000	U	2000	U	11000	U	19000	U	19000	U	2000	U	10000	U	10000	U
4-Nitrophenol	100 or MDL	N/A	N/A	**2000**	U	**2000**	U	**2000**	U	**11000**	U	**19000**	U	**19000**	U	**2000**	U	**10000**	U	**10000**	U
Acenaphthene	50000	100000	500000	2200		51	J	28	J	460	J	3700	U	3800	U	390	U	2000	U	130	J
Acenaphthylene	41000	100000	500000	370	J	380	U	390	U	780	J	3700	U	3800	U	390	U	280	J	400	J
Acetophenone	N/A	N/A	N/A	58	J	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Anthracene	50000	100000	500000	1600		61	J	93	J	2200		340	J	260	J	45	J	170	J	420	J
Atrazine	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Benzaldehyde	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Benzo(a)anthracene	224 or MDL	1000	5600	**1700**		53	J	100	J	**4200**		210	J	**230**	J	75	J	**790**	J	**1100**	J
Benzo(a)pyrene	61 or MDL	1000	1000	**1500**		28	J	**71**	J	**3800**		**3700**	U	**3800**	U	53	J	**990**	J	**1500**	J
Benzo(b)fluoranthene	1100	1000	5600	**1600**		45	J	99	J	**5300**		**3700**	U	**3800**	U	91	J	**1200**	J	**1600**	J
Benzo(ghi)perylene	50000	100000	500000	640		380	U	29	J	2700		3700	U	3800	U	33	J	1600	J	2400	
Benzo(k)fluoranthene	1100	3900	56000	400	U	24	J	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	370	J	500	J
Biphenyl	N/A	N/A	N/A	610		380	U	27	J	130	J	3700	U	330	J	140	J	140	J	2000	U
Bis(2-chloroethoxy) methane	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Bis(2-chloroethyl) ether	N/A	N/A	N/A	400	UJ	380	UJ	390	UJ	2200	U	3700	U	3800	U	390	UJ	2000	U	2000	U
Bis(2-ethylhexyl) phthalate	50000	N/A	N/A	400	U	380	U	99	J	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Butyl benzyl phthalate	50000	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Caprolactam	N/A	N/A	N/A	2000	UJ	2000	U	2000	UJ	2400	J	19000	U	19000	U	2000	U	10000	U	10000	U
Carbazole	N/A	N/A	N/A	400	U	21	J	390	U	490	J	3700	U	3800	U	390	U	2000	U	41	J
Chrysene	400	3900	56000	**1500**		51	J	100	J	**3900**		**3700**	U	200	J	76	J	**870**	J	**1200**	J
Di-n-butyl phthalate	8100	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U

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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-10, S6 (12-13.2) A6E27401 11/28/2006		SB-11, S6 (10-12) A6E37702 11/29/2006		SB-12, S2 (2.0-4.0) A6E27402 11/28/2006		SB-12, S5 (8.0-10) A6E27403 11/28/2006		(DUP of SB-13, S3) DUP-112806 A6E27406 11/28/2006		SB-13, S3 (4.0-6.0) A6E27404 11/28/2006		SB-14, S4 (6.0-8.0) A6E37703 11/29/2006		Dup of SB-16, S1 DUP120506 A6E62904 12/5/2006		SB-16, S1 (0.0-2.0) A6E62902 12/5/2006	
Di-n-octyl phthalate	50000	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	20	J	2000	U	2000	U
Dibenzo(a,h)anthracene	14 or MDL	330	560	**180**	J	**380**	U	**390**	U	**670**	J	**3700**	U	**3800**	U	**390**	U	**300**	J	**280**	J
Dibenzofuran	6200	N/A	N/A	140	J	57	J	390	U	640	J	3700	U	3800	U	390	U	2000	U	2000	U
Diethyl phthalate	7100	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Dimethyl phthalate	2000	N/A	N/A	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	2000	U	2000	U
Fluoranthene	50000	100000	500000	2900		210	J	290	J	9700		500	J	490	J	200	J	1200	J	2700	
Fluorene	50000	100000	500000	1300		81	J	75	J	1100	J	3700	U	310	J	35	J	47	J	2000	U
Hexachlorobenzene	410	N/A	N/A	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	**2000**	U	**2000**	U
Hexachlorobutadiene	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Hexachlorocyclopentadiene	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Hexachloroethane	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Indeno(1,2,3-cd)pyrene	3200	500	5600	520		380	U	26	J	2400		**3700**	U	**3800**	U	25	J	850	J	1300	J
Isophorone	4400	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
N-Nitroso-Di-n-propylamine	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
N-nitrosodiphenylamine	N/A	N/A	N/A	400	U	380	U	390	U	2200	U	3700	U	3800	U	390	U	2000	U	2000	U
Naphthalene	13000	100000	500000	240	J	380	U	390	U	420	J	350	J	3800	U	2100		80	J	160	J
Nitrobenzene	200 or MDL	N/A	N/A	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	**2000**	U	**2000**	U
Pentachlorophenol	1000 or MDL	6700	6700	400	U	380	U	390	U	**2200**	U	**3700**	U	**3800**	U	390	U	**2000**	U	**2000**	U
Phenanthrene	50000	100000	500000	4200		320	J	260	J	7000		880	J	680	J	170	J	500	J	2400	
Phenol	30 or MDL	100000	500000	**400**	U	**380**	U	**390**	U	**2200**	U	**3700**	U	**3800**	U	**390**	U	2000	U	2000	U
Pyrene	50000	100000	500000	4000		120	J	270	J	8100		480	J	430	J	210	J	1200	J	3200	
Total PAHs				*24610*		*1044*		*1441*		*53020*		*4160*		*3280*		*6513*		*10508*		*19359*	
Total SVOC	*500000*			*25418*		*1122*		*1567*		*56680*		*4160*		*3610*		*6673*		*10648*		*19400*	

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background (metals only) are bolded.
- Total PAHs includes 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.
- ND = All analytes in this sample are nondetect.
- N/A = Data Not Available.

Data Qualifiers:
U = Nondetected Result
J = Estimated Result
UJ = Estimated Nondetect Result

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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-16, S7 (12-14) A6E62903 12/5/2006		SB-17, S1 (0.0-2.0) A6E53513 12/4/2006		SB-17, S6 (10-12) A6E53510 12/4/2006		SB-19, S2 (2.0-4.0) A6E53504 12/1/2006		SB-19, S5 (8.0-10) A6E53505 12/1/2006		MW-1, S2 (2.0-4.0) A6E53501 12/1/2006		MW-2, S8 (14-15) A6E27405 11/28/2006		MW-3, S5 (8.0-10) A6E21904 11/27/2006		MW-4, S5 (8.0-10) A6E37705 11/29/2006		MW-5, S5 (8.0-10) A6E42501 11/30/2006	
TCL SVOCs (ug/kg)																							
2,2'-Oxybis(1-Chloropropane)	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
2,4,5-Trichlorophenol	100	N/A	N/A	**370**	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
2,4,6-Trichlorophenol	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
2,4-Dichlorophenol	400	N/A	N/A	370	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	400	U	370	U	**510**	U
2,4-Dimethylphenol	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
2,4-Dinitrophenol	200 or MDL	N/A	N/A	**1900**	UJ	**19000**	UJ	**2100**	UJ	**20000**	U	**2100**	U	**11000**	U	**10000**	UJ	**2000**	UJ	**1900**	UJ	**2600**	U
2,4-Dinitrotoluene	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
2,6-Dinitrotoluene	1000	N/A	N/A	370	U	**3800**	U	420	U	**3900**	U	420	U	**2100**	U	**2000**	U	400	U	370	U	510	U
2-Chloronaphthalene	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
2-Chlorophenol	800	N/A	N/A	370	U	**3800**	U	420	U	**3900**	U	420	U	**2100**	U	**2000**	U	400	U	370	U	510	U
2-Methylnaphthalene	36400	N/A	N/A	370	U	3800	U	420	U	4200		28	J	2100	U	470	J	34	J	370	U	510	U
2-Methylphenol	100 or MDL	N/A	N/A	**370**	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
2-Nitroaniline	430 or MDL	N/A	N/A	**1900**	U	**19000**	U	**2100**	U	**20000**	U	**2100**	U	**11000**	U	**10000**	U	**2000**	U	**1900**	U	**2600**	U
2-Nitrophenol	330 or MDL	N/A	N/A	**370**	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
3,3'-Dichlorobenzidine	N/A	N/A	N/A	1800	U	18000	U	2000	U	19000	U	2000	U	10000	U	9700	U	1900	U	1800	U	2500	U
3-Nitroaniline	500 or MDL	N/A	N/A	**1900**	U	**19000**	U	**2100**	U	**20000**	U	**2100**	U	**11000**	U	**10000**	U	**2000**	U	**1900**	U	**2600**	U
4,6-Dinitro-2-methylphenol	N/A	N/A	N/A	1900	U	19000	U	2100	U	20000	U	2100	U	11000	U	10000	U	2000	U	1900	U	2600	U
4-Bromophenyl phenyl ether	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
4-Chloro-3-methylphenol	240 or MDL	N/A	N/A	**370**	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
4-Chloroaniline	220 or MDL	N/A	N/A	**370**	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
4-Chlorophenyl phenyl ether	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
4-Methylphenol	900	N/A	N/A	370	U	**3800**	U	420	U	**3900**	U	420	U	**2100**	U	**2000**	U	400	U	370	U	510	U
4-Nitroaniline	N/A	N/A	N/A	1900	U	19000	U	2100	U	20000	U	2100	U	11000	U	10000	U	2000	U	1900	U	2600	U
4-Nitrophenol	100 or MDL	N/A	N/A	**1900**	U	**19000**	U	**2100**	U	**20000**	U	**2100**	U	**11000**	U	**10000**	U	**2000**	U	**1900**	U	**2600**	U
Acenaphthene	50000	100000	500000	370	U	3800	U	420	U	540	J	62	J	2100	U	720	J	43	J	370	U	510	U
Acenaphthylene	41000	100000	500000	370	U	1100	J	420	U	1200	J	420	U	2100	U	320	J	400	U	370	U	510	U
Acetophenone	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Anthracene	50000	100000	500000	370	U	240	J	420	U	1900	J	140	J	58	J	2000		24	J	370	U	38	J
Atrazine	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Benzaldehyde	N/A	N/A	N/A	370	U	3800	U	420	U	3900	UJ	420	UJ	2100	UJ	2000	U	400	U	370	U	510	U
Benzo(a)anthracene	224 or MDL	1000	5600	**370**	U	**2300**	J	**420**	U	**1500**	J	**240**	J	220	J	**2400**		**400**	U	**370**	U	55	J
Benzo(a)pyrene	61 or MDL	1000	1000	**370**	U	**1700**	J	**420**	U	**1600**	J	**180**	J	**220**	J	**2000**		**400**	U	**370**	U	56	J
Benzo(b)fluoranthene	1100	1000	5600	370	U	**3700**	J	420	U	**1500**	J	200	J	230	J	**3300**		400	U	370	U	77	J
Benzo(ghi)perylene	50000	100000	500000	370	U	6000		420	U	1300	J	100	J	130	J	1200	J	400	U	370	U	43	J
Benzo(k)fluoranthene	1100	3900	56000	370	U	**1200**	J	420	U	**3900**	U	93	J	110	J	**2000**	U	400	U	370	U	510	U
Biphenyl	N/A	N/A	N/A	370	U	3800	U	420	U	920	J	420	U	2100	U	180	J	44	J	370	U	510	U
Bis(2-chloroethoxy) methane	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Bis(2-chloroethyl) ether	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	UJ	510	U
Bis(2-ethylhexyl) phthalate	50000	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Butyl benzyl phthalate	50000	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Caprolactam	N/A	N/A	N/A	1900	U	19000	U	2100	U	20000	U	2100	U	11000	U	10000	U	2000	U	1900	U	2600	U
Carbazole	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	61	J	2100	U	380	J	400	U	370	U	510	U
Chrysene	400	3900	56000	370	U	**2200**	J	**420**	U	**1500**	J	210	J	200	J	**2500**		400	U	370	U	61	J
Di-n-butyl phthalate	8100	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U

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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-16, S7 (12-14) A6E62903 12/5/2006		SB-17, S1 (0.0-2.0) A6E53513 12/4/2006		SB-17, S6 (10-12) A6E53510 12/4/2006		SB-19, S2 (2.0-4.0) A6E53504 12/1/2006		SB-19, S5 (8.0-10) A6E53505 12/1/2006		MW-1, S2 (2.0-4.0) A6E53501 12/1/2006		MW-2, S8 (14-15) A6E27405 11/28/2006		MW-3, S5 (8.0-10) A6E21904 11/27/2006		MW-4, S5 (8.0-10) A6E37705 11/29/2006		MW-5, S5 (8.0-10) A6E42501 11/30/2006	
Di-n-octyl phthalate	50000	N/A	N/A	370	U	3800	U	420	U	3900	U	11	J	2100	U	2000	U	22	J	370	U	510	U
Dibenzo(a,h)anthracene	14 or MDL	330	560	**370**	U	**670**	J	**420**	U	**260**	J	**34**	J	**44**	J	**380**	J	**400**	U	**370**	U	**510**	U
Dibenzofuran	6200	N/A	N/A	370	U	3800	U	420	U	150	J	34	J	2100	U	610	J	400	U	370	U	510	U
Diethyl phthalate	7100	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Dimethyl phthalate	2000	N/A	N/A	370	U	**3800**	U	420	U	**3900**	U	420	U	**2100**	U	2000	U	400	U	370	U	510	U
Fluoranthene	50000	100000	500000	370	U	2400	J	420	U	2600	J	480		320	J	6500		400	U	370	U	88	J
Fluorene	50000	100000	500000	370	U	3800	U	420	U	2100	J	68	J	2100	U	1200	J	27	J	370	U	29	J
Hexachlorobenzene	410	N/A	N/A	370	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	400	U	370	U	**510**	U
Hexachlorobutadiene	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Hexachlorocyclopentadiene	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Hexachloroethane	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Indeno(1,2,3-cd)pyrene	3200	500	5600	370	U	**3500**	J	420	U	660	J	92	J	130	J	1200	J	400	U	370	U	33	J
Isophorone	4400	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
N-Nitroso-Di-n-propylamine	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
N-nitrosodiphenylamine	N/A	N/A	N/A	370	U	3800	U	420	U	3900	U	420	U	2100	U	2000	U	400	U	370	U	510	U
Naphthalene	13000	100000	500000	370	U	3800	U	38	J	1200	J	81	J	2100	U	3800		78	J	370	U	510	U
Nitrobenzene	200 or MDL	N/A	N/A	**370**	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
Pentachlorophenol	1000 or MDL	6700	6700	370	U	**3800**	U	420	U	**3900**	U	420	U	**2100**	U	**2000**	U	400	U	370	U	510	U
Phenanthrene	50000	100000	500000	370	U	980	J	420	U	7800		540		200	J	7000		100	J	370	U	100	J
Phenol	30 or MDL	100000	500000	370	U	**3800**	U	**420**	U	**3900**	U	**420**	U	**2100**	U	**2000**	U	**400**	U	**370**	U	**510**	U
Pyrene	50000	100000	500000	370	U	4600		420	U	4200		370	J	250	J	5200		32	J	370	U	140	J
Total PAHs				*ND*		*30590*		*38*		*34060*		*2918*		*2112*		*40190*		*338*		*ND*		*720*	
Total SVOC	*500000*			*ND*		*30590*		*38*		*35130*		*3024*		*2112*		*41360*		*404*		*ND*		*720*	

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background (metals only) are bolded.
- Total PAHs includes 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.
- ND = All analytes in this sample are nondetect.
- N/A = Data Not Available.

Data Qualifiers:
U = Nondetected Result
J = Estimated Result
UJ = Estimated Nondetect Result

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Soil Semivolatile Organic Compound Results
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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	MW-5, S7 (12-13.5) A6E42502 11/30/2006		MW-6, S2 (2.0-4.0) A6E62901 12/5/2006		MW-7, S4 (6.0-8.0) A6E53508 12/4/2006	
TCL SVOCs (ug/kg)									
2,2'-Oxybis(1-Chloropropane)	N/A	N/A	N/A	360	U	4300	U	380	U
2,4,5-Trichlorophenol	100	N/A	N/A	**360**	U	**4300**	U	**380**	U
2,4,6-Trichlorophenol	N/A	N/A	N/A	360	U	4300	U	380	U
2,4-Dichlorophenol	400	N/A	N/A	360	U	**4300**	U	380	U
2,4-Dimethylphenol	N/A	N/A	N/A	360	U	4300	U	380	U
2,4-Dinitrophenol	200 or MDL	N/A	N/A	**1900**	U	**22000**	UJ	**1900**	UJ
2,4-Dinitrotoluene	N/A	N/A	N/A	360	U	4300	U	380	U
2,6-Dinitrotoluene	1000	N/A	N/A	360	U	**4300**	U	380	U
2-Chloronaphthalene	N/A	N/A	N/A	360	U	4300	U	380	U
2-Chlorophenol	800	N/A	N/A	360	U	**4300**	U	380	U
2-Methylnaphthalene	36400	N/A	N/A	360	U	130	J	380	U
2-Methylphenol	100 or MDL	N/A	N/A	**360**	U	**4300**	U	**380**	U
2-Nitroaniline	430 or MDL	N/A	N/A	**1900**	U	**22000**	U	**1900**	U
2-Nitrophenol	330 or MDL	N/A	N/A	**360**	U	**4300**	U	**380**	U
3,3'-Dichlorobenzidine	N/A	N/A	N/A	1800	U	21000	U	1800	U
3-Nitroaniline	500 or MDL	N/A	N/A	**1900**	U	**22000**	U	**1900**	U
4,6-Dinitro-2-methylphenol	N/A	N/A	N/A	1900	U	22000	U	1900	U
4-Bromophenyl phenyl ether	N/A	N/A	N/A	360	U	4300	U	380	U
4-Chloro-3-methylphenol	240 or MDL	N/A	N/A	**360**	U	**4300**	U	**380**	U
4-Chloroaniline	220 or MDL	N/A	N/A	**360**	U	**4300**	U	**380**	U
4-Chlorophenyl phenyl ether	N/A	N/A	N/A	360	U	4300	U	380	U
4-Methylphenol	900	N/A	N/A	360	U	**4300**	U	380	U
4-Nitroaniline	N/A	N/A	N/A	1900	U	22000	U	1900	U
4-Nitrophenol	100 or MDL	N/A	N/A	**1900**	U	**22000**	U	**1900**	U
Acenaphthene	50000	100000	500000	88	J	4300	U	380	U
Acenaphthylene	41000	100000	500000	360	U	820	J	380	U
Acetophenone	N/A	N/A	N/A	360	U	4300	U	380	U
Anthracene	50000	100000	500000	47	J	160	J	380	U
Atrazine	N/A	N/A	N/A	360	U	4300	U	380	U
Benzaldehyde	N/A	N/A	N/A	360	U	4300	U	380	U
Benzo(a)anthracene	224 or MDL	1000	5600	**360**	U	**520**	J	19	J
Benzo(a)pyrene	61 or MDL	1000	1000	**360**	U	**1000**	J	**380**	U
Benzo(b)fluoranthene	1100	1000	5600	360	U	**1200**	J	380	U
Benzo(ghi)perylene	50000	100000	500000	360	U	4400		380	U
Benzo(k)fluoranthene	1100	3900	56000	360	U	340	J	380	U
Biphenyl	N/A	N/A	N/A	360	U	4300	U	380	U
Bis(2-chloroethoxy) methane	N/A	N/A	N/A	360	U	4300	U	380	U
Bis(2-chloroethyl) ether	N/A	N/A	N/A	360	U	4300	U	380	U
Bis(2-ethylhexyl) phthalate	50000	N/A	N/A	360	U	4300	U	380	U
Butyl benzyl phthalate	50000	N/A	N/A	360	U	4300	U	380	U
Caprolactam	N/A	N/A	N/A	1900	U	22000	U	1900	U
Carbazole	N/A	N/A	N/A	360	U	4300	U	380	U
Chrysene	400	3900	56000	360	U	**630**	J	380	U
Di-n-butyl phthalate	8100	N/A	N/A	360	U	4300	U	380	U

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Soil Semivolatile Organic Compound Results
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Sample ID **Sample Depth (ft)** **Lab Sample ID** **Date Sampled**	**NYSDEC TAGM #4046 Soil Cleanup Objectives**	**NYSDEC Part 375 Restricted Residential**	**NYSDEC Part 375 Restricted Commercial**	**MW-5, S7 (12-13.5) A6E42502 11/30/2006**		**MW-6, S2 (2.0-4.0) A6E62901 12/5/2006**		**MW-7, S4 (6.0-8.0) A6E53508 12/4/2006**	
Di-n-octyl phthalate	50000	N/A	N/A	360	U	4300	U	380	U
Dibenzo(a,h)anthracene	14 or MDL	330	560	**360**	U	**610**	J	**380**	U
Dibenzofuran	6200	N/A	N/A	360	U	4300	U	380	U
Diethyl phthalate	7100	N/A	N/A	360	U	4300	U	380	U
Dimethyl phthalate	2000	N/A	N/A	360	U	**4300**	U	380	U
Fluoranthene	50000	100000	500000	50	J	870	J	22	J
Fluorene	50000	100000	500000	36	J	110	J	380	U
Hexachlorobenzene	410	N/A	N/A	360	U	**4300**	U	380	U
Hexachlorobutadiene	N/A	N/A	N/A	360	U	4300	U	380	U
Hexachlorocyclopentadiene	N/A	N/A	N/A	360	U	4300	U	380	U
Hexachloroethane	N/A	N/A	N/A	360	U	4300	U	380	U
Indeno(1,2,3-cd)pyrene	3200	500	5600	360	U	2300	J	380	U
Isophorone	4400	N/A	N/A	360	U	4300	U	380	U
N-Nitroso-Di-n-propylamine	N/A	N/A	N/A	360	U	4300	U	380	U
N-nitrosodiphenylamine	N/A	N/A	N/A	360	U	4300	U	380	U
Naphthalene	13000	100000	500000	360	U	220	J	380	U
Nitrobenzene	200 or MDL	N/A	N/A	**360**	U	**4300**	U	**380**	U
Pentachlorophenol	1000 or MDL	6700	6700	360	U	**4300**	U	380	U
Phenanthrene	50000	100000	500000	150	J	420	J	31	J
Phenol	30 or MDL	100000	500000	**360**	U	**4300**	U	**380**	U
Pyrene	50000	100000	500000	56	J	1200	J	26	J
Total PAHs				*427*		*14930*		*98*	
Total SVOC	*500000*			*427*		*14930*		*98*	

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background (metals only) are bolded.
- Total PAHs includes 2-methylnaphthalene, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene.
- ND = All analytes in this sample are nondetect.
- N/A = Data Not Available.

Data Qualifiers:
U = Nondetected Result
J = Estimated Result
UJ = Estimated Nondetect Result

DRAFT Table 3
Soil Metals and Miscellaneous Results
Canal Street, Rochester, New York

Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	Eastern USA Site Background Range	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-1, S2 (2.0-4.0) A6E53502 12/1/2006		SB-2, S3 (4.0-6.0) A6E53503 12/1/2006		SB-3, S5 (8.0-10) A6E21901 11/27/2006		SB-4, S5 (8.0-10) A6E21902 11/27/2006		SB-5, S5 (8.0-9.5) A6E21903 11/27/2006		SB-6, S3 (6.0-8.0) A6E42505 11/30/2006		SB-7, S6 (10-12) A6E42504 11/30/2006		SB-8, S4 (6.0-8.0) A6E42503 11/30/2006		SB-9, S6 (10-12) A6E37701 11/29/2006	
TOTAL METALS (mg/kg)																						
Aluminum	SB	33,000	N/A	N/A	5020	J	5220	J	5830	J	5500	J	4320	J	3020		10400		4650		5700	J
Antimony	SB	N/A	N/A	N/A	6.9	UJ	8.6	UJ	7	U	6.7	U	6.7	U	6.8	U	7.9	U	6	U	6.8	U
Arsenic	7.5 or SB	3.0-12	16	16	4.9	J	**8.8**	J	5.5		**7.9**		2.5		1.6		4.9		3.4		**21.5**	
Barium	300 or SB	15-600	400	400	49.4	0	**385**		62.1		96.6		34		19.8		86.6		28.1		**1960**	J
Beryllium	0.16 or SB	0-1.75	72	590	**0.57**	U	**0.72**	U	**0.59**	U	**0.56**	U	**0.56**	U	**0.56**	U	**0.66**	U	**0.5**	U	**0.75**	
Cadmium	1.0 or SB	0.1-1.0	4.3	9.3	0.57	U	0.72	U	0.59	U	0.56	U	0.56	U	0.56	U	0.66	U	0.5	U	**5.5**	
Calcium	SB	130-35,000	N/A	N/A	11000		**51400**		11100	J	21100	J	2980	J	**40900**		23900		**36100**		8260	J
Chromium	10 or SB	1.5-40	110	400	6.6	J	8.3	J	**12**		8.7		6.3		3.8		**12.8**		6.9		**11.1**	
Cobalt	30 or SB	2.5-60	N/A	N/A	6.2		7.2	U	5.9	U	5.6	U	5.6	U	5.6	U	7		5	U	28.8	
Copper	25 or SB	1.0-50	270	270	**77.6**	J	**138**	J	12.2		**33.6**		8.2		6.8		17.5		14.3		14.1	
Iron	2000 or SB	2,000-550,000	N/A	N/A	**11800**		**21600**		**15300**	J	**15300**	J	**10700**	J	**5700**		**17900**		**11000**		**59100**	J
Lead	SB	200-500	400	1000	143		**969**		27.7		131		7.3		5.6		125		29		24.5	J
Magnesium	SB	100-5,000	N/A	N/A	3730	J	**5630**	J	3910	J	**5250**	J	**1750**	J	**13300**		**6640**		**8020**		1880	
Manganese	SB	50-5,000	2000	10000	264	J	402	J	360	J	1030	J	129	J	183		336		481		**12300**	J
Mercury	0.1	0.01-0.2	0.81	2.8	**0.581**	J	**0.737**	J	**0.52**		**0.36**		0.0059	U	0.013		**0.16**		0.07		0.014	
Nickel	13 or SB	0.5-25	310	310	11		12.7		10.7		9.6		6.8		4.8		**15.1**		8.4		**26.5**	
Potassium	SB	8,500-43,000	N/A	N/A	796		1030		1100		753		544		601		1520		1010		498	
Selenium	2.0 or SB	0.1-3.9	180	1500	0.69		**2.8**		1.2		1.6		0.91		0.66	U	1.7		1.1		**6.3**	
Silver	SB	N/A	180	1500	1.2	U	1.4		1.2	U	1.1	U	1.1	U	1.2	U	1.3	U	1	U	1.1	U
Sodium	SB	6,000-8,000	N/A	N/A	443		601		146		159		134		76.9		120		105		111	
Thallium	SB	N/A	N/A	N/A	1.1	U	1.4	U	1.2	U	1.1	U	1.1	U	1.1	U	1.3	U	1.1		4.8	
Vanadium	150 or SB	1.0-300	N/A	N/A	13.4		13.2		15.7		17.2		11.9		5.6	U	18.4		12.4		53.8	
Zinc	20 or SB	9.0-50	10000	10000	**71.1**	J	**350**	J	**57.8**		**57.5**		**23.8**		**20.2**		**73.1**		**30.2**		**838**	J
Miscellaneous Parameters																						
Total Cyanide (ug/g)	N/A	N/A	27	27	0.95	UJ	1.1	UJ	1.1	U	1	U	1.2	U	1	U	1.2	U	1.2	U	1.3	U
Corrosivity (pH)	N/A	N/A	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background are bolded.
- N/A = Data Not Available.
- SB = Site Background.

Data Qualifiers:
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DRAFT Table 3
Soil Metals and Miscellaneous Results
Canal Street, Rochester, New York
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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	Eastern USA Site Background Range	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-10, S2 (4.0-6.0) A6E27408 11/28/2006		SB-10, S6 (12-13.2) A6E27401 11/28/2006		SB-11, S6 (10-12) A6E37702 11/29/2006		SB-12, S2 (2.0-4.0) A6E27402 11/28/2006		SB-12, S5 (8.0-10) A6E27403 11/28/2006		(DUP of SB-13, S3) DUP-112806 A6E27406 11/28/2006		SB-13, S3 (4.0-6.0) A6E27404 11/28/2006		SB-14, S4 (6.0-8.0) A6E37703 11/29/2006	
TOTAL METALS (mg/kg)																				
Aluminum	SB	33,000	N/A	N/A	3730	J	1380	J	6800	J	6610	J	4820	J	2410	J	3090	J	4140	J
Antimony	SB	N/A	N/A	N/A	6.6	U	6.5	U	6.2	U	6.2	U	7.1	U	5.6	U	6.4	U	6.5	U
Arsenic	7.5 or SB	3.0-12	16	16	**30**	J	2.6	J	4.6		4	J	**10.4**	J	1.5	J	1.5	J	1.6	
Barium	300 or SB	15-600	400	400	43	J	11.6	J	51.5	J	60.9	J	67.9	J	19.7	J	20.7	J	28.7	J
Beryllium	0.16 or SB	0-1.75	72	590	**0.55**	U	**0.54**	U	**0.52**	U	**0.52**	U	**0.6**	U	**0.47**	U	**0.53**	U	**0.54**	U
Cadmium	1.0 or SB	0.1-1.0	4.3	9.3	0.55	U	0.54	U	0.52	U	0.52	U	0.6	U	0.47	U	0.53	U	0.54	U
Calcium	SB	130-35,000	N/A	N/A	29200	J	11600	J	29000	J	3340	J	**41800**	J	**51300**	J	**54500**	J	2320	J
Chromium	10 or SB	1.5-40	110	400	7.5		3.2		8.9		9.5		**10.2**		4.3		5.4		6.5	
Cobalt	30 or SB	2.5-60	N/A	N/A	5.5	U	5.4	U	5.3		6.4		9.1		4.7	U	5.3	U	5.4	U
Copper	25 or SB	1.0-50	270	270	**49**	J	5.4	J	9.3		11.3	J	**149**	J	7.3	J	11	J	9.3	
Iron	2000 or SB	2,000-550,000	N/A	N/A	**17500**		**4860**		**15100**	J	**14400**		**33600**		**7990**		**9870**		**9010**	J
Lead	SB	200-500	400	1000	116	J	27.4	J	9	J	12.4	J	**4050**	J	2.9	J	5.3	J	16.8	J
Magnesium	SB	100-5,000	N/A	N/A	**12100**		4210		2900		1840		**15700**		**16300**		**12600**		1450	
Manganese	SB	50-5,000	2000	10000	334	J	168	J	158	J	648	J	374	J	291	J	460	J	246	J
Mercury	0.1	0.01-0.2	0.81	2.8	**0.37**		0.086		0.024		0.018		**2.1**		0.0056	U	0.016		0.005	U
Nickel	13 or SB	0.5-25	310	310	**14.4**		4.3	U	10.8		10		**14.9**		5.1		6.1		7.9	
Potassium	SB	8,500-43,000	N/A	N/A	612		358		919		646		824		440		585		662	
Selenium	2.0 or SB	0.1-3.9	180	1500	1.6		0.64	U	2		1.1		**3.8**		0.55	U	0.69		0.73	
Silver	SB	N/A	180	1500	1.1	U	1.1	U	1	U	1	U	1.8		0.94	U	1	U	1.1	U
Sodium	SB	6,000-8,000	N/A	N/A	108		54.1	U	58.1		54.3		156		98		115		106	
Thallium	SB	N/A	N/A	N/A	1.1	U	1.1	U	1	U	1	U	1.2	U	0.94	U	1	U	1.1	U
Vanadium	150 or SB	1.0-300	N/A	N/A	11.7		5.4	U	13.6		18.5		15.7		9.1		11.6		12.8	
Zinc	20 or SB	9.0-50	10000	10000	**89.6**	J	**23.1**	J	**40**	J	**45.5**	J	**144**	J	15.6	J	19.1	J	18.7	J
Miscellaneous Parameters																				
Total Cyanide (ug/g)	N/A	N/A	27	27	0.9	U	0.99	U	0.98	U	0.89	U	1.1	U	1.6		0.88	U	1	U
Corrosivity (pH)	N/A	N/A	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background are bolded.
- N/A = Data Not Available.
- SB = Site Background.

Data Qualifiers:
U = Nondetected Result
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DRAFT Table 3
Soil Metals and Miscellaneous Results
Canal Street, Rochester, New York
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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	Eastern USA Site Background Range	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	Dup of SB-16, S1 DUP120506 A6E62904 12/5/2006		SB-16, S1 (0.0-2.0) A6E62902 12/5/2006		SB-16, S2 (2.0-4.0) A6E73001 12/5/2006		SB-16, S7 (12-14) A6E62903 12/5/2006		SB-17, S1 (0.0-2.0) A6E53513 12/4/2006		SB-17, S6 (10-12) A6E53510 12/4/2006		SB-19, S2 (2.0-4.0) A6E53504 12/1/2006		SB-19, S5 (8.0-10) A6E53505 12/1/2006		MW-1, S2 (2.0-4.0) A6E53501 12/1/2006	
TOTAL METALS (mg/kg)																						
Aluminum	SB	33,000	N/A	N/A	3930		3650		516		3260		4150	J	5330	J	5000	J	6050	J	4340	J
Antimony	SB	N/A	N/A	N/A	7.3	U	7.3	U	10.3	U	6.8	U	6.6	UJ	7.4	UJ	6.3	UJ	8.2	UJ	6.8	UJ
Arsenic	7.5 or SB	3.0-12	16	16	6.4		5.8		2.3		2		**16.6**	J	3.4	J	4.4	J	3.9	J	3.3	J
Barium	300 or SB	15-600	400	400	42.7		36.5		6.1		23.9		60.4		117		42.9		246		58.9	
Beryllium	0.16 or SB	0-1.75	72	590	**0.61**	U	**0.61**	U	**0.85**	U	**0.57**	U	**0.55**	U	**0.62**	U	**0.52**	U	**0.68**	U	**0.56**	U
Cadmium	1.0 or SB	0.1-1.0	4.3	9.3	0.61	U	0.61	U	0.85	U	0.57	U	0.55	U	0.67		0.52	U	0.68	U	0.56	U
Calcium	SB	130-35,000	N/A	N/A	**144000**		**94600**		**236000**		32900		**70400**		7670		24500		4570		32100	
Chromium	10 or SB	1.5-40	110	400	6.4		6		1.7	U	5		**16.8**	J	9.1	J	7.6	J	10	J	6.2	J
Cobalt	30 or SB	2.5-60	N/A	N/A	6.1	U	6.1	U	8.5	U	5.7	U	5.5	U	6.4		5.2	U	6.9		5.6	U
Copper	25 or SB	1.0-50	270	270	23.9		24.2		3.4	U	8.2		**51.4**	J	6	J	**35.9**	J	8.9	J	**104**	J
Iron	2000 or SB	2,000-550,000	N/A	N/A	**11000**		**12100**		1310		**8450**		**13700**		**13200**		**11900**		**16100**		**9820**	
Lead	SB	200-500	400	1000	82.3		50		9.3		2.8		185		13.2		137		89		147	
Magnesium	SB	100-5,000	N/A	N/A	**19600**		**35400**		**71100**		**8600**		**21600**	J	3320	J	**8120**	J	2950	J	**14200**	J
Manganese	SB	50-5,000	2000	10000	259		262		233		296		345	J	3040	J	324	J	1310	J	341	J
Mercury	0.1	0.01-0.2	0.81	2.8	**0.11**		0.1		0.024		0.005	U	**1.1**	J	0.025	J	**0.428**	J	**0.142**	J	**0.41**	J
Nickel	13 or SB	0.5-25	310	310	8.6		9.2		6.8	U	6.2		11.2		6.6		9.6		11.6		7	
Potassium	SB	8,500-43,000	N/A	N/A	853		736		342	U	727		838		462		836		952		716	
Selenium	2.0 or SB	0.1-3.9	180	1500	1		1.1		1	U	0.67	U	0.73		0.97		1.3		0.8	U	0.66	U
Silver	SB	N/A	180	1500	1.2	U	1.2	U	0.98	U	1.1	U	1.2	U	1.3	U	1.1	U	1.3	U	1.2	U
Sodium	SB	6,000-8,000	N/A	N/A	96.3		85.5		85.4	U	112		222		68.9		90.8		68.1	U	124	
Thallium	SB	N/A	N/A	N/A	1.2	U	1.2	U	1.7	U	1.1	U	1.1	U	1.2	U	1	U	1.4	U	1.1	U
Vanadium	150 or SB	1.0-300	N/A	N/A	9.8		9.1		8.5	U	8.9		10.2		15.7		11.6		14.2		9.7	
Zinc	20 or SB	9.0-50	10000	10000	**125**		**126**		**41.8**		18.8		**1290**	J	**110**	J	**56.6**	J	**184**	J	**104**	J
Miscellaneous Parameters																						
Total Cyanide (ug/g)	N/A	N/A	27	27	0.74	U	1	U	11.5		0.76	U	1.1	UJ	0.66	UJ	1.1	UJ	1.2	UJ	1.1	UJ
Corrosivity (pH)	N/A	N/A	N/A	N/A					8.98				-	-	-	-	-	-	-	-	-	-

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background are bolded.
- N/A = Data Not Available.
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DRAFT Table 3
Soil Metals and Miscellaneous Results
Canal Street, Rochester, New York
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Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	Eastern USA Site Background Range	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	MW-2, S8 (14-15) A6E27405 11/28/2006		MW-3, S5 (8.0-10) A6E21904 11/27/2006		MW-4, S5 (8.0-10) A6E37705 11/29/2006		MW-5, S5 (8.0-10) A6E42501 11/30/2006		MW-5, S7 (12-13.5) A6E42502 11/30/2006		MW-6, S2 (2.0-4.0) A6E62901 12/5/2006		MW-7, S4 (6.0-8.0) A6E53508 12/4/2006	
TOTAL METALS (mg/kg)																		
Aluminum	SB	33,000	N/A	N/A	5660	J	7190	J	2760	J	6410		1410		3180		3860	J
Antimony	SB	N/A	N/A	N/A	6.8	U	7.2	U	5.8	U	9.4	U	6.7	U	7.9	U	6.8	UJ
Arsenic	7.5 or SB	3.0-12	16	16	**58.9**	J	6.5		1.6		**13**		2.9		3.5		2.4	J
Barium	300 or SB	15-600	400	400	72	J	49.6		16.8	J	85.2		16.8		42.8		43.2	
Beryllium	0.16 or SB	0-1.75	72	590	**0.57**	U	**0.6**	U	**0.49**	U	**0.78**	U	**0.56**	U	**0.66**	U	**0.57**	U
Cadmium	1.0 or SB	0.1-1.0	4.3	9.3	0.57	U	0.6	U	0.49	U	0.86		0.56	U	0.66	U	0.57	U
Calcium	SB	130-35,000	N/A	N/A	**43100**	J	8540	J	1170	J	8180		**55600**		**69500**		28500	
Chromium	10 or SB	1.5-40	110	400	**13.4**		9.3		3.7		**13**		4.8		5.9		5.5	J
Cobalt	30 or SB	2.5-60	N/A	N/A	5.7	U	6.6		4.9	U	7.8	U	5.6	U	6.6	U	5.7	U
Copper	25 or SB	1.0-50	270	270	**41.2**	J	9.5		6		18.3		3.3		**47**		16	J
Iron	2000 or SB	2,000-550,000	N/A	N/A	**21200**		**19400**	J	**5760**	J	**13000**		**9150**		**3940**		**7690**	
Lead	SB	200-500	400	1000	400	J	21.8		2.6	J	65		16.7		108		82.3	
Magnesium	SB	100-5,000	N/A	N/A	**23700**		**5530**	J	1140		2050		**34700**		**34800**		**9200**	J
Manganese	SB	50-5,000	2000	10000	490	J	320	J	65.7	J	448		483		156		238	J
Mercury	0.1	0.01-0.2	0.81	2.8	0.018		0.032		0.005	U	**0.14**		0.0055	U	**0.34**		0.01	J
Nickel	13 or SB	0.5-25	310	310	**13.5**		11.4		5		7.9		4.5	U	6.8		6	
Potassium	SB	8,500-43,000	N/A	N/A	632		639		373		579		708		417		757	
Selenium	2.0 or SB	0.1-3.9	180	1500	1.8		1.8		0.57	U	**2.5**		0.76		0.78	U	0.67	U
Silver	SB	N/A	180	1500	1.1	U	1.2	U	0.97	U	1.6	U	1.1	U	1.3	U	1.1	U
Sodium	SB	6,000-8,000	N/A	N/A	229		80.4		59.9		78.2	U	89.9		132		103	
Thallium	SB	N/A	N/A	N/A	1.1	U	1.2	U	0.97	U	1.6	U	1.1	U	1.3	U	1.1	U
Vanadium	150 or SB	1.0-300	N/A	N/A	12.8		17		5.9		14.3		5.7		8		8.4	
Zinc	20 or SB	9.0-50	10000	10000	**123**	J	**59.6**		13.8	J	**170**		**31.6**		**70.4**		**38.7**	J
Miscellaneous Parameters																		
Total Cyanide (ug/g)	N/A	N/A	27	27	1.7		0.93	U	1	U	1.5	U	0.94	U	0.72	U	0.72	UJ
Corrosivity (pH)	N/A	N/A	N/A	N/A	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
- Compounds with concentrations greater than Part 375 Restricted Residential soil cleanup objectives are shaded gray.
- Compounds with concentrations greater than TAGM #4046 soil cleanup objectives and/or site background are bolded.
- N/A = Data Not Available.
- SB = Site Background.

Data Qualifiers:
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J = Estimated Result
UJ = Estimated Nondetect Result

DRAFT Table 4
Soil Total Petroleum Hydrocarbon Results
Canal Street, Rochester, New York

Sample ID Sample Depth (ft) Lab Sample ID Date Sampled	NYSDEC TAGM #4046 Soil Cleanup Objectives	NYSDEC Part 375 Restricted Residential	NYSDEC Part 375 Restricted Commercial	SB-10, S6 (12-13.2) A6E27401 11/28/2006		SB-13, S4 (6.0-8.0) A6E27407 11/28/2006		SB-14, S6 (10-12) A6E37704 11/29/2006	
TPH by 310.1 (mg/kg)									
Fuel Oil #2	N/A	N/A	N/A	550		340		11	U
Fuel Oil #4	N/A	N/A	N/A	61	U	12	U	11	U
Fuel Oil #6	N/A	N/A	N/A	61	U	12	U	11	U
Gasoline	N/A	N/A	N/A	61	U	12	U	3.6	J
Kerosene	N/A	N/A	N/A	61	U	12	U	11	
Motor Oil	N/A	N/A	N/A	61	U	12	U	11	U
Other-1	N/A	N/A	N/A	610	U	120	U	110	U
DRO by 8015B (mg/kg)									
Diesel Range Organics	N/A	N/A	N/A	550		340		3.3	U
GRO by 8015B (mg/kg)									
Gasoline Range Organics	N/A	N/A	N/A	420		360		4.6	

Notes:
- N/A = Data Not Available.

Data Qualifiers:
U = Nondetected Result
J = Estimated Result

Sample ID **Lab Sample ID** **Date Sampled**	**NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (ug/L)[1]**	**MW-1** **A6F46701** **12/26/2006**	**MW-1** **A7B81404** **10/12/2007**	**MW-2** **A6F46702** **12/26/2006**	**MW-2** **A7B81401** **10/12/2007**	**MW-2-FD** **A7B81402** **10/12/2007**	**MW-3** **A6F49503** **12/27/2006**	**MW-3** **A7B81407** **10/11/2007**	**MW-4** **A6F49501** **12/27/2006**	**MW-4** **A7B81403** **10/12/2007**	**MW-5** **A6F49502** **12/27/2006**	**MW-5** **A7B81406** **10/12/2007**	**MW-6** **A6F53001** **12/28/2006**	**MW-6-FD** **A6F53004** **12/28/2006**	**MW-6** **A7B81405** **10/12/2007**	**MW-7** **A6F53002** **12/28/2006**
1,1,1-Trichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
1,1-Dichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	5	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 UJ	5 U
1,2-Dibromo-3-chloropropane	0.04	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
1,2-Dibromoethane	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	3	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
1,2-Dichloroethane	0.6	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
1,2-Dichloropropane	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	3	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
1,4-Dichlorobenzene	3	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
2-Butanone	N/A	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	50[4]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	N/A	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	50[4]	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 UJ	20 U	5.8 J	20 U	20 U	20 U	20 U
Benzene	1	**5 U**	**5 U**	**52**	**24**	**23**	**1.6 J**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	1 J	**5 U**
Bromodichloromethane	50[4]	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	50[4]	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	5	5 U	5 UJ	5 U	5 UJ	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 UJ	5 U
Carbon Disulfide	N/A	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	0.76 J	10 U	10 U	10 U	10 U
Carbon Tetrachloride	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	5	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 U	5 UJ	5 U
Chloroform	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	1 J	5 U	5 U	5 U	5 U	5 U
Chloromethane	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	5	5 U	5 U	1.1	5 U	5 U	**96**	**22**	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	0.4[2]	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
Cyclohexane	N/A	5 U	5 U	1 J	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	50[4]	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5	5 U	5 U	**6.6**	1.8 J	1.6 J	**38**	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	5	5 U	5 U	0.5 J	5 U	5 U	**12**	5 U	5 U	5 UJ	3.5 J	1.5 J	5 U	5 U	5 U	5 U
Methyl acetate	N/A	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	10 U	10 UJ	10 UJ	10 U	10 UJ
Methyl-t-Butyl Ether (MTBE)	N/A	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	N/A	10 U	10 U	2.2 J	10 U	10 U	9 J	10 U	10 U	0.53 J	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	5	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 U	5 UJ	5 U	5 UJ	5 U	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Styrene	5	5 U	5 U	1.5 J	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	5	5 U	5 U	**18**	5 U	5 U	0.79 J	5 U	5 U	0.56 J	0.44 J	5 U	5 U	5 U	5 U	5 U
Total Xylenes	5[3]	15 U	15 U	**13 J**	2.4 J	1.3 J	**25**	15 U	15 U	15 UJ	15 U	15 U	15 U	15 U	15 U	15 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	**5.1**	0.82 J	5 U	5 UJ	5 U	5 U	5 U	5 U	1.8 J	5 U
trans-1,3-Dichloropropene	0.4[2]	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**
Trichloroethene	5	5 U	5 U	5 U	5 U	5 U	**57**	**38**	5 U	5 UJ	5 U	5 U	2.4 J	2.3 J	1.1 J	5 U
Trichlorofluoromethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	2	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5.9**	**5 U**	**5 U**	**5 UJ**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**	**5 U**

Footnotes:
(1) Division of Water Technical and Operational Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(2) Applies to the sum of cis- and trans-1,3-dichloropropene.
(3) Applies to o-, m-, and p-xylene separately.
(4) Guidance value

Notes:
- **Bold** values indicate concentrations that exceed the TOGS Water Quality Standards.
- N/A - Data Not Available.
- "U" flagged constituents were bolded or shaded if the quantitation limit exceeded the TOGS Water Quality Standards.

Data Qualifiers:
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected above the reported sample quantitation limit. However the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

DRAFT Table 6
Groundwater Semivolatile Organic Compound Results
Canal Street, Rochester, New York

Sample ID Lab Sample ID Date Sampled		MW-1 A6F46701 12/26/2006	MW-1 A7B81404 10/12/2007	MW-2 A6F46702 12/26/2006	MW-2 A7B81401 10/12/2007	MW-2-FD A7B81402 10/12/2007	MW-3 A6F49503 12/27/2006	MW-3 A7B81407 10/11/2007	MW-4 A6F53003 12/28/2006	MW-4 A7B81403 10/12/2007	MW-5 A6F49502 12/27/2006	MW-5 A7B81406 10/12/2007	MW-6 A6F53001 12/28/2006	MW-6-FD A6F53004 12/28/2006	MW-6 A7B81405 10/12/2007	MW-7 A6F53002 12/28/2006
2,2'-Oxybis(1-Chloropropane)	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
2,4,5-Trichlorophenol	N/A	9 U	200 U	9 U	10 U	9 U	10	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
2,4,6-Trichlorophenol	N/A	9 U	200 U	9 U	10 U	9 U	10	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
2,4-Dichlorophenol	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
2,4-Dimethylphenol	50[(3)]	9 U	**200 U**	9 U	10 U	9 U	10	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
2,4-Dinitrophenol	10[(3)]	**47 UJ**	**980 UJ**	**47 UJ**	**49 UJ**	**47 UJ**	**50 UJ**	**50 UJ**	**56 U**	**47 UJ**	**47 UJ**	**48 UJ**	**48 U**	**48 U**	**49**	**64 U**
2,4-Dinitrotoluene	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
2,6-Dinitrotoluene	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
2-Chloronaphthalene	10	9 U	**200 U**	9 U	10 U	9 U	10 U	10 UJ	**11 U**	9 UJ	9 U	10 U	10 U	10 U	10 U	**13 U**
2-Chlorophenol	N/A	9 U	200 UJ	9 U	10 UJ	9 UJ	10 U	10 UJ	11 U	9 UJ	9 U	10 UJ	10 U	10 U	10	13 U
2-Methylnaphthalene	N/A	9 UJ	200 U	3 J	0.9 J	0.6 J	3 J	10 UJ	11 U	9 UJ	9 UJ	2 J	10 U	10 U	10 U	13 U
2-Methylphenol	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
2-Nitroaniline	5	**47 U**	**980 U**	**47 U**	**49 U**	**47 U**	**50 U**	**50 UJ**	**56 U**	**47 UJ**	**47 U**	**48 U**	**48 U**	**48 U**	**49 U**	**64 U**
2-Nitrophenol	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
3,3'-Dichlorobenzidine	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
3-Nitroaniline	5	**47 U**	**980 U**	**47 U**	**49 U**	**47 U**	**50 U**	**50 UJ**	**56 U**	**47 UJ**	**47 U**	**48 U**	**48 U**	**48 U**	**49 U**	**64 U**
4,6-Dinitro-2-methylphenol	N/A	47 U	980 U	47 U	49 U	47 U	50 U	50 UJ	56 U	47 UJ	47 U	48 U	48 U	48 U	49 U	64 U
4-Bromophenyl phenyl ether	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
4-Chloro-3-methylphenol	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
4-Chloroaniline	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
4-Chlorophenyl phenyl ether	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
4-Methylphenol	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
4-Nitroaniline	5	**47 U**	**980 U**	**47 U**	**49 U**	**47 U**	**50 U**	**50 UJ**	**56 U**	**47 UJ**	**47 U**	**48 U**	**48 U**	**48 U**	**49 U**	**64 U**
4-Nitrophenol	N/A	47 U	980 U	47 U	49 U	47 U	50 U	50 UJ	56 U	47 UJ	47 U	48 U	48 U	48 U	49 U	64 U
Acenaphthene																

Sample ID **Lab Sample ID** **Date Sampled**	**NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (ug/L)[1]**	**MW-1** **A6F46701** **12/26/2006**	**MW-1** **A7B81404** **10/12/2007**	**MW-2** **A6F46702** **12/26/2006**	**MW-2** **A7B81401** **10/12/2007**	**MW-2-FD** **A7B81402** **10/12/2007**	**MW-3** **A6F49503** **12/27/2006**	**MW-3** **A7B81407** **10/11/2007**	**MW-4** **A6F53003** **12/28/2006**	**MW-4** **A7B81403** **10/12/2007**	**MW-5** **A6F49502** **12/27/2006**	**MW-5** **A7B81406** **10/12/2007**	**MW-6** **A6F53001** **12/28/2006**	**MW-6-FD** **A6F53004** **12/28/2006**	**MW-6** **A7B81405** **10/12/2007**	**MW-7** **A6F53002** **12/28/2006**
Bis(2-chloroethyl) ether	1	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Bis(2-ethylhexyl) phthalate	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Butyl benzyl phthalate	50[3]	9 U	**200 U**	9 U	9 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	9 U	10 U	10 U	10 U	13 U
Caprolactam	N/A	47 U	980 U	47 U	49 U	47 U	50 U	50 UJ	56 U	47 UJ	47 U	48 U	48 U	48 U	49 U	64 U
Carbazole	N/A	9 U	200 U	1 J	0.7 J	0.8 J	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
Chrysene	0.002[3]	**9 U**	**8 J**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Di-n-butyl phthalate	50	9 U	**200 U**	9 U	0.3 J	9 U	0.6 J	10 UJ	11 U	0.3 J	1 J	0.6 J	10 U	10 U	10 U	13 U
Di-n-octyl phthalate	50[3]	9 U	**200 UJ**	9 U	10 UJ	9 UJ	10 U	10 UJ	11 U	9 UJ	9 U	10 UJ	10 U	10 U	10 UJ	13 U
Dibenzo(a,h)anthracene	N/A	9 U	200 U	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
Dibenzofuran	N/A	9 U	200 U	1 J	0.8 J	0.7 J	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
Diethyl phthalate	50[3]	9 U	**200 U**	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
Dimethyl phthalate	50[3]	9 U	**200 U**	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
Fluoranthene	50[3]	9 U	14 J	2 J	1 J	1 J	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	0.6 J	13 U
Fluorene	50[3]	9 U	**200 U**	2 J	1 J	1 J	10 U	10 UJ	11 U	9 UJ	1 J	0.8 J	10 U	10 U	10 U	13 U
Hexachlorobenzene	0.04	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Hexachlorobutadiene	0.5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Hexachlorocyclopentadiene	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 UJ**	**9 UJ**	**9 U**	**10 U**	**10 UJ**	**10 UJ**	**10 U**	**13 UJ**
Hexachloroethane	5	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Indeno(1,2,3-cd)pyrene	0.002[3]	**9 U**	**7 J**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**0.2 J**	**13 U**
Isophorone	50[3]	9 U	**200 U**	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
N-Nitroso-Di-n-propylamine	N/A	9 U	200 UJ	9 U	10 UJ	9 UJ	10 U	10 UJ	11 U	9 UJ	9 U	10 UJ	10 U	10 U	10 UJ	13 U
N-nitrosodiphenylamine	50[3]	9 U	**200 U**	9 U	10 U	9 U	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	10 U	13 U
Naphthalene	10[3]	9 U	**200 U**	**68**	4 J	2 J	**33**	10 UJ	**11 U**	9 UJ	1 J	10 U	10 U	10 U	10 U	**13 U**
Nitrobenzene	0.4	**9 U**	**200 U**	**9 U**	**10 U**	**9 U**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 U**	**10 U**	**10 U**	**10 U**	**13 U**
Pentachlorophenol	1[2]	**47 U**	**980 U**	**47 U**	**49 U**	**47 U**	**50 U**	**50 UJ**	**56 U**	**47 UJ**	**7 J**	**48 U**	**48 U**	**48 U**	**49 U**	**64 U**
Phenanthrene	50[3]	9 U	10 J	5 J	3 J	3 J	10 U	10 UJ	11 U	9 UJ	0.9 J	0.4 J	10 U	10 U	10 U	13 U
Phenol	1[2]	**9 U**	**200 UJ**	**9 U**	**10 UJ**	**9 UJ**	**10 U**	**10 UJ**	**11 U**	**9 UJ**	**9 U**	**10 UJ**	**10 U**	**10 U**	**10 UJ**	**13 U**
Pyrene	50[3]	9 U	13 J	1 J	0.8 J	1 J	10 U	10 UJ	11 U	9 UJ	9 U	10 U	10 U	10 U	0.7 J	13 U

Footnotes:
(1) Division of Water Technical and Operational Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(2) Applies to sum of phenolic compounds.
(3) Guidance value

Notes:
- **Bold** values indicate concentrations that exceed the TOGS Water Quality Standards.
- N/A - Data Not Available.
- "U" flagged constituents were bolded or shaded if the quantitation limit exceeded the TOGS Water Quality Standards.

Data Qualifiers:
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected above the reported sample quantitation limit. However the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

DRAFT Table 7
Groundwater Metals and Miscellaneous Parameter Results
Canal Street, Rochester, New York

Sample ID **Lab Sample ID** **Date Sampled**	**NYSDEC TOGS 1.1.1 Class GA Water Quality Standards (ug/L)[1]**	**MW-1** **A6F46701** **12/26/2006**	**MW-1** **A7B81404** **10/12/2007**	**MW-2** **A6F46702** **12/26/2006**	**MW-2** **A7B81401** **10/12/2007**	**MW-2-FD** **A7B81402** **10/12/2007**	**MW-3** **A6F49503** **12/27/2006**	**MW-3** **A7B81407** **10/11/2007**	**MW-4** **A6F53003** **12/28/2006**	**MW-4** **A7B81403** **10/12/2007**	**MW-5** **A6F49502** **12/27/2006**	**MW-5** **A7B81406** **10/12/2007**	**MW-6** **A6F53001** **12/28/2006**	**MW-6-FD** **A6F53004** **12/28/2006**	**MW-6** **A7B81405** **10/12/2007**	**MW-7** **A6F53002** **12/28/2006**
TAL Metals (ug/L)																
Aluminum - Total	N/A	655	117000	763	560	518	190	190	1480	19600	8840	16900	190	190	4190	190
Antimony - Total	3	600 R	**600 U**	600 R	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**	**600 U**
Arsenic - Total	25	10 U	**120**	10 U	10 U	10 U	10 U	10 U	10 U	14.5	23.3	**44.5**	10 U	10 U	10 U	10 U
Barium - Total	1000	104	**1630**	93.2	102	107	48.3	63.5	136	397	300	819	61.9	62	128	68.2
Beryllium - Total	3	**5 U**	**5**	**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**
Cadmium - Total	5	1 U	**6.1**	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1.3	1 U	1 U	1 U	1 U
Calcium - Total	N/A	114000	424000	83600	80500	83800	98300	91200	91000	209000	264000	329000	57500	57500	88200	138000
Chromium - Total	50	10 U	**180**	10 U	10 U	10 U	10 U	10 U	10 U	40.1	19.5	43	10 U	10 U	10 U	10 U
Cobalt - Total	N/A	50 U	66.2	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Copper - Total	200	20 U	**1970**	20 U	20 U	20 U	20 U	20 U	20 U	41.4	20 U	45	20 U	20 U	20 U	20 U
Iron - Total	300[3]	**11800**	**246000**	**8850**	**7830**	**7770**	**547**	**433**	**1960**	**45100**	**39500**	**47700**	100 U	100 U	**9920**	**559**
Lead - Total	25	12.2	**3940**	16.2	11.8	12.1	3 U	3 U	6.6	**89.8**	**44.8**	**112**	3 U	3 U	23.7	3 U
Magnesium - Total	35000[2]	24100	**165000**	**38200**	**35800**	**37500**	33300	24400	**184000**	**82800**	**103000**	**124000**	**221000**	**219000**	**218000**	25800
Manganese - Total	300[3]	**382**	**4080**	**740**	**604**	**604**	**667**	15 U	**490**	**2590**	**1400**	**1540**	22.1	22.5	172	**854**
Mercury - Total	0.7	0.3 U	**20.8**	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Nickel - Total	100	40 U	**154**	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U	40 U
Potassium - Total	N/A	8720	25500	10700	12200	12800	7480	6090	7380	11700	11800	11600	10400	10400	13300	6330
Selenium - Total	10	6.1 U	6.2	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	9.6	6.1 U	6.1 U
Silver - Total	50	10 U	10.4	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Sodium - Total	20000	**58900**	**44700**	**49700**	**65600**	**70100**	11700	9840	7110	9570	17500	**22100**	**61800**	**61800**	**75500**	13300
Thallium - Total	0.5[2]	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**	**10 U**
Vanadium - Total	N/A	50 U	217	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc - Total	2000[2]	30.8	**3990**	20 U	20 U	20 U	20 U	20 U	32	126	115	251	20 U	20 U	66.1	29.1
Miscellaneous (ug/L)																
Cyanide - Total	200	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	25.5	10 U	10 U

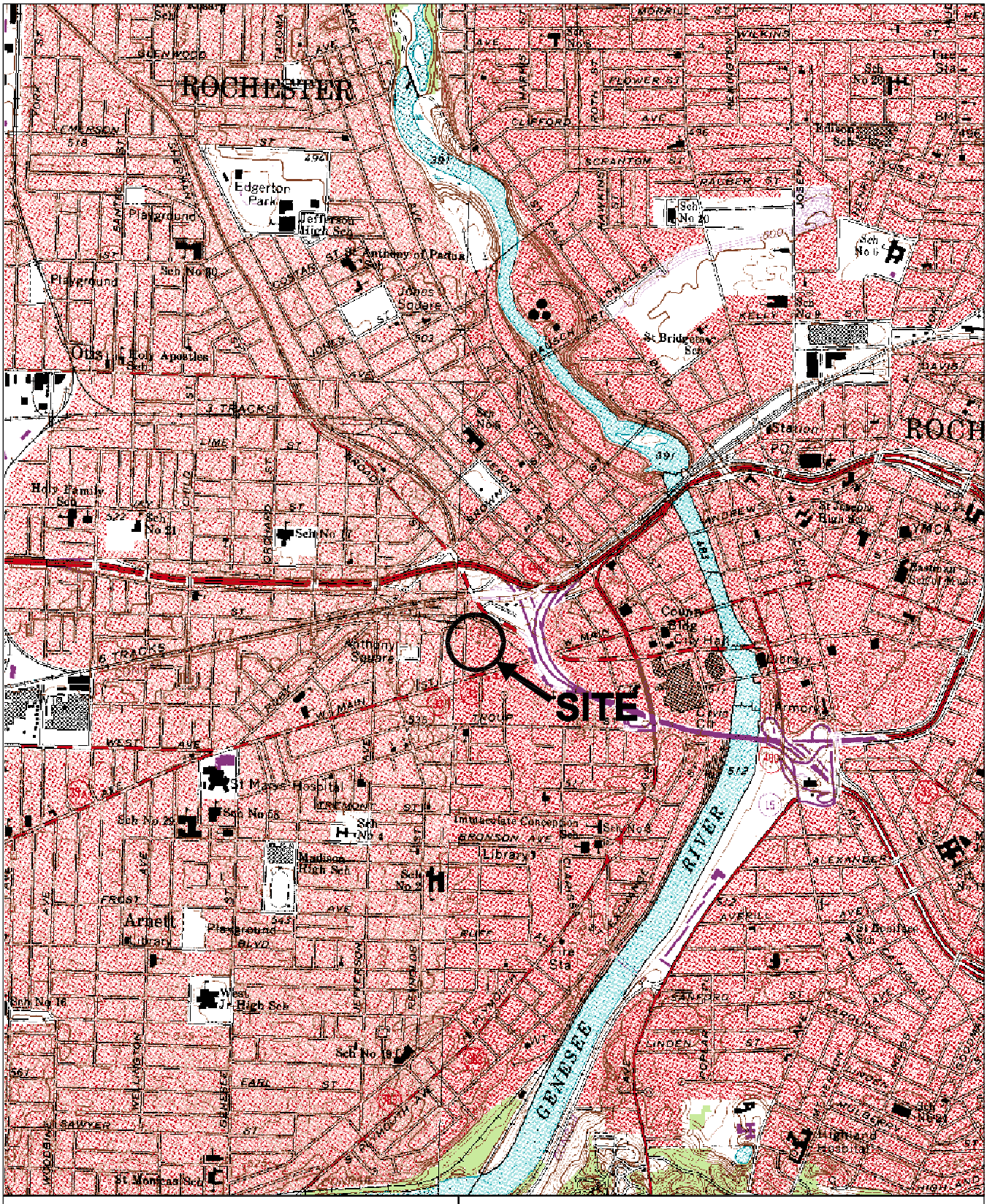
Footnotes:
(1) Division of Water Technical and Operational Guidance Series (1.1.1). Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(2) Guidance value
(3) Standard for total iron and manganese is 500 ug/L.

Notes:
- **Bold** values indicate concentrations that exceed the TOGS Water Quality Standards.
- N/A - Data Not Available.
- "U" flagged constituents were bolded or shaded if the quantitation limit exceeded the TOGS Water Quality Standards.

Data Qualifiers:
U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ = The analyte was not detected above the reported sample quantitation limit. However the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R = The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Table 8
Groundwater Well Data
Canal Street, Rochester, New York

Well ID	Depth of Well (ft)	Screen Interval (ft)	Ground Surface Elevation (ft)	PVC Riser Elevation (ft)	Bedrock Elevation (ft)	Static Depth to Water (TOR-ft) 12/18/2006	Groundwater Elevation (ft) 12/18/2006	Static Depth to Water (TOR-ft) 10/11/2007	Groundwater Elevation (ft) 10/11/2007
MW-1	9.5	2.5 - 7.5	514.07	513.77	504.6	5.23	508.54	6.86	506.91
MW-2	17	5.0 - 15.0	512.75	512.53	495.8	10.06	502.47	10.19	502.34
MW-3	13.1	3.0 - 11.1	513.57	516.59	500.5	11.84	504.75	11.98	504.61
MW-4	15	4.0 - 13.0	513.10	515.90	498.1	16.04	499.86	15.75	500.15
MW-5	15.5	4.5 - 13.5	514.23	514.05	498.7	9.68	504.37	11.42	502.63
MW-6	12.5	4.5 - 10.5	511.80	511.67	499.3	6.11	505.56	7.25	504.42
MW-7	14.5	7.0 - 12.5	514.59	514.49	500.1	11.83	502.66	12.1	502.39



U.S.G.S. QUADRANGLE: ROCHESTER, WEST

HALEY & ALDRICH

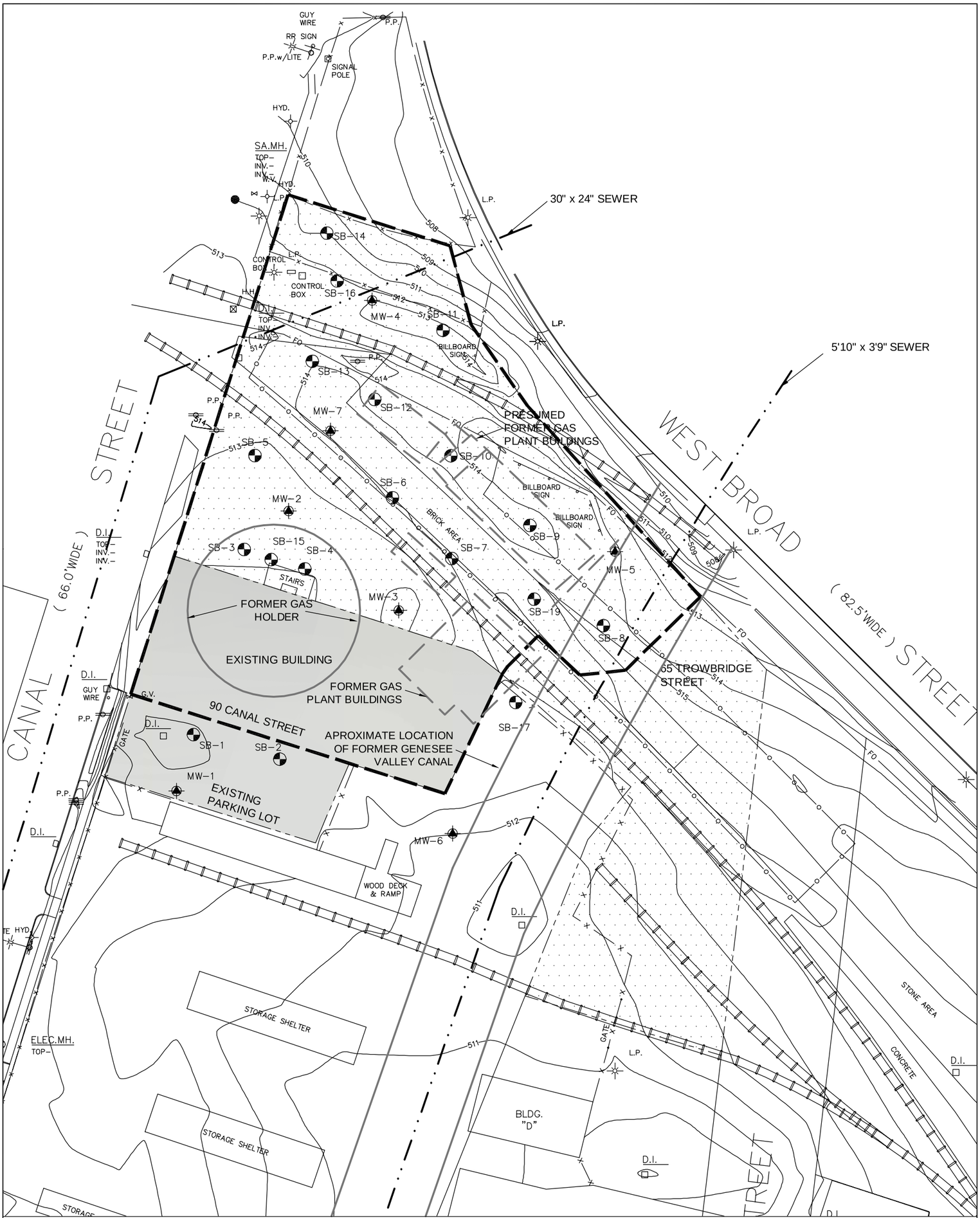
ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

PROJECT LOCUS

SCALE: 1:24000
JANUARY 2008

FIGURE 1

:\PROJECTS\138790\03 REPORT W DUSR\JAN 2008 DRAFT\138790-003-LOCUS.DWG



LEGEND:

- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- 65 TROWBRIDGE STREET PARCEL
- 90 CANAL STREET PARCEL
- APPROXIMATE LIMITS OF FORMER MUNICIPAL GAS LIGHT COMPANY MGP
- RAILROAD
- SEWER LINE
- 511 GROUND ELEVATION CONTOURS
- PARCEL BOUNDARY LINE

N
W E
S

0 60 120
AS SHOWN

NOTES:

1. LOCATIONS OF SOIL BORINGS AND MONITORING WELLS WERE SURVEYED BY PARRONE ENGINEERING.

2. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES AND FEATURES DERIVED FROM PARRONE ENGINEERING DRAWING 6192.DWG

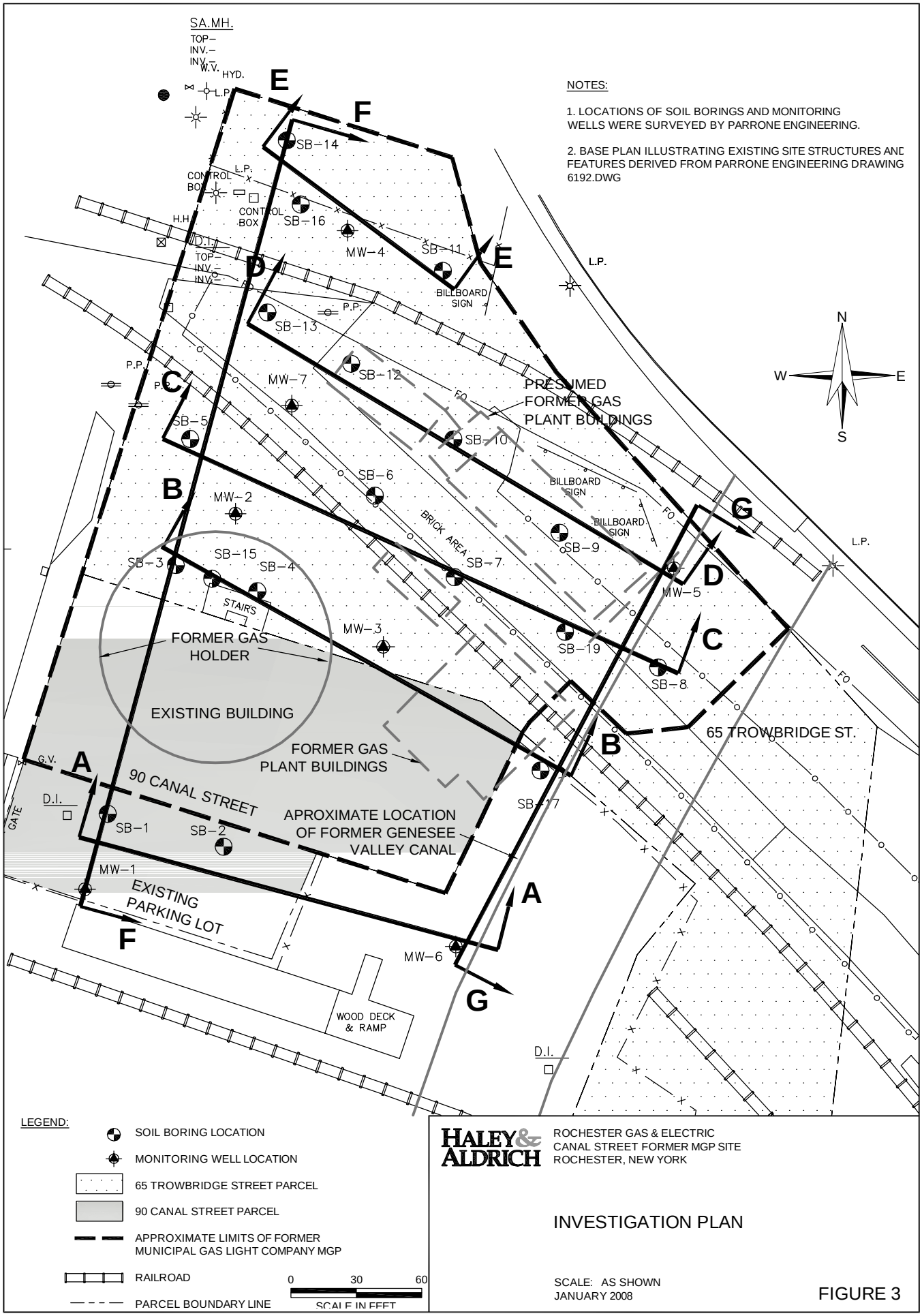
HALEY & ALDRICH

ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SITE FEATURES

SCALE: AS SHOWN
JANUARY 2008

FIGURE 2


NOTES:
1. LOCATIONS OF SOIL BORINGS AND MONITORING WELLS WERE SURVEYED BY PARRONE ENGINEERING.
2. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES AND FEATURES DERIVED FROM PARRONE ENGINEERING DRAWING 6192.DWG
SA.MH.
TOP–
INV.–
INV.–
W.V.
HYD.
L.P.
CONTROL BOX
H.H
D.I.
TOP–
INV.–
INV.–
P.P.
BILLBOARD SIGN
N
W
E
S
PRESUMED FORMER GAS PLANT BUILDINGS
FO
BRICK AREA
STAIRS
FORMER GAS HOLDER
EXISTING BUILDING
FORMER GAS PLANT BUILDINGS
APROXIMATE LOCATION OF FORMER GENESEE VALLEY CANAL
65 TROWBRIDGE ST.
90 CANAL STREET
G.V.
GATE
EXISTING PARKING LOT
WOOD DECK & RAMP
SB–1
SB–2
SB–3
SB–4
SB–5
SB–6
SB–7
SB–8
SB–9
SB–10
SB–11
SB–12
SB–13
SB–14
SB–15
SB–16
SB–17
SB–19
MW–1
MW–2
MW–3
MW–4
MW–5
MW–6
MW–7
A
B
C
D
E
F
G
LEGEND:
SOIL BORING LOCATION
MONITORING WELL LOCATION
65 TROWBRIDGE STREET PARCEL
90 CANAL STREET PARCEL
APPROXIMATE LIMITS OF FORMER MUNICIPAL GAS LIGHT COMPANY MGP
RAILROAD
PARCEL BOUNDARY LINE
0
30
60
SCALE IN FEET
HALEY & ALDRICH
ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK
INVESTIGATION PLAN
SCALE: AS SHOWN
JANUARY 2008
FIGURE 3
G:\PROJECTS\33879\003 REPORT W DUSR\JAN 2008 DRAFT\SECTION LINES.DWG

IDENTIFICATION AND DESCRIPTION OF SOIL MATERIALS

Soil description on logs of subsurface explorations are based on Standard Penetration Test results, visual–manual examination of exposed soil and soil samples, and the results of laboratory tests on selected samples. The criteria, descriptive terms and definitions are as follows:

DENSITY OR CONSISTENCY

Density of Cohesionless Soils	Penetration Resistance (Blows per ft.)	Consistency of Cohesive Soils	Penetration Resistance (Blows per ft.)
Very Loose	0–4	Very Soft	0–2
Loose	5–10	Soft	3–4
Medium	11–30	Medium	5–8
Dense	31–50	Stiff	9–15
Very Dense	over 50	Very Stiff	16–30
		Hard	over 30

PENETRATION RESISTANCE

Standard Penetration Test (ASTM D–1586) – Number of blows required to drive a standard 2 in. O.D. split spoon sampler 1 ft. with a 140 lb. weight falling freely through 30 in.

COLOR: Basic colors and combinations: black, brown, gray, yellow–brown, etc.

SUPPLEMENTAL SOIL TERMINOLOGY:

Lamina	– 0 to 1/16 in. thick (cohesive)
Parting	– 0 to 1/16 in. thick (granular)
Seam	– 1/16 to 1/2 in. thick
Layer	– 1/2 to 12 in. thick
Stratum	– > 12 in. thick
Pocket	– Small, erratic deposit less than 12 in. size
Lens	– Lenticular deposit larger than a pocket
Occasional	– One or less per 12 in. of thickness
Frequent	– More than one per 12 in. of thickness
Interbedded	– Alternating soil layers of differing composition
Varved	– Alternating thin seams of silt and clay
Mottled	– Variation of color

GEOLOGIC INTERPRETATION

Deposit type – GLACIAL TILL, ALLUVIUM, FILL.....

The natural soils are identified by criteria of Unified Soil Classification System (USCS), with appropriate group symbol in parenthesis for each soil description. Fill materials may not be classified by USCS criteria.

U.S. Standard Series Sieve							Clear Square Sieve Openings						
12"		3"		3/4"		4	10		40		200		
Boulders	Cobbles	Gravel			Sand					Silts and Clays			
		Coarse		Fine	Coarse		Medium		Fine				
305 mm		76 mm		19 mm	4.75 mm		2.00 mm		0.43 mm		0.074 mm		

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			Group Symbol	Graphic Symbol	TYPICAL NAMES
Coarse grained soils: more than half is larger than number 200 sieve	Gravels More than half of coarse fraction is larger than number 4 sieve	Gravels with little or no fines	GW		Well graded gravels, gravel–sand mixtures
			GP		Poorly graded gravels, gravel–sand mixtures
		Gravels with over 12% fines	GM		Silty gravels, poorly graded gravel–sand–silt mixtures
			GC		Clayey gravels, poorly graded gravel–sand–clay mixtures
	Sands More than half of coarse fraction is smaller than number 4 sieve	Sands with little or no fines	SW		Well graded sands, gravelly sands
			SP		Poorly graded sands, gravelly sands
		Sands with over 12% fines	SM		Silty sands, poorly graded sand–silt mixtures
			SC		Clayey sands, poorly graded sand–clay mixtures
Fined–grained soils: more than half smaller than number 200 sieve	Silts and Clays Liquid limit 50% or less		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic clays and organic silty clays of low plasticity
	Silts and Clays Liquid limit greater than 50%		MH		Inorganic silty, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
Highly organic soils			PT		Peat and other highly organic soils

GENERAL NOTES

1. Logs of subsurface explorations depict soil and groundwater conditions only at the locations specified on the dates indicated. Subsurface conditions may vary at other locations and at other times.
2. Water levels noted on the logs were measured at the times and under the conditions indicated. During test borings, these water levels could have been affected by the introduction of water into the borehole, extraction of tools on other procedures and thus may not reflect actual groundwater level at the test boring location. Groundwater level fluctuations may also occur as a result of variations in precipitation, temperature, season, tides, adjacent construction activities and pumping of water supply wells and construction dewatering systems.

GENERAL LEGEND

- BEDROCK
- WEATHERED BEDROCK
- CONCRETE

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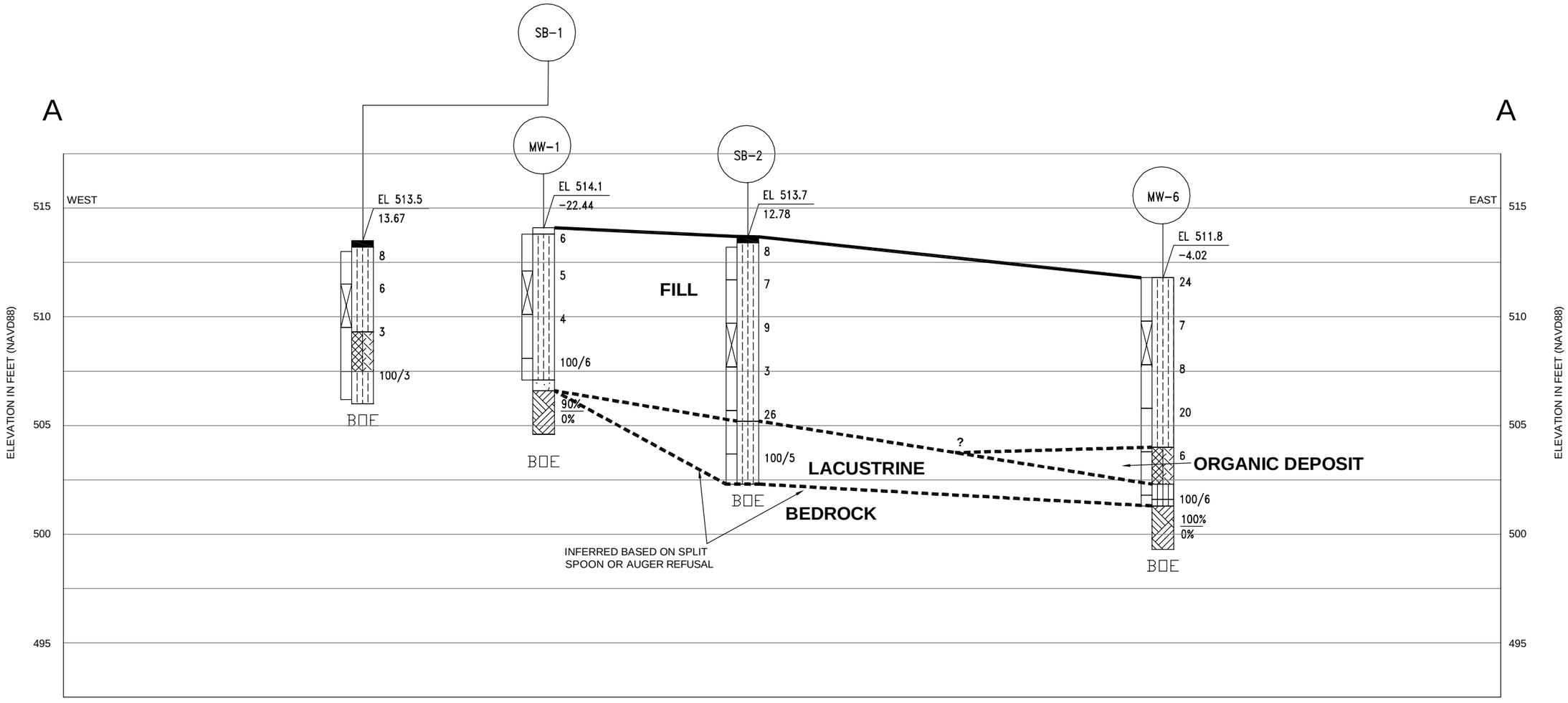
SUBSURFACE EXPLORATION
KEY FOR SOIL

SCALE: NONE
JANUARY 2008

FIGURE 4

G:\PROJECTS\338791\003 REPORT W DUSRUAN 2008 DRAFT\PROFILES 01-31-2007.DWG



HA-207 — BORING DESIGNATION

EL 12.0 / -15.0 — APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

4 — APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

89% / 39% — PERCENT RECOVERY / PERCENT RQD

BOE — BOTTOM OF EXPLORATION

NOTES:

1. ELEVATIONS ARE IN FEET AND REFER TO NAVD88.
2. OFFSET DISTANCES INDICATED ARE MEASURED FROM THE PLAN ELEVATION OF THE PROFILE LINE, PERPENDICLUAR TO THE LINE.
3. WATER LEVELS IN OPEN BOREHOLES WERE OBSERVED ON THE DATE INDICATED ON THE BORING LOG. INDICATED LEVELS MAY NOT REFLECT THE ACTUAL GROULDWATER. FLUCUATIONS IN GROUNDWATER LEVELS CAN OCCUR DUE TO VARIATIONS IN PRECIPITATION, SEASONS, WATER TABLE FLUCTUATION, ADJACENT CONSTRUCTION ACTIVITY, CONSTRUCTION DEWATERING SYSTEMS AND OTHER FACTORS.
4. REFER TO THE REPORT APPENDICES FOR TEST BORING LOGS.
5. THE STANDARD PENETRATION RESISTANCE, "N", IS DEFINED AS THE NUMBER OF BLOWS OF A 140-LB HAMMER FALLING THROUGH A VERTICAL DISTANCE OF 30 INCHES REQUIRED TO DRIVE A 2-INCH O.D., 1 3/8-INCH I.D. SPLIT SPOON SAMPLER 12 INCHES.
6. REFER TO THE REPORT TEXT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED SAMPLE DESCRIPTIONS.
7. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED ON ADJACENT BORINGS. THE BORING STICK SHOWS THE INTERPRETED SEQUENCE OF STRATA ENCOUNTERED AT THAT LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.

HORIZ. 0 30 60
VERT. 0 5 10

HALEY & ALDRICH

ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SUBSURFACE PROFILE A-A

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5A

G:\PROJECTS\133879\003 REPORT W/ DJSR\JAN 2008 DRAFT\PROFILES 01-31-2007.DWG

B

B

WEST

EAST

ELEVATION IN FEET (NAVD88)

515

510

505

500

495

SB-3

SB-15

SB-4

MW-3

SB-17

EL 512.9
-4.69

EL 513.2
-2.03

EL 513.2
3.08

EL 513.6
8.93

EL 514.2
-5.29

APPROXIMATE LOCATION OF GAS HOLDER

FILL

ORGANIC DEPOSIT

LACUSTRINE

ROCK AT 502 +/-

BOE

89%
39%

100%
0%

100/2

100/5

100/4

100/1

100/6

TOP OF ROCK INFERRED BASED ON SPLIT SPOON OR AUGER REFUSAL

BEDROCK

G:\PROJECTS\33879\003 REPORT W DUSR\JAN 2008 DRAFT\PROFILES 01-31-2007.DWG

HA-207 — BORING DESIGNATION

EL 12.0
-15.0 — APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

4 — APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

89%
39% — PERCENT RECOVERY / PERCENT RQD

BOE — BOTTOM OF EXPLORATION

NOTES:

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3. WATER LEVELS IN OPEN BOREHOLES WERE OBSERVED ON THE DATE INDICATED ON THE BORING LOG. INDICATED LEVELS MAY NOT REFLECT THE ACTUAL GROULDWATER. FLUCUATIONS IN GROUNDWATER LEVELS CAN OCCUR DUE TO VARIATIONS IN PRECIPITATION, SEASONS, WATER TABLE FLUCTUATION, ADJACENT CONSTRUCTION ACTIVITY, CONSTRUCTION DEWATERING SYSTEMS AND OTHER FACTORS.
4. REFER TO THE REPORT APPENDICES FOR TEST BORING LOGS.
5. THE STANDARD PENETRATION RESISTANCE, "N", IS DEFINED AS THE NUMBER OF BLOWS OF A 140-LB HAMMER FALLING THROUGH A VERTICAL DISTANCE OF 30 INCHES REQUIRED TO DRIVE A 2-INCH O.D., $1\frac{3}{8}$-INCH I.D. SPLIT SPOON SAMPLER 12 INCHES.
6. REFER TO THE REPORT TEXT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED SAMPLE DESCRIPTIONS.
7. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED ON ADJACENT BORINGS. THE BORING STICK SHOWS THE INTERPRETED SEQUENCE OF STRATA ENCOUNTERED AT THAT LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.

HORIZ. 0 30 60

VERT. 0 5 10

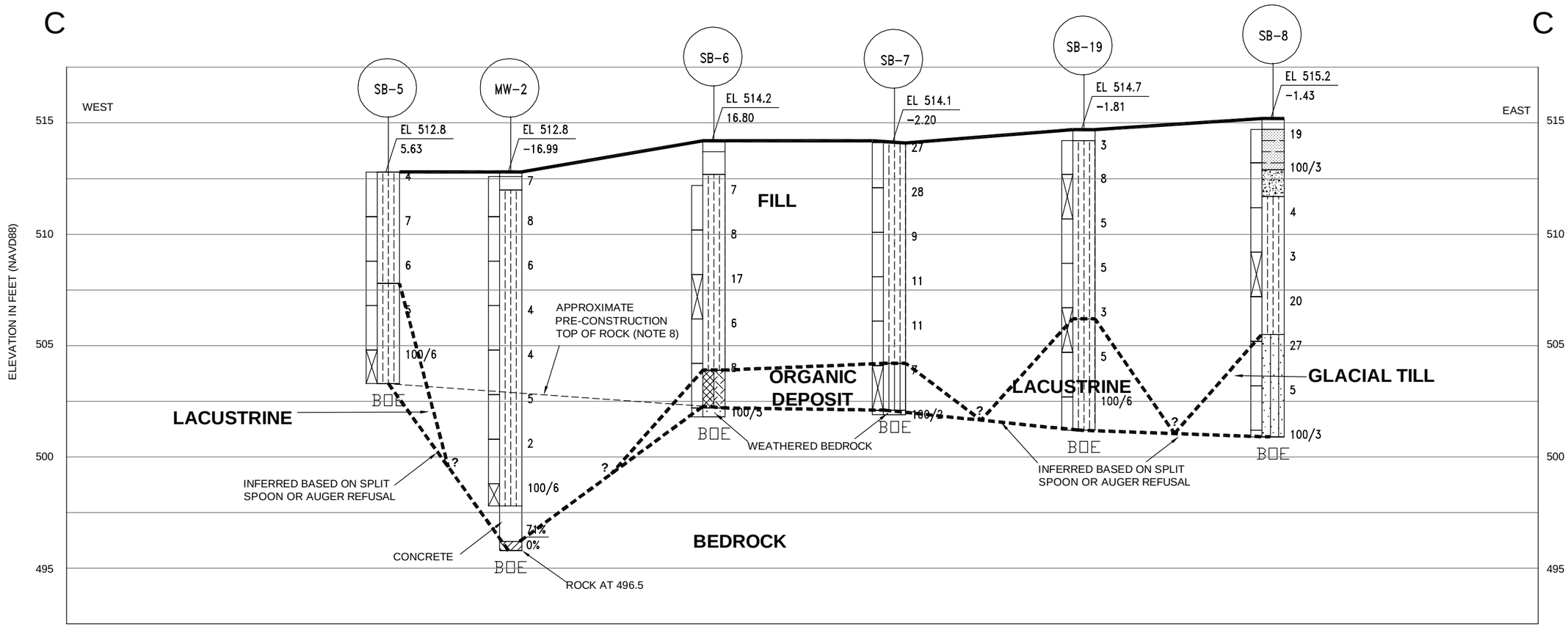
HALEY & ALDRICH

ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SUBSURFACE PROFILE B-B

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5B



HA-207 — BORING DESIGNATION

EL 12.0 / -15.0 — APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

4 — APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

89% / 39% — PERCENT RECOVERY / PERCENT RQD

BOE — BOTTOM OF EXPLORATION

NOTES:

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8. PRE-CONSTRUCTION BEDROCK ELEVATION INTERPOLATED BETWEEN BORING SB-6 AND BORING SB-5.

HORIZ. 0 30 60
VERT. 0 5 10

HALEY & ALDRICH

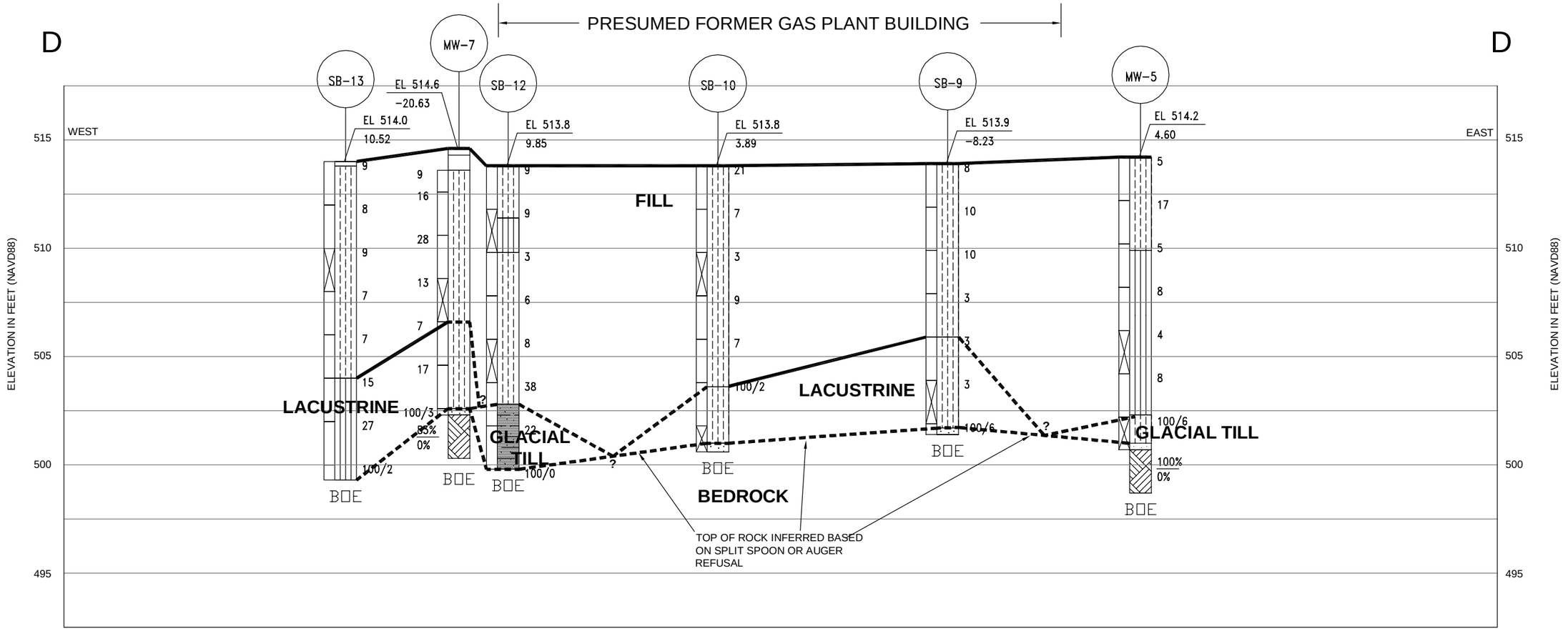
ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SUBSURFACE PROFILE C-C

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5C

G:\PROJECTS\33879\003 REPORT W DUSR\JAN 2008 DRAFT\PROFILES 01-31-2007.DWG



HA-207 — BORING DESIGNATION

EL 12.0 / -15.0 — APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

4 — APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

89% / 39% — PERCENT RECOVERY / PERCENT RQD

BOE — BOTTOM OF EXPLORATION

NOTES:

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3. WATER LEVELS IN OPEN BOREHOLES WERE OBSERVED ON THE DATE INDICATED ON THE BORING LOG. INDICATED LEVELS MAY NOT REFLECT THE ACTUAL GROULDWATER. FLUCUATIONS IN GROUNDWATER LEVELS CAN OCCUR DUE TO VARIATIONS IN PRECIPITATION, SEASONS, WATER TABLE FLUCTUATION, ADJACENT CONSTRUCTION ACTIVITY, CONSTRUCTION DEWATERING SYSTEMS AND OTHER FACTORS.
4. REFER TO THE REPORT APPENDICES FOR TEST BORING LOGS.
5. THE STANDARD PENETRATION RESISTANCE, "N", IS DEFINED AS THE NUMBER OF BLOWS OF A 140-LB HAMMER FALLING THROUGH A VERTICAL DISTANCE OF 30 INCHES REQUIRED TO DRIVE A 2-INCH O.D., 1 3/8-INCH I.D. SPLIT SPOON SAMPLER 12 INCHES.
6. REFER TO THE REPORT TEXT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED SAMPLE DESCRIPTIONS.
7. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED ON ADJACENT BORINGS. THE BORING STICK SHOWS THE INTERPRETED SEQUENCE OF STRATA ENCOUNTERED AT THAT LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.

HORIZ. 0 30 60
VERT. 0 5 10

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CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

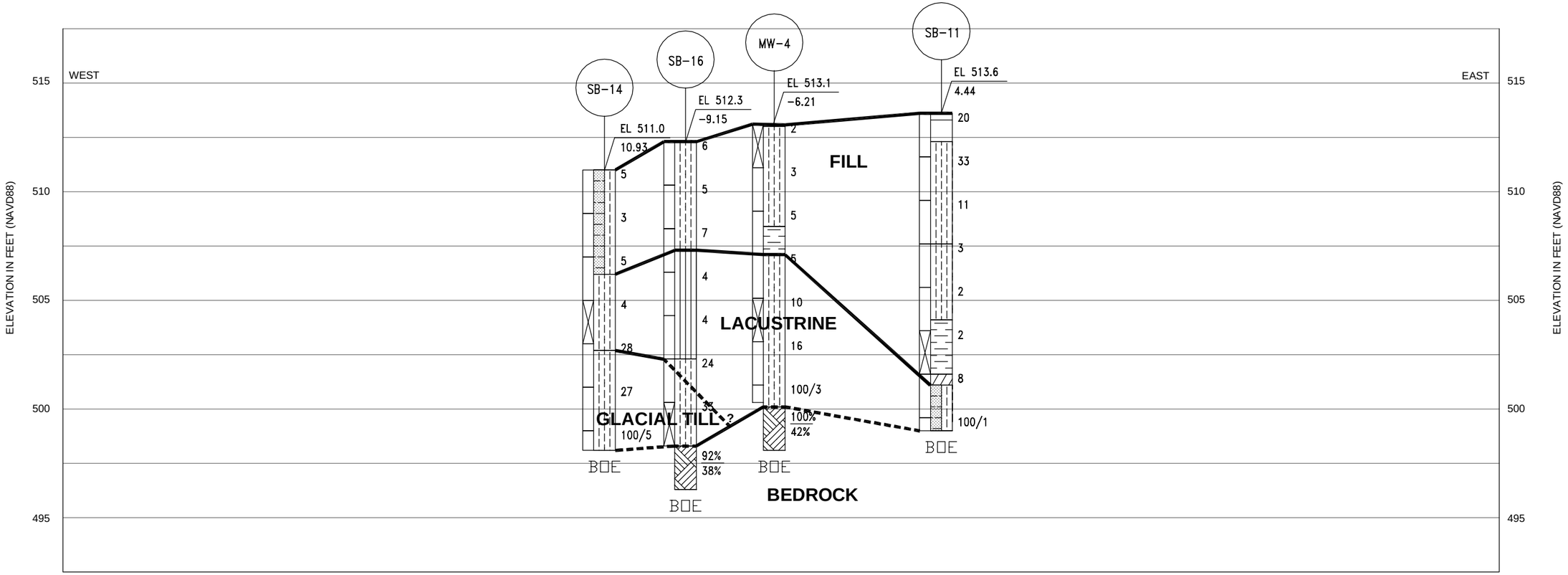
SUBSURFACE PROFILE D-D

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5D

G:\PROJECTS\133879\003 REPORT W DUSR\JAN 2008 DRAFT\PROFILES 01-31-2007.DWG

E



E

HA-207 — BORING DESIGNATION

EL 12.0 / -15.0 — APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

4 — APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

89% / 39% — PERCENT RECOVERY / PERCENT RQD

BOE — BOTTOM OF EXPLORATION

NOTES:

1. ELEVATIONS ARE IN FEET AND REFER TO NAVD88.
2. OFFSET DISTANCES INDICATED ARE MEASURED FROM THE PLAN ELEVATION OF THE PROFILE LINE, PERPENDICLUAR TO THE LINE.
3. WATER LEVELS IN OPEN BOREHOLES WERE OBSERVED ON THE DATE INDICATED ON THE BORING LOG. INDICATED LEVELS MAY NOT REFLECT THE ACTUAL GROULDWATER. FLUCUATIONS IN GROUNDWATER LEVELS CAN OCCUR DUE TO VARIATIONS IN PRECIPITATION, SEASONS, WATER TABLE FLUCTUATION, ADJACENT CONSTRUCTION ACTIVITY, CONSTRUCTION DEWATERING SYSTEMS AND OTHER FACTORS.
4. REFER TO THE REPORT APPENDICES FOR TEST BORING LOGS.
5. THE STANDARD PENETRATION RESISTANCE, "N", IS DEFINED AS THE NUMBER OF BLOWS OF A 140-LB HAMMER FALLING THROUGH A VERTICAL DISTANCE OF 30 INCHES REQUIRED TO DRIVE A 2-INCH O.D., $1\frac{3}{8}$-INCH I.D. SPLIT SPOON SAMPLER 12 INCHES.
6. REFER TO THE REPORT TEXT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED SAMPLE DESCRIPTIONS.
7. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED ON ADJACENT BORINGS. THE BORING STICK SHOWS THE INTERPRETED SEQUENCE OF STRATA ENCOUNTERED AT THAT LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.

HORIZ.	0	30	60
VERT.	0	5	10

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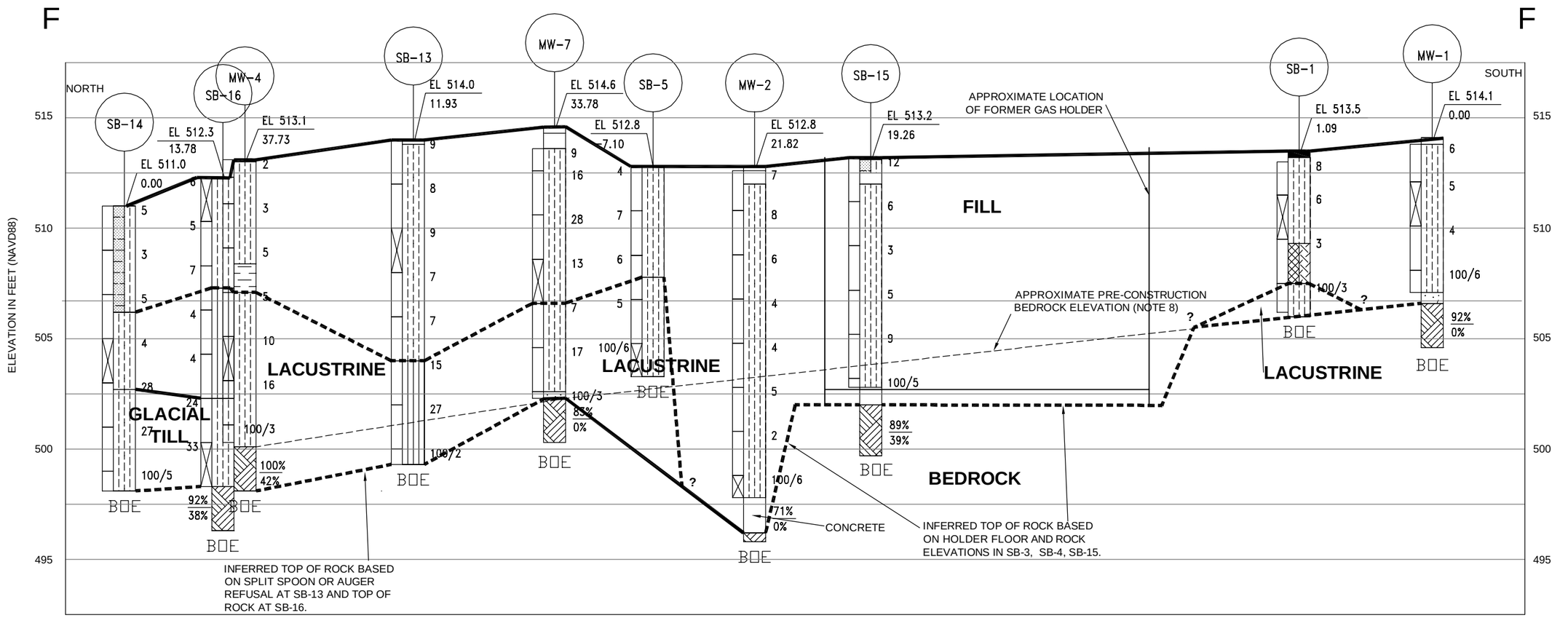
ROCHESTER, NEW YORK

SUBSURFACE PROFILE E-E

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5E

G:\PROJECTS\338790003 REPORT W DUSRUAN 2008 DRAFT\PROFILES 01-31-2007.DWG



HA-207 — BORING DESIGNATION

EL 12.0 / -15.0 — APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

4 — APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

89% / 39% — PERCENT RECOVERY / PERCENT RQD

BOE — BOTTOM OF EXPLORATION

NOTES:

1. ELEVATIONS ARE IN FEET AND REFER TO NAVD88.
2. OFFSET DISTANCES INDICATED ARE MEASURED FROM THE PLAN ELEVATION OF THE PROFILE LINE, PERPENDICLUAR TO THE LINE.
3. WATER LEVELS IN OPEN BOREHOLES WERE OBSERVED ON THE DATE INDICATED ON THE BORING LOG. INDICATED LEVELS MAY NOT REFLECT THE ACTUAL GROULDWATER. FLUCUATIONS IN GROUNDWATER LEVELS CAN OCCUR DUE TO VARIATIONS IN PRECIPITATION, SEASONS, WATER TABLE FLUCTUATION, ADJACENT CONSTRUCTION ACTIVITY, CONSTRUCTION DEWATERING SYSTEMS AND OTHER FACTORS.
4. REFER TO THE REPORT APPENDICES FOR TEST BORING LOGS.
5. THE STANDARD PENETRATION RESISTANCE, "N", IS DEFINED AS THE NUMBER OF BLOWS OF A 140-LB HAMMER FALLING THROUGH A VERTICAL DISTANCE OF 30 INCHES REQUIRED TO DRIVE A 2-INCH O.D., 1-3/8-INCH I.D. SPLIT SPOON SAMPLER 12 INCHES.
6. REFER TO THE REPORT TEXT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED SAMPLE DESCRIPTIONS.
7. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED ON ADJACENT BORINGS. THE BORING STICK SHOWS THE INTERPRETED SEQUENCE OF STRATA ENCOUNTERED AT THAT LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.
8. PRE-CONSTRUCTION BEDROCK ELEVATION INTERPOLATED BETWEEN BORING MW-1 AND BORING MW-7.

HORIZ.	0	30	60
VERT.	0	5	10

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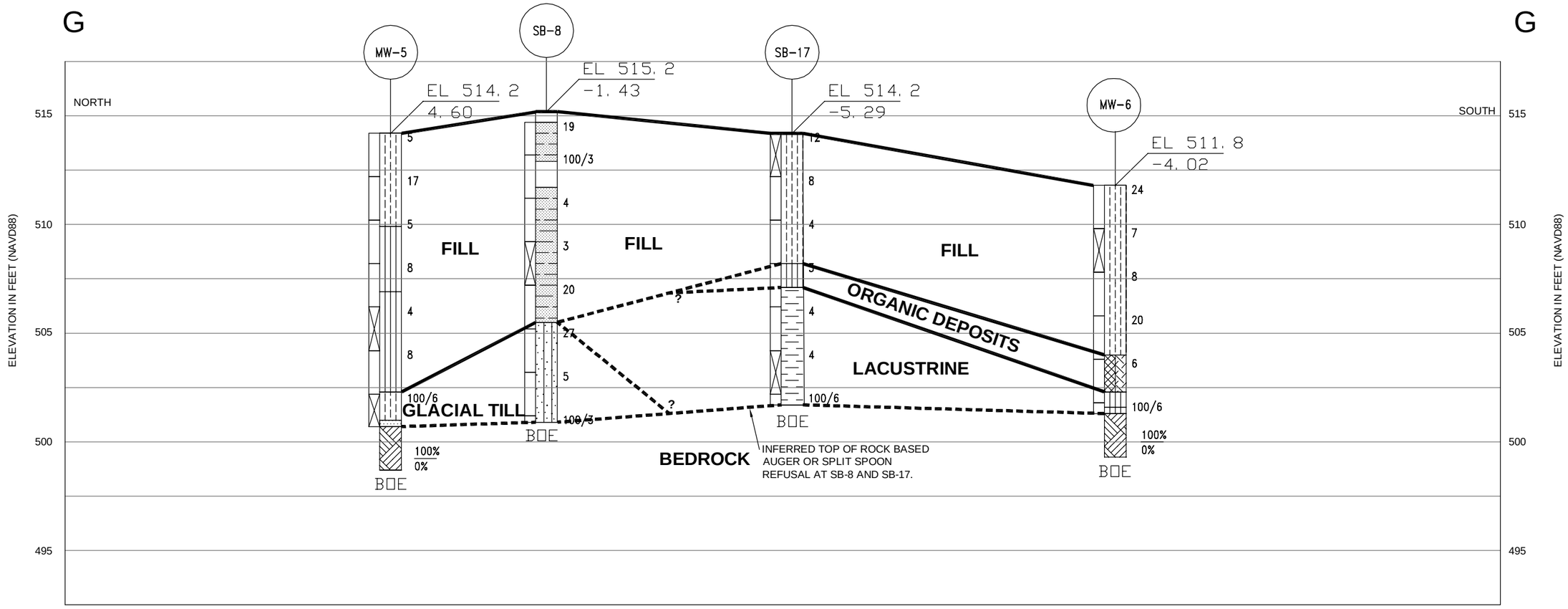
ROCHESTER, NEW YORK

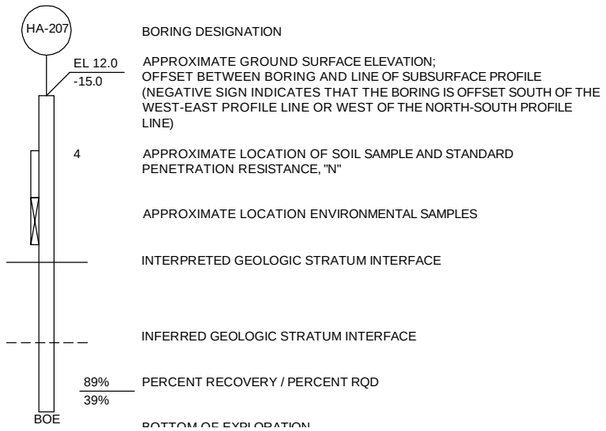
SUBSURFACE PROFILE F-F

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5F

G:\PROJECTS\33879\003 REPORT W DUSR\JAN 2008 DRAFT\PROFILES 01-31-2007.DWG





BORING DESIGNATION

APPROXIMATE GROUND SURFACE ELEVATION; OFFSET BETWEEN BORING AND LINE OF SUBSURFACE PROFILE (NEGATIVE SIGN INDICATES THAT THE BORING IS OFFSET SOUTH OF THE WEST-EAST PROFILE LINE OR WEST OF THE NORTH-SOUTH PROFILE LINE)

APPROXIMATE LOCATION OF SOIL SAMPLE AND STANDARD PENETRATION RESISTANCE, "N"

APPROXIMATE LOCATION ENVIRONMENTAL SAMPLES

INTERPRETED GEOLOGIC STRATUM INTERFACE

INFERRED GEOLOGIC STRATUM INTERFACE

PERCENT RECOVERY / PERCENT RQD

BOTTOM OF EXPLORATION

NOTES:

1. ELEVATIONS ARE IN FEET AND REFER TO NAVD88.
2. OFFSET DISTANCES INDICATED ARE MEASURED FROM THE PLAN ELEVATION OF THE PROFILE LINE, PERPENDICLUAR TO THE LINE.
3. WATER LEVELS IN OPEN BOREHOLES WERE OBSERVED ON THE DATE INDICATED ON THE BORING LOG. INDICATED LEVELS MAY NOT REFLECT THE ACTUAL GROULDWATER. FLUCUATIONS IN GROUNDWATER LEVELS CAN OCCUR DUE TO VARIATIONS IN PRECIPITATION, SEASONS, WATER TABLE FLUCTUATION, ADJACENT CONSTRUCTION ACTIVITY, CONSTRUCTION DEWATERING SYSTEMS AND OTHER FACTORS.
4. REFER TO THE REPORT APPENDICES FOR TEST BORING LOGS.
5. THE STANDARD PENETRATION RESISTANCE, "N", IS DEFINED AS THE NUMBER OF BLOWS OF A 140-LB HAMMER FALLING THROUGH A VERTICAL DISTANCE OF 30 INCHES REQUIRED TO DRIVE A 2-INCH O.D., $1\frac{3}{8}$-INCH I.D. SPLIT SPOON SAMPLER 12 INCHES.
6. REFER TO THE REPORT TEXT FOR MORE DETAILED SOIL STRATUM DESCRIPTIONS AND THE TEST BORING LOGS FOR DETAILED SAMPLE DESCRIPTIONS.
7. SUBSURFACE PROFILES DEPICT THE GENERAL GEOLOGIC CONDITIONS AT THE SITE AND ARE BASED ON INTERPRETATION OF DATA ENCOUNTERED IN THE EXPLORATIONS. LINES REPRESENTING INTERFACES BETWEEN STRATA ON THE PROFILE ARE BASED ON ADJACENT BORINGS. THE BORING STICK SHOWS THE INTERPRETED SEQUENCE OF STRATA ENCOUNTERED AT THAT LOCATION. ACTUAL SOIL CONDITIONS AND INTERFACES BETWEEN EXPLORATIONS MAY VARY SIGNIFICANTLY FROM THOSE INDICATED ON THE PROFILES.

HORIZ. 0 30 60
VERT. 0 5 10

HALEY & ALDRICH

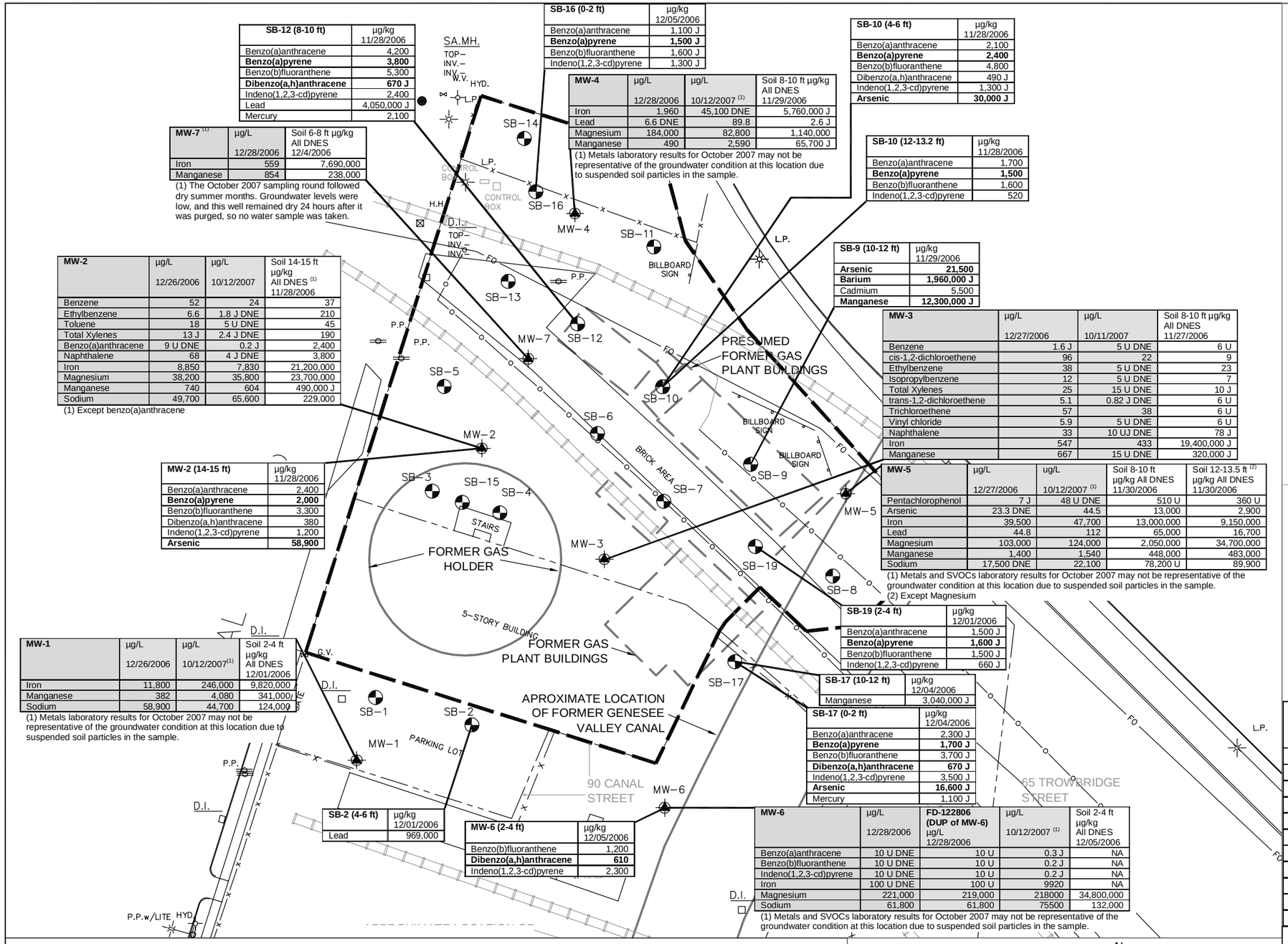
ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SUBSURFACE PROFILE G-G

SCALE: AS SHOWN
JANUARY 2008

FIGURE 5G

G:\PROJECTS\33879\003 REPORT W DUSR\JAN 2008 DRAFT\PROFILES 01-31-2007.DWG



SB-12 (8-10 ft)	µg/kg 11/28/2006
Benzo(a)anthracene	4,200
Benzo(a)pyrene	**3,800**
Benzo(b)fluoranthene	5,300
Dibenzo(a,h)anthracene	**670 J**
Indeno(1,2,3-cd)pyrene	2,400
Lead	4,050,000 J
Mercury	2,100

SB-16 (0-2 ft)	µg/kg 12/05/2006
Benzo(a)anthracene	1,100 J
Benzo(a)pyrene	**1,500 J**
Benzo(b)fluoranthene	1,600 J
Indeno(1,2,3-cd)pyrene	1,300 J

MW-4	µg/L 12/28/2006	µg/L 10/12/2007 (1)	Soil 8-10 ft µg/kg All DNES 11/29/2006
Iron	1,960	45,100 DNE	5,760,000 J
Lead	6.6 DNE	89.8	2.6 J
Magnesium	184,000	82,800	1,140,000
Manganese	490	2,590	65,700 J

(1) Metals laboratory results for October 2007 may not be representative of the groundwater condition at this location due to suspended soil particles in the sample.

SB-10 (4-6 ft)	µg/kg 11/28/2006
Benzo(a)anthracene	2,100
Benzo(a)pyrene	**2,400**
Benzo(b)fluoranthene	4,800
Dibenzo(a,h)anthracene	490 J
Indeno(1,2,3-cd)pyrene	1,300 J
Arsenic	**30,000 J**

MW-7 (1)	µg/L 12/28/2006	Soil 6-8 ft µg/kg All DNES 12/4/2006
Iron	559	7,690,000
Manganese	854	238,000

(1) The October 2007 sampling round followed dry summer months. Groundwater levels were low, and this well remained dry 24 hours after it was purged, so no water sample was taken.

SB-10 (12-13.2 ft)	µg/kg 11/28/2006
Benzo(a)anthracene	1,700
Benzo(a)pyrene	**1,500**
Benzo(b)fluoranthene	1,600
Indeno(1,2,3-cd)pyrene	520

MW-2	µg/L 12/26/2006	µg/L 10/12/2007	Soil 14-15 ft µg/kg All DNES (1) 11/28/2006
Benzene	52	24	37
Ethylbenzene	6.6	1.8 J DNE	210
Toluene	18	5 U DNE	45
Total Xylenes	13 J	2.4 J DNE	190
Benzo(a)anthracene	9 U DNE	0.2 J	2,400
Naphthalene	68	4 J DNE	3,800
Iron	8,850	7,830	21,200,000
Magnesium	38,200	35,800	23,700,000
Manganese	740	604	490,000 J
Sodium	49,700	65,600	229,000

(1) Except benzo(a)anthracene

SB-9 (10-12 ft)	µg/kg 11/29/2006
Arsenic	**21,500**
Barium	**1,960,000 J**
Cadmium	5,500
Manganese	**12,300,000 J**

MW-3	µg/L 12/27/2006	µg/L 10/11/2007	Soil 8-10 ft µg/kg All DNES 11/27/2006
Benzene	1.6 J	5 U DNE	6 U
cis-1,2-dichloroethene	96	22	9
Ethylbenzene	38	5 U DNE	23
Isopropylbenzene	12	5 U DNE	7
Total Xylenes	25	15 U DNE	10 J
trans-1,2-dichloroethene	5.1	0.82 J DNE	6 U
Trichloroethene	57	38	6 U
Vinyl chloride	5.9	5 U DNE	6 U
Naphthalene	33	10 UJ DNE	78 J
Iron	547	433	19,400,000 J
Manganese	667	15 U DNE	320,000 J

MW-2 (14-15 ft)	µg/kg 11/28/2006
Benzo(a)anthracene	2,400
Benzo(a)pyrene	**2,000**
Benzo(b)fluoranthene	3,300
Dibenzo(a,h)anthracene	380
Indeno(1,2,3-cd)pyrene	1,200
Arsenic	**58,900**

MW-5	µg/L 12/27/2006	ug/L 10/12/2007 (1)	Soil 8-10 ft µg/kg All DNES 11/30/2006	Soil 12-13.5 ft (2) µg/kg All DNES 11/30/2006
Pentachlorophenol	7 J	48 U DNE	510 U	360 U
Arsenic	23.3 DNE	44.5	13,000	2,900
Iron	39,500	47,700	13,000,000	9,150,000
Lead	44.8	112	65,000	16,700
Magnesium	103,000	124,000	2,050,000	34,700,000
Manganese	1,400	1,540	448,000	483,000
Sodium	17,500 DNE	22,100	78,200 U	89,900

(1) Metals and SVOCs laboratory results for October 2007 may not be representative of the groundwater condition at this location due to suspended soil particles in the sample.
(2) Except Magnesium

SB-19 (2-4 ft)	µg/kg 12/01/2006
Benzo(a)anthracene	1,500 J
Benzo(a)pyrene	**1,600 J**
Benzo(b)fluoranthene	1,500 J
Indeno(1,2,3-cd)pyrene	660 J

SB-17 (10-12 ft)	µg/kg 12/04/2006
Manganese	3,040,000 J

SB-17 (0-2 ft)	µg/kg 12/04/2006
Benzo(a)anthracene	2,300 J
Benzo(a)pyrene	**1,700 J**
Benzo(b)fluoranthene	3,700 J
Dibenzo(a,h)anthracene	**670 J**
Indeno(1,2,3-cd)pyrene	3,500 J
Arsenic	**16,600 J**
Mercury	1,100 J

MW-1	µg/L 12/26/2006	µg/L 10/12/2007(1)	Soil 2-4 ft µg/kg All DNES 12/01/2006
Iron	11,800	246,000	9,820,000
Manganese	382	4,080	341,000 J
Sodium	58,900	44,700	124,000

(1) Metals laboratory results for October 2007 may not be representative of the groundwater condition at this location due to suspended soil particles in the sample.

SB-2 (4-6 ft)	µg/kg 12/01/2006
Lead	969,000

MW-6 (2-4 ft)	µg/kg 12/05/2006
Benzo(b)fluoranthene	1,200
Dibenzo(a,h)anthracene	**610**
Indeno(1,2,3-cd)pyrene	2,300

MW-6	µg/L 12/28/2006	FD-122806 (DUP of MW-6) µg/L 12/28/2006	µg/L 10/12/2007 (1)	Soil 2-4 ft µg/kg All DNES 12/05/2006
Benzo(a)anthracene	10 U DNE	10 U	0.3 J	NA
Benzo(b)fluoranthene	10 U DNE	10 U	0.2 J	NA
Indeno(1,2,3-cd)pyrene	10 U DNE	10 U	0.2 J	NA
Iron	100 U DNE	100 U	9920	NA
Magnesium	221,000	219,000	218000	34,800,000
Sodium	61,800	61,800	75500	132,000

(1) Metals and SVOCs laboratory results for October 2007 may not be representative of the groundwater condition at this location due to suspended soil particles in the sample.

LEGEND:

- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- PARCEL BOUNDARY LINE
- APPROXIMATE LIMITS OF FORMER MUNICIPAL GAS LIGHT COMPANY MGP
- RAILROAD

Soil = White
Groundwater = Gray

DNES = DOES NOT EXCEED PART 375 SOIL CLEANUP OBJECTIVE FOR RESTRICTED RESIDENTIAL USE

DNE = DOES NOT EXCEED NYSDEC TOGS 1.1.1 CLASS GA WATER QUALITY STANDARDS

NA = INDICATES NOT APPLICABLE

J = THE ANALYTE WAS POSITIVELY IDENTIFIED; THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

U = THE ANALYTE WAS ANALYZED FOR BUT WAS NOT DETECTED ABOVE THE REPORTED SAMPLE QUANTITATION LIMIT.

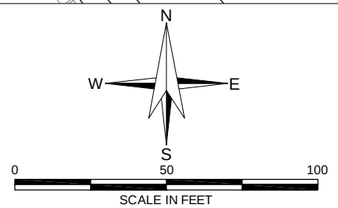
UJ = THE ANALYTE WAS NOT DETECTED ABOVE THE REPORTED SAMPLE QUANTITATION LIMIT. HOWEVER, THE REPORTED QUANTITATION LIMIT IS APPROXIMATE AND MAY OR MAY NOT REPRESENT THE ACTUAL LIMIT OF QUANTITATION NECESSARY TO ACCURATELY AND PRECISELY MEASURE THE ANAYLYTE IN THE SAMPLE.

NYSDEC TOGS 1.1.1 Class GA Water Quality Standards	ug/L	NYSDEC TOGS 1.1.1 Class GA Water Quality Standards	ug/L
Benzene	1	Pentachlorophenol	1
cis-1,2-dichloroethene	5	Arsenic	25
Ethylbenzene	5	Barium	1000
Isopropylbenzene	5	Cadmium	5
Toluene	5	Chromium	50
Total Xylenes	5	Copper	200
trans-1,2-dichloroethene	5	Iron	300
Trichloroethene	5	Lead	25
Vinyl chloride	2	Magnesium	35,000
Benzo(a)anthracene	0.002	Manganese	300
Benzo(b)fluoranthene	0.002	Mercury	0.7
Chrysene	0.002	Nickel	100
Indeno(1,2,3-cd)pyrene	0.002	Sodium	20,000
Naphthalene	10	Zinc	2000

6 NYCRR Part 375 Soil Cleanup Objectives	Restricted Residential Use (µg/kg)	Restricted Commercial Use (µg/kg)
Benzo(a)anthracene	1,000	5,600
Benzo(a)pyrene	1,000	1,000
Benzo(b)fluoranthene	1,000	5,600
Dibenzo(a,h)anthracene	330	560
Indeno(1,2,3-cd)pyrene	500	5,600
Arsenic	16,000	16,000
Barium	400,000	400,000
Cadmium	4,300	9,300
Lead	400,000	1,000,000
Manganese	2,000,000	10,000,000
Mercury	810	2,800

NOTES:

1. WHERE SOIL CONSTITUENTS ARE SHOWN IN BOLD PRINT, THE ANALYTE EXCEEDS BOTH THE RESTRICTED RESIDENTIAL AND RESTRICTED COMMERCIAL SOIL CLEANUP OBJECTIVES.
2. LOCATIONS OF SOIL BORINGS AND MONITORING WELLS WERE SURVEYED BY PARRONE ENGINEERING
3. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES AND FEATURES DERIVED FROM PARRONE ENGINEERING DRAWING 6192.DWG.
4. METALS AND SVOCS LABORATORY RESULTS FOR OCTOBER 2007 MAY NOT BE REPRESENTATIVE OF THE GROUNDWATER CONDITION AT THIS LOCATION DUE TO SUSPENDED SOIL PARTICLES IN THE SAMPLES FOR MW-1, MW-4, MW-5, AND MW-6.



HALEY & ALDRICH

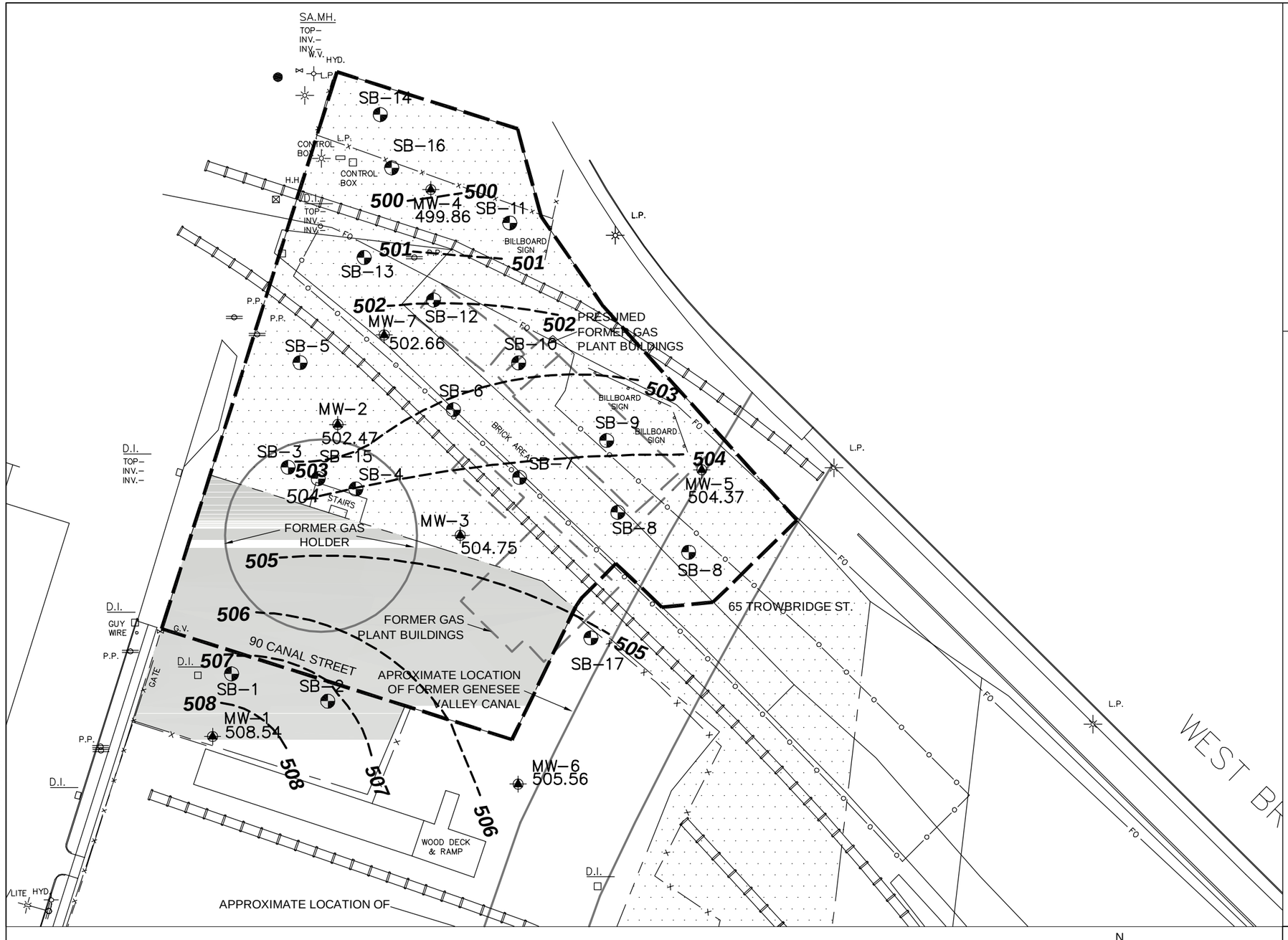
ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SITE PLAN SHOWING SOIL AND WATER QUALITY EXCEEDANCES 2006 AND 2007

SCALE: AS SHOWN
JANUARY 2008

FIGURE 6

G:\PROJECTS\33879\003 REPORT W DJSR\JAN 2008 DRAFT\FIGURE 6 EXCEEDANCES V2.DWG



LEGEND:

- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- APPROXIMATE LIMITS OF FORMER MUNICIPAL GAS LIGHT COMPANY MGP
- RAILROAD
- 504.75 GROUNDWATER ELEVATION DECEMBER 2006
- 504 GENERALIZED GROUNDWATER CONTOURS DECEMBER 2006
- 65 TROWBRIDGE STREET PARCEL
- 90 CANAL STREET PARCEL
- PARCEL BOUNDARY LINE

NOTES:

1. LOCATIONS OF SOIL BORINGS AND MONITORING WELLS WERE SURVEYED BY PARRONE ENGINEERING

2. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES AND FEATURES DERIVED FROM PARRONE ENGINEERING DRAWING 6192.DWG

HALEY & ALDRICH

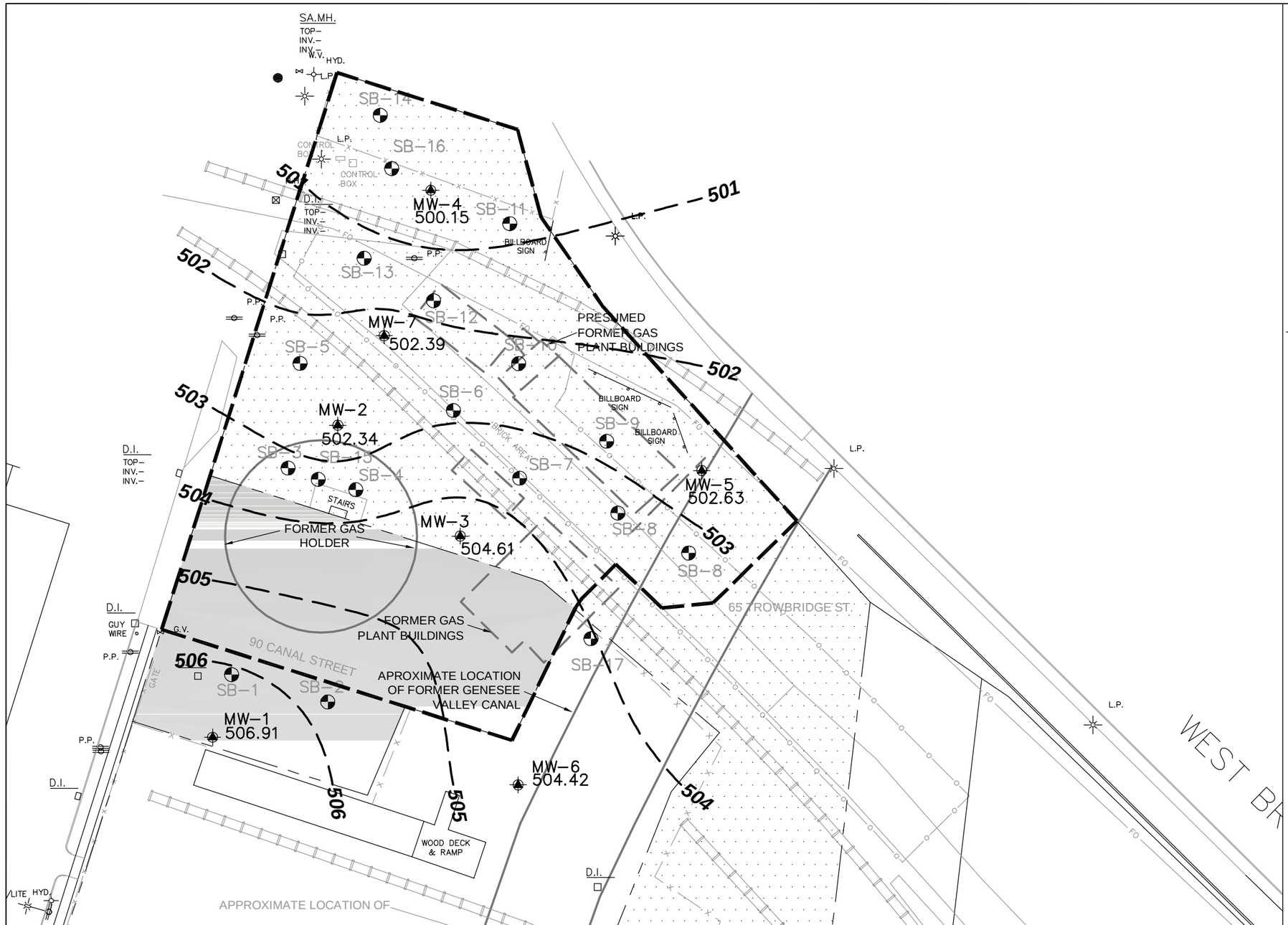
ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SITE PLAN SHOWING GROUNDWATER ELEVATIONS - DECEMBER 2006

SCALE: AS SHOWN
JANUARY 2008

FIGURE 7A

G:\PROJECTS\338791003 REPORT W DUSR\JAN 2008 DRAFT\FIGURE 7A GW V3.DWG



LEGEND:

- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- APPROXIMATE LIMITS OF FORMER MUNICIPAL GAS LIGHT COMPANY MGP
- RAILROAD
- 504.61 GROUNDWATER ELEVATION OCTOBER 2007
- 504 GENERALIZED GROUNDWATER CONTOURS OCTOBER 2007
- 65 TROWBRIDGE STREET PARCEL
- 90 CANAL STREET PARCEL
- PARCEL BOUNDARY LINE

NOTES:

1. LOCATIONS OF SOIL BORINGS AND MONITORING WELLS WERE SURVEYED BY PARRONE ENGINEERING

2. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES AND FEATURES DERIVED FROM PARRONE ENGINEERING DRAWING 6192.DWG

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SCALE IN FEET

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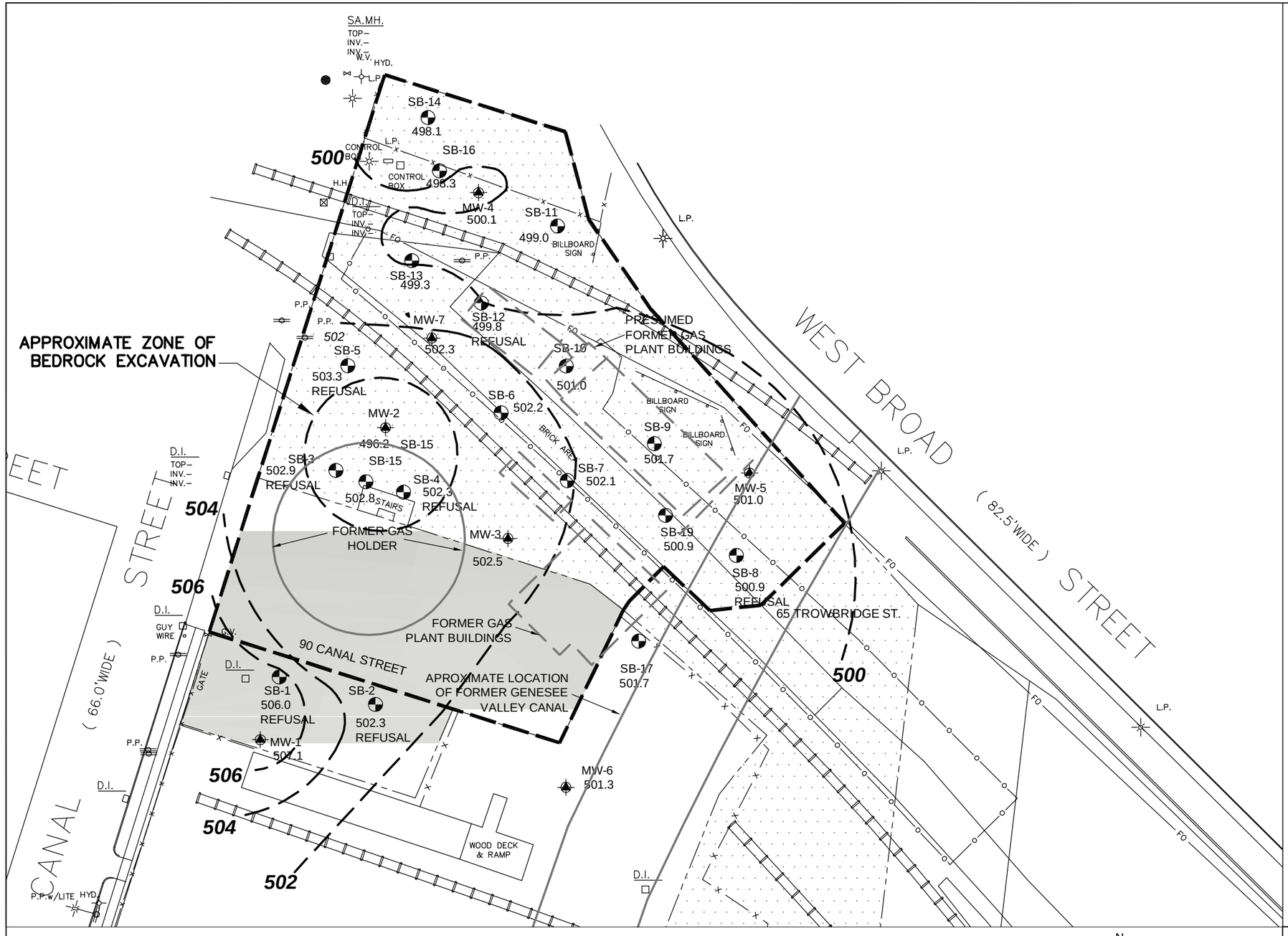
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SITE PLAN SHOWING GROUNDWATER ELEVATIONS - OCTOBER 2007

SCALE: AS SHOWN
JANUARY 2008

FIGURE 7B

G:\PROJECTS\33879\003 REPORT W DUSR\JAN 2008 DRAFT\FIGURE 7B GW V3.DWG



LEGEND:

- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- APPROXIMATE LIMITS OF FORMER MUNICIPAL GAS LIGHT COMPANY MGP
- RAILROAD
- 501.7 TOP OF BEDROCK ELEVATION
- 502 GENERALIZED TOP OF BEDROCK CONTOURS
- 65 TROWBRIDGE STREET PARCEL
- 90 CANAL STREET PARCEL
- PARCEL BOUNDARY LINE

NOTES:

1. LOCATIONS OF SOIL BORINGS AND MONITORING WELLS WERE SURVEYED BY PARRONE ENGINEERING.

2. BASE PLAN ILLUSTRATING EXISTING SITE STRUCTURES AND FEATURES DERIVED FROM PARRONE ENGINEERING DRAWING 6192.DWG

3. WHERE ROCK IS ESTIMATED FROM AUGER OR SPOON REFUSAL THE ELEVATION IS DENOTED "REFUSAL"

HALEY & ALDRICH

ROCHESTER GAS & ELECTRIC
CANAL STREET FORMER MGP SITE
ROCHESTER, NEW YORK

SITE PLAN SHOWING BEDROCK ELEVATIONS

SCALE: AS SHOWN
JANUARY 2008

FIGURE 8

G:\PROJECTS\138779\003 REPORT W DUS\RJAN 2008 DRAFT\BEDROCK V3.DWG

APPENDIX A

Geophysical Report

Geomatrix

November 27, 2006

Mr. Steve Mullin
Rochester Gas & Electric Corp.
89 East Avenue, 4th Floor
Rochester, NY 14649-0001

Subject: Geophysical Survey Report
Canal Street Former MGP Site
Rochester, New York

Dear Mr. Mullin:

1.0 INTRODUCTION

This report summarizes the methods and findings of the geophysical survey conducted by Geomatrix Consultants, Inc. at the Rochester Gas and Electric (RG&E) Canal Street, Rochester former manufactured gas plant (MGP) Site (the "Site"), located in Rochester, NY.

All surface remnants of the former MGP site have been removed and the site is currently vacant land and a parking lot adjacent to a multi-story residential apartment building. The parking lot is located south of the apartment building and the vacant land (apparently used primarily for walking dogs) is located north of the building.

The geophysical survey was performed by Geomatrix on November 19, 2006. The primary objective was to identify the location of the former gas holder. The secondary objective was to geophysically characterize the site to explore for any anomalies of potential environmental significance. The survey was performed utilizing a suite of geophysical tools: Time domain electromagnetics (EM61); frequency domain electromagnetics (EM31) and ground penetrating radar (GPR). All vehicles were removed from the survey area with the exception of several in the southwestern portion of the parking lot.

The geophysical results presented herein are intended to serve as a guide to focus any future intrusive investigations, if warranted. Additional collaborative data are generally necessary to confirm geophysical anomalies.

2.0 METHODOLOGY

A reference grid was installed to facilitate data acquisition along lines spaced three feet apart. The grid was marked with red and white spray paint with select coordinates labeled to facilitate

reoccupation of stations if necessary. The grid was installed such that coordinate 50N,0E was established at the southwest corner of the apartment building.

2.1 Electromagnetic EM61 Survey Methodology

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

EM61 (photo not from this site)

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

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

at a rate of approximately 2 measurements per foot along the survey lines which were spaced 3 feet apart.

2.2 Electromagnetic EM31 Survey Methodology

A Geonics EM31 Terrain Conductivity meter was used to measure and record the quadrature component (ground conductivity) and the inphase component of the EM field along the survey lines. The quadrature component of the EM field is a measurement of the apparent ground conductivity. The inphase component of the EM field is sensitive to metallic objects. Comparison of the quadrature component of the EM field data (expressed in units of milliSiemens per meter (mS/m)) and the inphase component data (expressed in units of parts per thousand (ppt)) results in increased anomaly definition. The character of the EM response, low or high, is partially dependent on the orientation of the buried target relative to the orientation of the EM31 device during data acquisition, and the survey direction. A buried metal pipe, for example, will exhibit a high valued response when the trend of the pipe is parallel to the survey direction. Alternatively, when a survey line crosses a buried metal pipe whose trend is perpendicular to the survey direction, it is characterized by a low response. Similarly, other complex buried metal anomalies are indicated by a coupling of a high and low response.

EM31 with GPS (photo not from this site)

All readings were taken with the instrument oriented parallel to the direction of travel, in the vertical dipole mode and with the instrument at waist height. The depth of penetration with the instrument in this configuration is approximately 12 to 15 feet below ground surface. Data were collected and stored in a solid state memory data logger during the survey. The data logger was interfaced to a portable computer and the data were transferred to a floppy disk for subsequent processing and interpretation. A survey base station was established on-site and was revisited

throughout the survey to check for instrument drift and malfunction. No significant drift or malfunction was observed.

The terrain conductivity and inphase data were initially edited and then plotted as profile lines for interpretation. Contour maps of the data were then constructed and utilized for final interpretation. The geophysical data are presented in final form as a series of color contour maps. The color maps allow for an illustration of detected anomalies that are associated with conductive materials such as buried metals, wastes, fill, utilities, and changes in soil texture and/or moisture content.

2.3 Ground Penetrating Radar Survey Methodology

Ground penetrating radar works on the principle of inducing high frequency radio waves into the earth and recording the energy that is reflected back from depth. Depth of penetration is dependent on the transmitting frequency, the dielectric constant of the subsurface material and the electrical conductivity of the subsurface material and its pore fluid (i.e., depth of penetration is reduced in fine grained soils).

GPR equipment (photo not from this site)

GPR reflections occur at interfaces between different materials. The magnitude and character of the reflections are dependent on the geometry of the reflecting interface and the change in the dielectric constant of the materials across that interface. A common misconception concerning GPR data that should be noted is that a GPR profile does not represent a 1-dimensional slice of the subsurface. Rather, as radar energy comes from a 3-dimensional cone of material beneath the GPR transducer, features outside of the vertical line beneath the transducer may occur in a spatially incorrect position. For example, a point source (brick, cobble, etc) in the subsurface will exhibit a response similar in appearance to a hyperbola or inverted "U" on the radar profile. These hyperbolas are diffraction events from point sources in the subsurface. As the radar unit passes over the object, the radar wave travel time decreases until the radar unit is directly above the object. As the radar unit continues past the object, the travel time increases thereby forming a hyperbolic shaped reflection.

3.0 RESULTS

The results of the geophysical survey are presented in Figure 1 through Figure 7. The color bar to the right of the maps indicates the colors associated with the instrument response. For each EM data set, two figures are presented, both with and without a historic map overlay provided by RG&E.

The EM61 data for this Site are presented in Figures 1 and 2. Areas suspected to be free of buried metals are shown as color shades of light blue. All areas exhibiting a response greater than background (0 to 20 mVolts) likely contain surface or buried metals. These areas are depicted in shades of dark blue through yellow on the figures. The existing railroad tracks were not crossed with the EM61 due to the potential for instrument damage. The brushy area to the north of the site was not surveyed with the EM61 due to inaccessibility. With the exception of the southern parking lot area, numerous buried metal anomalies are observed scattered throughout the site. None of these anomalies appear to correlate with prior MGP features. Eight linear anomalies are observed in the north central portion of the survey area. These are shown as a linear EM high response in shades of light blue through yellow. These linear anomalies are likely buried utilities and may or may not be related to former MGP activities.

The EM31 conductivity and inphase data are presented in Figures 3 through 6 (again, with and without the historic feature map overlay). As expected, the quality of the EM31 data relative to the EM61 is poor. The EM31 was used primarily to provide coverage in the northern portion of the survey are where dense brush precluded the acquisition of EM61 data. The most notable anomaly in the EM31 data set is the conductivity and inphase high observed in the northern (brushy) area (300N to 350N). This type of response is typical of a large buried object such as a building foundation. An alternative possibility would include an area of electrically conductive fill material such as railroad ballast or slag.

A time slice of the GPR data are presented in Figure 7. No mappable GPR anomalies were detected (except as discussed below). GPR was run in the parking lot to the south of the building and in the field immediately north of the building (south of the railroad tracks). Buried utilities were detected in the southern parking lot and these were marked in the field with spray paint. The location of the electric lines running to the automatic gate was clearly observed however the response of the drain pipe leaving the storm grate exhibited a weak response and the location is suspect.

4.0 LIMITATIONS

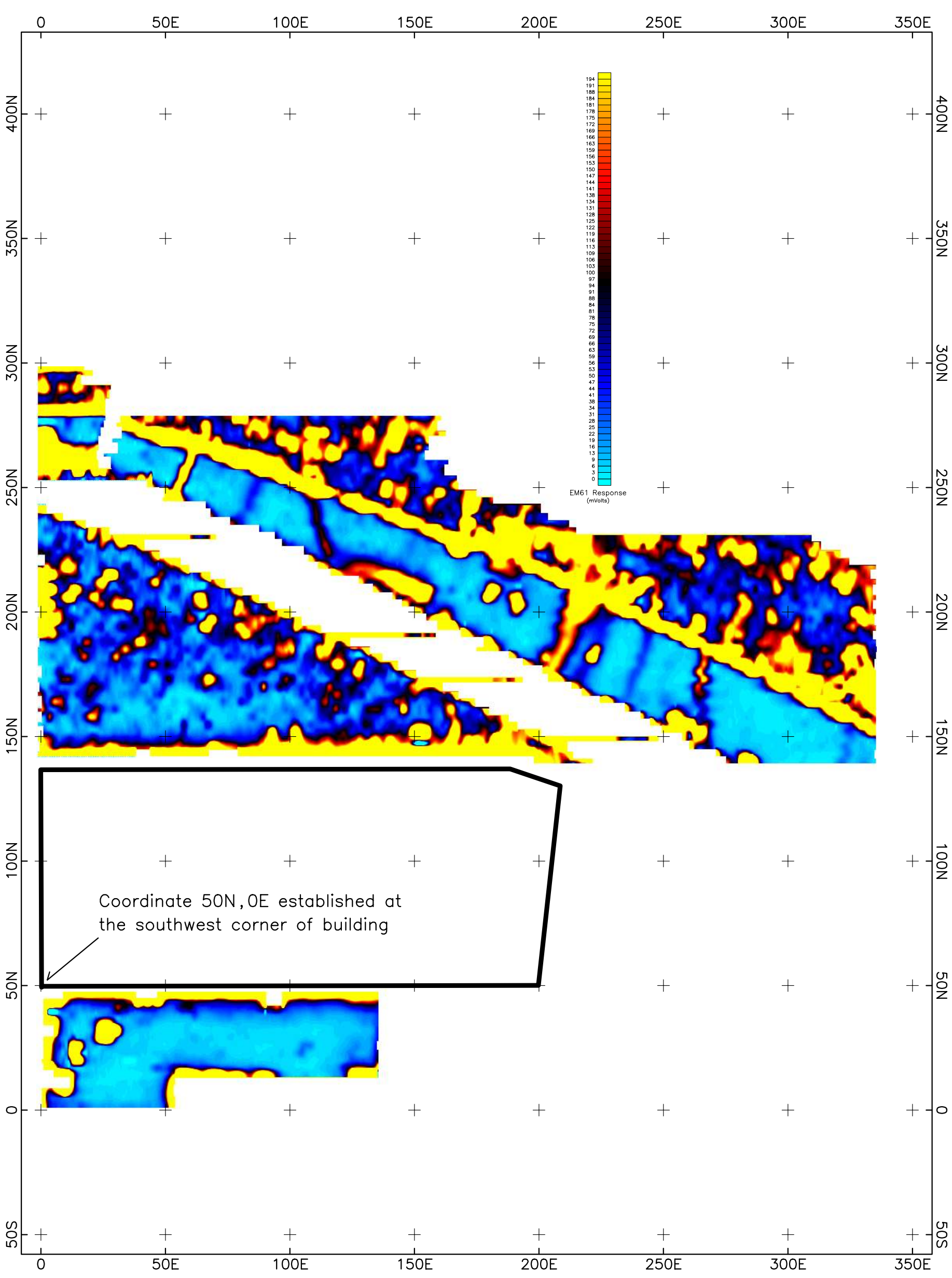
The geophysical methods used during this survey are established, indirect techniques for non-invasive subsurface reconnaissance exploration. As these instruments utilize indirect methods, they are subject to inherent limitations and ambiguities. All geophysical methods utilize

interpretative techniques which can be significantly impacted by varying site conditions. Anomalies can only be identified if they show recognizable patterns against data representative of background or natural conditions. Therefore, where possible, confirmation of any geophysical anomalies identified or interpreted should be sought through the use of historical aerial photography, test pit and/or borehole information.

We trust the information contained in this report is sufficient for your present needs. Please do not hesitate to contact us if you have any questions or require additional information.

Sincerely yours,
GEOMATRIX CONSULTANTS, INC.

John Luttinger
Senior Geophysicist



Grid North

Scale 1:480

25 0 25 50

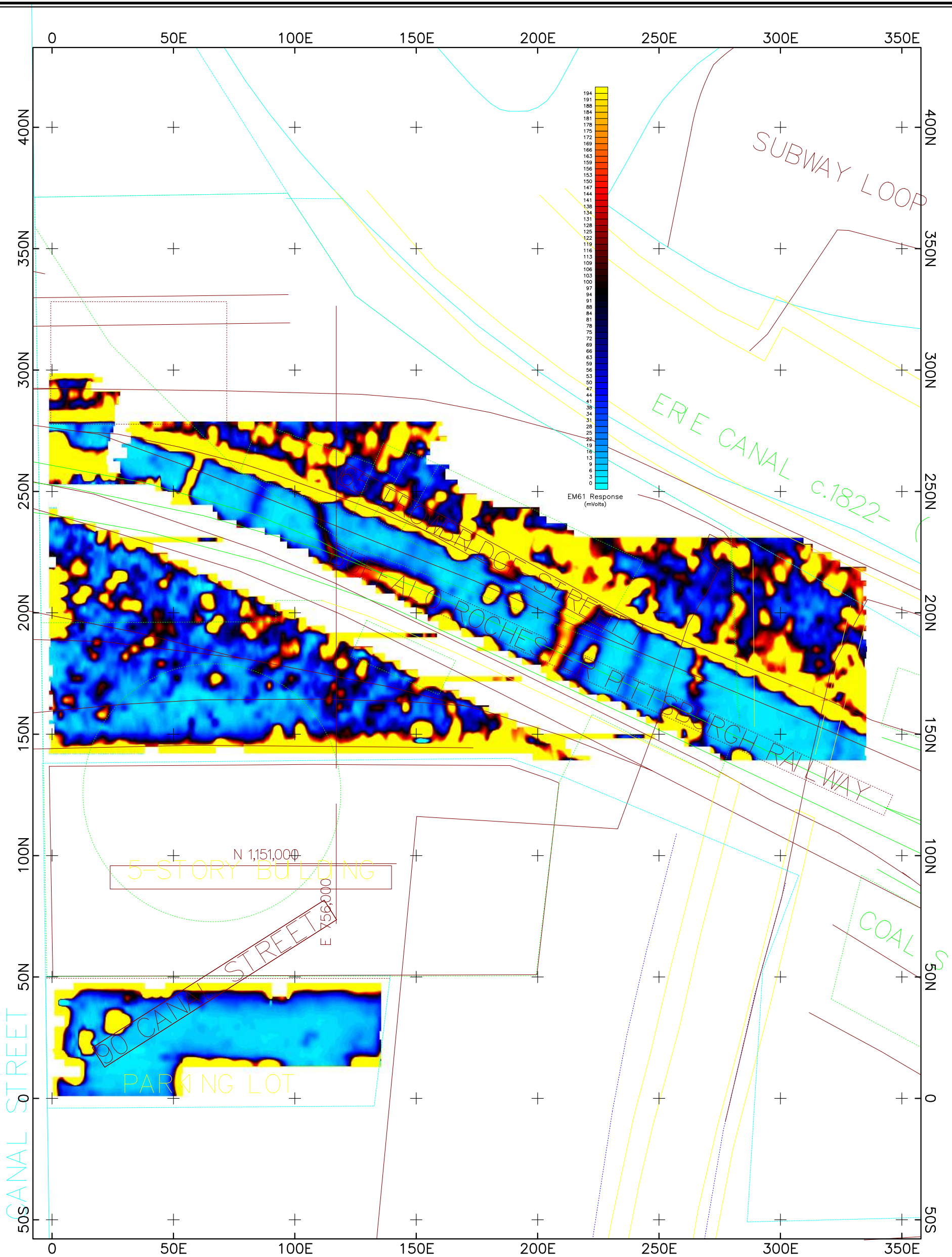
(feet)

Figure 1

Geophysical Survey Results
Color Contours of EM61 Data
(mVolts)

Canal Street, Rochester Former MGP Site
Rochester Gas and Electric Corp

Geomatrix (716) 565-0624



Grid North

Scale 1:480

25 0 25 50

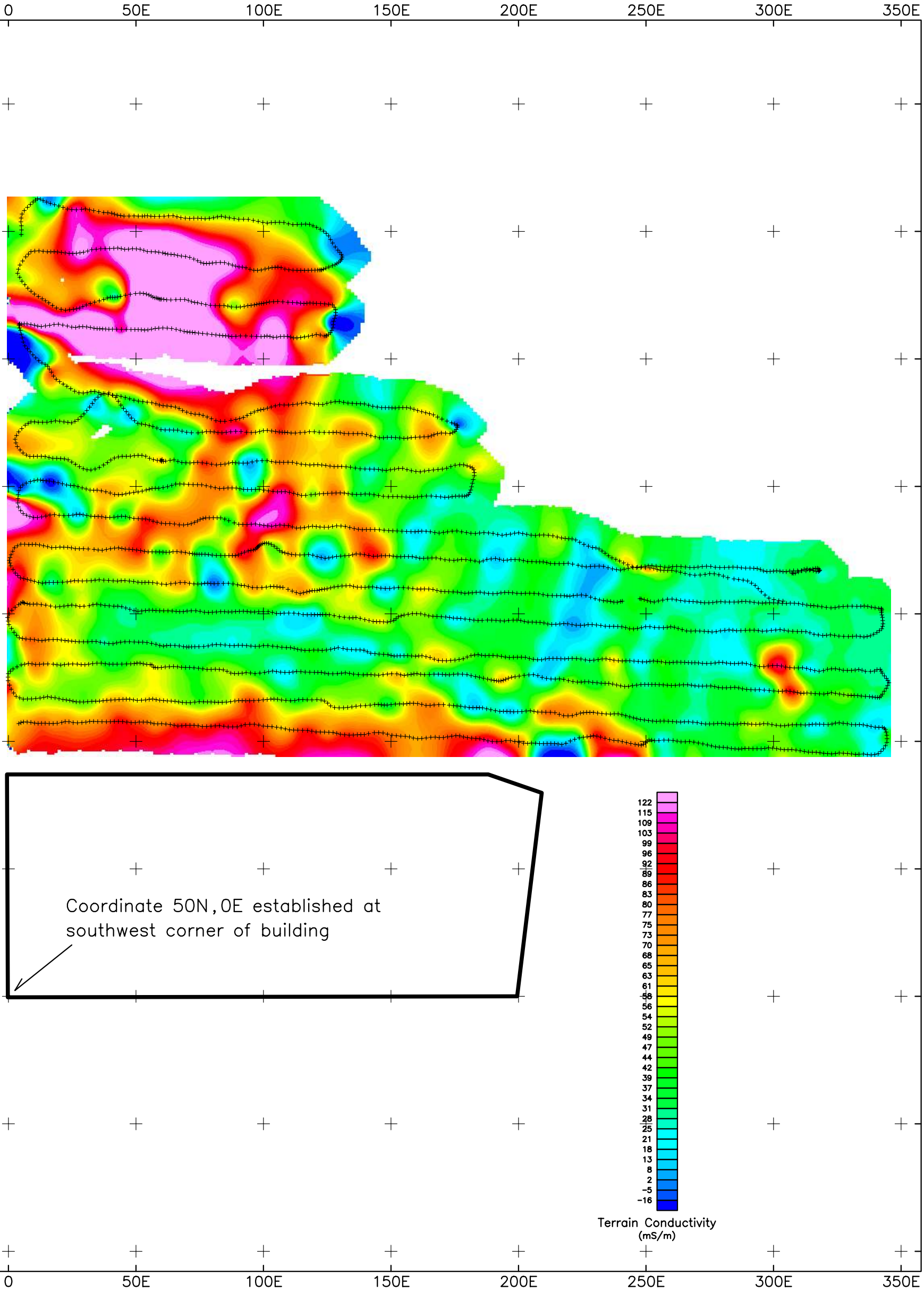
(feet)

Figure 2

Geophysical Survey Results
Color Contours of EM61 Data
with Historic Map Overlay

Canal Street, Rochester Former MGP Site
Rochester Gas and Electric Corp

Geomatrix (716) 565-0624



Grid North

Scale 1:480

25 0 25 50

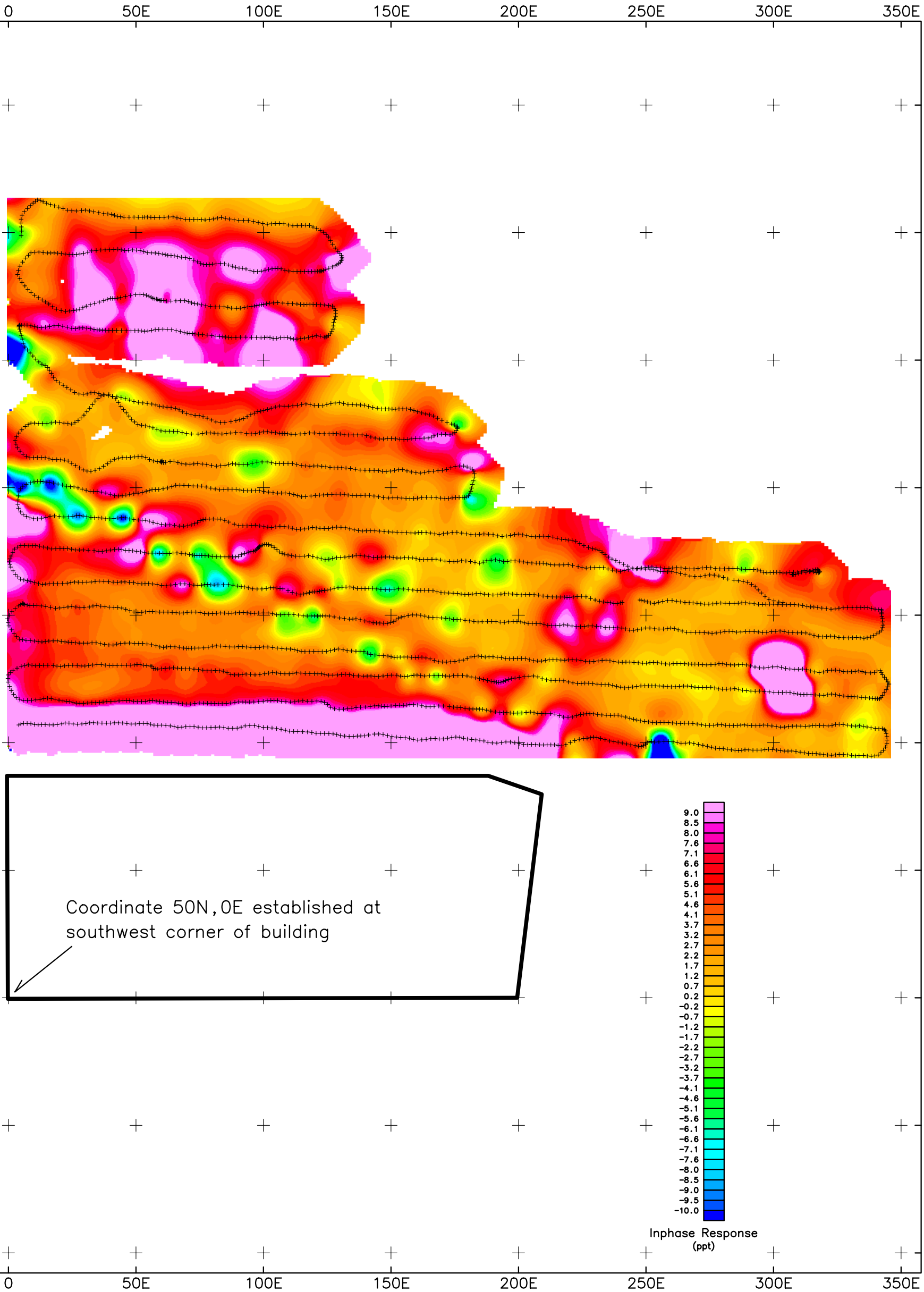
(feet)

Figure 3

Geophysical Survey Results
Color Contours of EM31 Data
Terrain Conductivity (mS/m)

Canal Street, Rochester Former MGP Site
Rochester Gas and Electric Corp.

Geomatrix (716) 565-0624



Grid North

Scale 1:480

25 0 25 50

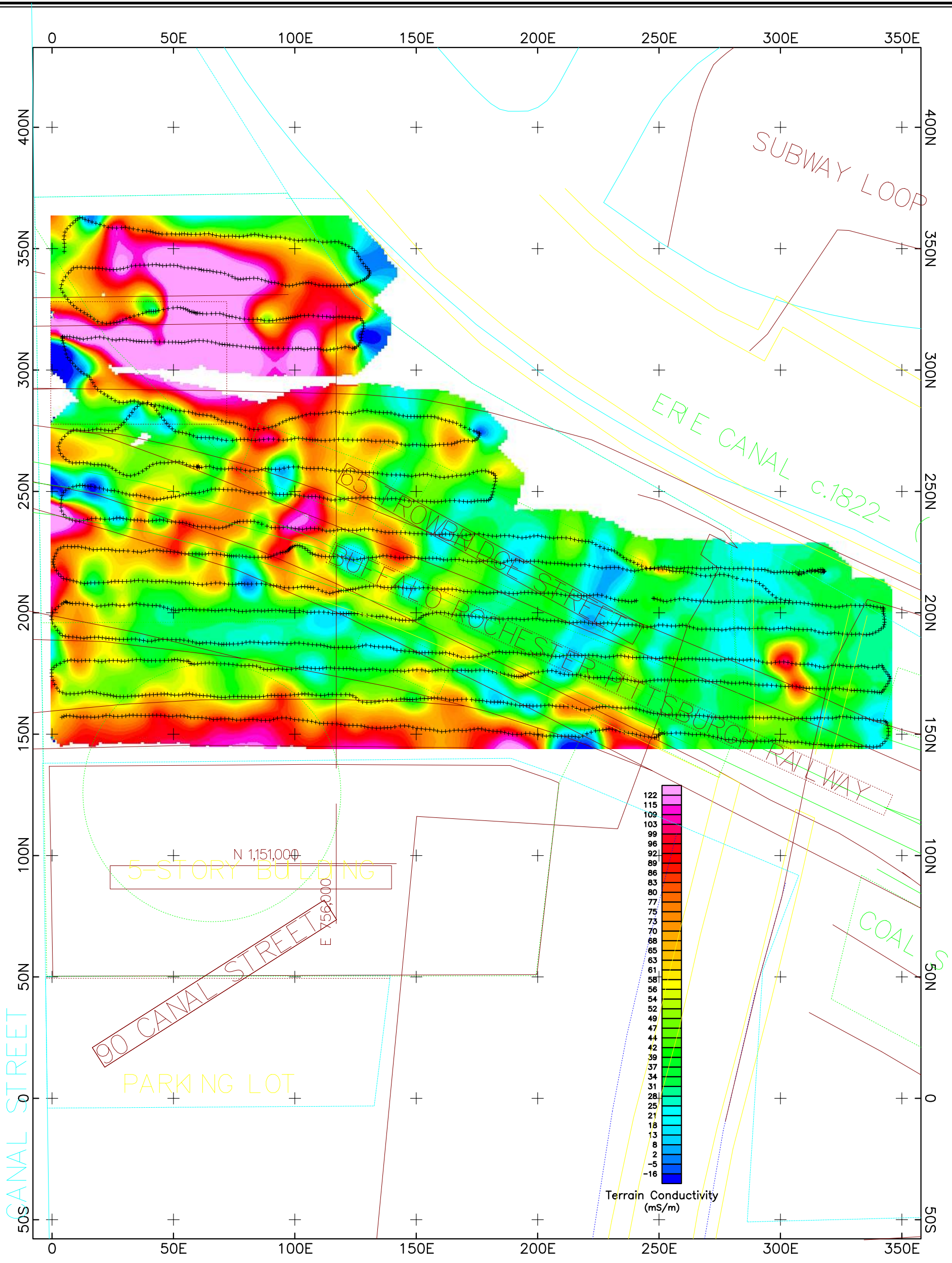
(feet)

Figure 4

Geophysical Survey Results
Color Contours of EM31 Data
Inpase Response (ppt)

Canal Street, Rochester Former MGP Site
Rochester Gas and Electric Corp.

Geomatrix (716) 565-0624



Grid North

Scale 1:480

25 0 25 50

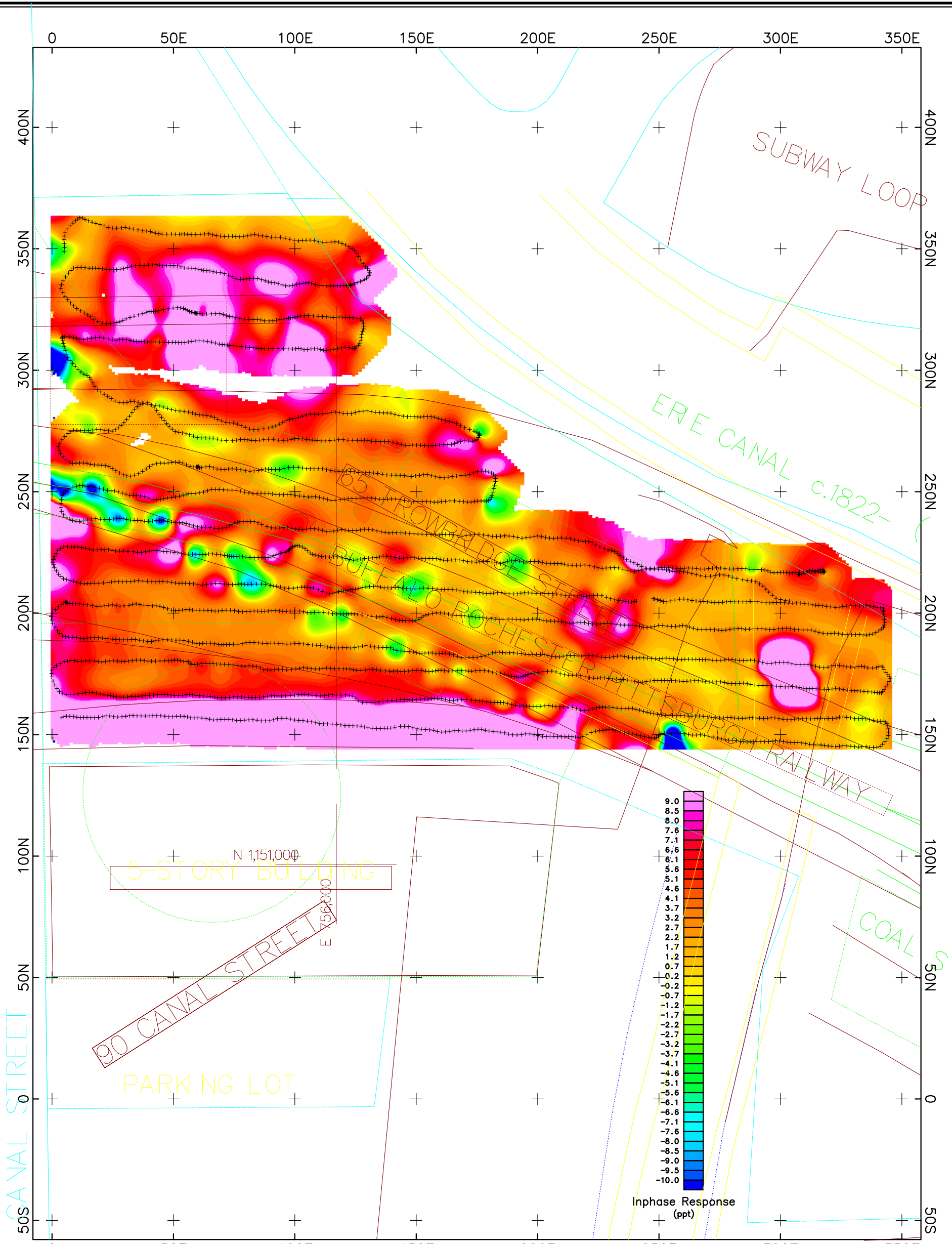
(feet)

Figure 5

Geophysical Survey Results
Color Contours of EM31 Data
Terrain Conductivity (mS/m)

Map with Historic Overlay
Canal Street, Rochester Former MGP Site
Rochester Gas and Electric Corp.

Geomatrix (716) 565-0624



Grid North

Scale 1:480

25 0 25 50

(feet)

Figure 6

Geophysical Survey Results
Color Contours of EM31 Data
Inpase Response (ppt)

Map with Historic Overlay
Canal Street, Rochester Former MGP Site
Rochester Gas and Electric Corp.

Geomatrix (716) 565-0624

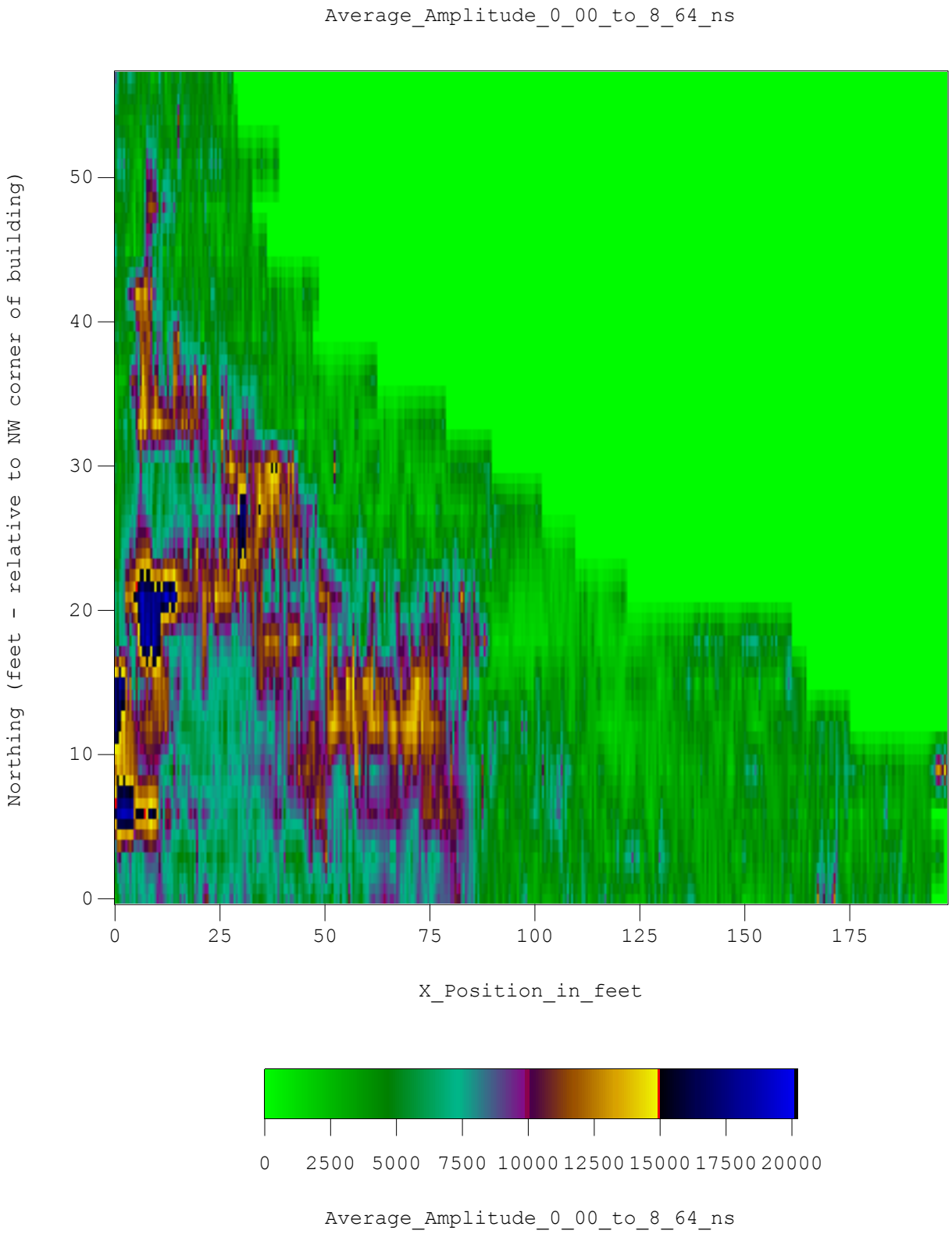


Figure 7 GPR Time Slice.
Canal St Former MGP Site

APPENDIX B

Boring Logs and Well Installation Reports

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-1

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start December 1, 2006
Finish December 1, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum 513.5
Location See Plan
N 1,150,979
E 1,404,283

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0				NO WELL INSTALLED	513.2		-BITUMINOUS PAVEMENT-											
	3 4 4	S1 8/18	0.5 2.0		0.3	SM	Loose, black to dark brown, silty SAND with gravel (SM), 25% coal particles, trace brick, concrete and wood, no odor, moist.	PID = 0.0 ppm	5	10	5	20	15	20				
	2 3 3 4	S2 12/24	2.0 4.0			SM	Loose, brown to gray to black, silty SAND (SM), coal particles, ash, clinker, no odor, moist. -FILL-	PID = 0.0 ppm										
					509.3													
	1 1 2 2	S3 16/24	4.0 6.0		4.2	OL/OH	Soft, dark brown, ORGANIC SILT (OL/OH), trace ash in top 4 in., trace organic fibers, organic odor, moist. -ORGANIC DEPOSITS-	PID = 0.0 ppm										
5					507.5													
	7 12 100/3	S4 6/15	6.0 7.3		6.0	SM	Medium dense, gray-brown, silty SAND with gravel (SM), slight organic odor, wet. Auger refusal at 7.5 ft. on rock. -LACUSTRINE-	PID = 0.6 ppm	10	5	5	15	40	25				
					506.0 7.5		Bottom of exploration at 7.5 ft.											

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
12/01/06	-	-	-	-	6 +/-

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

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary	
Overburden (lin. ft.)	7.5
Rock Cored (lin. ft.)	-
Samples	4S

Boring No. SB-1

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-2

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start December 1, 2006
Finish December 1, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 513.7
Datum
Location See Plan
N 1,150,981
E 1,404,338

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					513.4		-BITUMINOUS PAVEMENT-											
	11 5 3	S1 4/18	0.5 2.0		0.3	SM	Medium dense, silty SAND with gravel (SM), slight weathered petroleum odor, dry.	PID = 1.0 ppm	10	25	10	20	15	20				
	5 4 3 3	S2 14/24	2.0 4.0			SM	Loose, dark brown, silty SAND with gravel (SM), 5% brick, trace coal particles, no odor, moist. -FILL-	PID = 0.0 ppm	10	10	5	15	20	35				
	3 5 4 4	S3 14/24	4.0 6.0			SM	Loose, dark brown, silty SAND with gravel (SM), 20% coal, 20% ash, present as occasional coal and ash layers up to 2 in. thick, 5% clinker, no odor, moist.	PID = 0.7 ppm										
5																		
	1 1 2 2	S4 11/24	6.0 8.0			SM	Very loose, dark brown, silty SAND (SM), no odor, wet.	PID = 0.0 ppm		10	20	15	20	35				
	9 13 13 16	S5 12/24	8.0 10.0	NO WELL INSTALLED	505.2 8.5	SM	Loose, dark brown, silty SAND with gravel (SM), no odor, wet.	PID = 0.0 ppm										
						SM	Medium dense, tan, silty SAND (SM), no odor, wet.		5	5		10	45	35				
10	10 38 100/5	S6 12/17	10.0 11.4			SM	Very dense, tan, silty SAND (SM), no odor, wet. -LACUSTRINE-	PID = 0.0 ppm										
					502.5 11.2 502.3 11.4		Split spoon refusal with 2 in. weathered rock in tip. -WEATHERED BEDROCK- Bottom of exploration at 11.4 ft.											

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
12/01/06	-	-	-	-	~6.1

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 11.4
Rock Cored (lin. ft.) -
Samples 6S

Boring No. SB-2

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-3

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 27, 2006
Finish November 27, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 512.9
Datum
Location See Plan
N 1,151,097
E 1,404,277

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	7 8 5 7	S1 12/24	0.0 2.0	NO WELL INSTALLED		SM	Medium dense, gray-brown to brown, silty SAND (SM), 20% coal particles, 5% furnace brick, trace ceramic, no odor, dry. -FILL-	PID = 0.0 ppm		10	10	10	20	25				
	5 4 3 3	S2 8/24	2.0 4.0			SM	Loose, gray-brown to brown, silty SAND (SM), coal particles, furnace brick, trace ceramic, no odor, dry.											
5	2 2 1 1	S3 14/24	4.0 6.0			SM	Very loose, yellow-brown, silty SAND with gravel (SM), 5% coal particles, trace ash, no odor, wet.	PID = 0.0 ppm		15	10	10	30	30				
	3 2 1 1	S4 12/24	6.0 8.0			SM	Very loose, yellow-brown, silty SAND (SM), 10% clinker, 10% coal, 5% brick, trace ash, no odor, wet.	PID = 0.0 ppm		10	10	10	20	25				
	2 3 4 5	S5 10/24	8.0 10.0			SM	Loose, yellow-brown, silty SAND with gravel (SM), 10% clinker, 10% coal, 5% brick, trace ash, no odor, wet.	PID = 0.0 ppm	10	10	10	5	15	25				
10	~~100/2~~	~~S6~~ 2/2	~~10.0~~ 10.2		502.9 10.0 502.2 10.7		Highly weathered rock fragments, split-spoon refusal at 10.2 ft., auger refusal at 10.7 ft. -WEATHERED BEDROCK- Bottom of exploration at 10.7 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
G	Geoprobe

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary	
Overburden (lin. ft.)	10.7
Rock Cored (lin. ft.)	-
Samples	6S

Boring No. SB-3

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-4

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 27, 2006
Finish November 27, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 513.2
Datum
Location See Plan
N 1,151,097
E 1,404,316

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2	S1	0.0		513.1	GP	-TOPSOIL-											
	6	15/24	2.0		0.1	SM	Loose, gray, poorly-graded GRAVEL with sand (GP), no odor, dry.	PID = 0.0 ppm	20	40	15	10	10	5				
	9				512.9		Medium dense, black to dark brown, COAL particles 50%, 35% silty sand (SM), 10% clinker fragments and particles, 5% brick fragments, no odor, dry.											
	13				0.3													
	2	S2	2.0			SM	Medium dense, dark gray-brown, silty SAND with gravel (SM), 10% coal particles, 5% brick particles, trace ash and ceramic, slight organic odor, moist.	PID = 0.0 ppm		15	5	10	20	35				
	5	15/24	4.0															
	7																	
	10																	
	1	S3	4.0			SM	Medium dense, dark gray-brown, silty SAND with gravel (SM), coal particles, brick particles, trace ash and ceramic, slight organic odor, moist.	PID = 0.0 ppm										
5	2	16/24	6.0				-FILL-											
	1																	
	2																	
	1	S4	6.0			SM	Medium dense, dark gray-brown, silty SAND with gravel (SM), coal particles, trace brick, ash and ceramic, slight organic odor, moist, brown from 7.7 ft. to 8.0 ft.	PID = 0.0 ppm										
	2	14/24	8.0															
	2																	
	2																	
	1	S5	8.0	NO WELL INSTALLED		SM	Similar to S4 except wet at approximately 9.7 ft.	PID = 0.0 ppm										
	2	15/24	10.0															
	1																	
10	5																	
	~~100/4~~	~~S6~~	~~10.0~~			SM	Similar to S5 with 2 in. layer of tan ash particles and specks at 10.0 ft., dark gray, silty SAND 10.2 ft. to 10.3 ft., tan concrete in split-spoon tip.	PID = 0.0 ppm										
		4/24	10.3		502.3		Note: auger to 10.9 ft. through concrete, auger refusal at 10.9 ft.											
					10.9		Bottom of exploration at 10.9 ft.											

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/27/06	-	-	-	-	9.7

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 10.7
Rock Cored (lin. ft.) -
Samples 6S

Boring No. SB-4

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-5

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 27, 2006
Finish November 27, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 512.8
Datum
Location See Plan
N 1,151,154
E 1,404,265

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 2 2 2	S1 3/24	0.0 2.0			SM	Very loose, dark brown to black, silty SAND with gravel (SM), 10% coal particles, no odor, dry.	PID = 0.0 ppm	5	25	5	10	25	20				
	1 3 4 6	S2 4/24	2.0 4.0			SM	Similar to S1, excpet loose.	PID = 0.3 ppm										
	2 3 3 3	S3 14/24	4.0 6.0		507.8	SM	Similar to S1. -FILL-	PID = 0.0 ppm										
5					5.0	SM	Loose, brown to yellow-brown, silty SAND (SM), no odor, moist.			10	10	10	25	45				
	2 2 3 4	S4 13/24	6.0 8.0			SM	Similar to S3 (from 5.0 ft. to 6.0 ft.).	PID = 0.0 ppm										
	9 16 100/6	S5 15/18	8.0 9.5	NO WELL INSTALLED	503.3	SM	Medium dense, brown to yellow-brown, silty SAND (SM), no odor, wet, split-spoon refusal at 9.5 ft., auger refusal at 9.5 ft. -LACUSTRINE-	PID = 0.0 ppm		10	5	5	40	40				
10					9.5		Bottom of exploration at 9.5 ft. Note: auger refusal at 9.5 ft.											

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/27/06	1535	0.2	8	8.5	8.5+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	9.5
Rock Cored (lin. ft.)	-
Samples	5S
Boring No.	**SB-5**

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-6

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 30, 2006
Finish November 30, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum 514.2
Location See Plan
N 1,151,155
E 1,404,354

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					513.7		-BRICK PAVERS-											
					0.5		-CONCRETE-											
					512.7													
					1.5													
	2 2 5 5	S1 10/24	2.0 4.0			SM	Loose, brown, silty SAND with gravel (SM), 10% coal particles, 10% brick fragments, 5% concrete fragments, trace ash, no odor, dry.	PID = 0.0 ppm										
	2 3 5 6	S2 12/24	4.0 6.0			SM	Loose, brown, silty SAND with gravel (SM), 10% brick fragments, no odor, dry.	PID = 0.0 ppm										
5	5 9 8 9	S3 15/24	6.0 8.0			SM	Medium dense, light brown, silty SAND (SM), trace coal and ash in tip of split-spoon. -FILL-	PID = 0.0 ppm		10	5	10	45	30				
	1 2 4 2	S4 8/24	8.0 10.0	NO WELL INSTALLED		SM	Loose, brown, silty SAND with gravel (SM), no odor, moist.	PID = 0.0 ppm	10	10	5	10	40	25				
10					503.9													
	2 3 5 6	S5 10/24	10.0 12.0		10.3	OL/OH	Medium stiff, dark brown, ORGANIC SILT with sand (OL/OH), trace clam shells and organics, organic odor, wet at approximately 11.5 ft. -ORGANIC DEPOSITS-	PID = 0.0 ppm				5	10	85				
	100/5	S6 2/5	12.0 12.4		502.2 12.0 501.8 12.4		Split spoon refusal with 2 in. of rock fragments. -WEATHERED BEDROCK- Bottom of exploration at 12.4 ft.											

Water Level Data						Sample Identification	Well Diagram	Summary
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon G Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (lin. ft.) 12.4 Rock Cored (lin. ft.) - Samples 6S **Boring No. SB-6**

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-7

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 30, 2006
Finish November 30, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 514.1
Datum
Location See Plan
N 1,151,131
E 1,404,400

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	9 10 17 31	S1 15/24	0.0 2.0			SM	80% medium dense, black to dark brown, silty SAND with gravel (SM), 10% coal, 5% ash, 5% concrete, trace clinker, no odor, dry.	PID = 0.3 ppm	10	10	15	15	15	15				
	9 12 16 21	S2 14/24	2.0 4.0			SM	Similar to S1, 10% clinker, trace ash, brick and concrete.	PID = 0.0 ppm										
5	5 4 5 4	S3 12/24	4.0 6.0			SM	Loose, brown, silty SAND with gravel (SM), brick, ash, coal, trace clinker, no odor, moist.	PID = 0.6 ppm										
						SM	Loose, yellow-brown, silty SAND with gravel (SM), trace ash, coal, and brick, no odor, moist.		5	15	10	15	25	30				
	3 4 7 8	S4 10/24	6.0 8.0			SM	Medium dense, 70% black and red, coal and brick particles, 30% silty SAND with gravel (SM).	PID = 0.0 ppm										
	7 8 3 3	S5 8/24	8.0 10.0			SM	Medium dense, 70% black and red, coal and brick particles, 30% silty SAND with gravel (SM). -FILL-	PID = 0.5 ppm										
10				NO WELL INSTALLED	504.2 9.9													
	5 3 4 5	S6 9/24	10.0 12.0			ML	Medium stiff, dark brown, SILT with sand (ML), trace small clam shells, slight organic odor, moist. -ORGANIC DEPOSIT-	PID = 0.0 ppm					20	80	N	L	L	
	100/2	S7 1/2	12.0 12.2		502.1 12.0 501.9 12.2		Split spoon refusal with weathered bedrock chips -WEATHERED BEDROCK- Bottom of exploration at 12.2 ft.											

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/30/06	1210	.25	10	11	10+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.0
Rock Cored (lin. ft.)	-
Samples	7S

Boring No. SB-7

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-8

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 30, 2006
Finish November 30, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 515.2
Datum
Location See Plan
N 1,151,121
E 1,404,502

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					514.7		-BRICK PAVEMENT-											
	2 3 16	S1 3/18	0.5 2.0		0.5	SP	Medium dense, brown to black, poorly-graded SAND with gravel (SP), 15% coal particles, no odor, dry.	PID = 0.1 ppm	10	20	20	20	10	5				
	100/3	S2 2/3	2.0 4.0		512.9 2.3	SP	Medium dense, brown to black, poorly-graded SAND with gravel (SP), coal particles, no odor, dry. Split-spoon refusal at 2.3 ft.	PID = 0.1 ppm										
					511.7 3.5		Auger through probable concrete 2.3 ft. to 3.5 ft.											
	1 2 2 3	S3 0/24	4.0 6.0				No recovery, possibly pushed obstruction.											
5	1 2 1 2	S4 14/24	6.0 8.0			SM	Very loose, brown to gray-brown, silty SAND with gravel (SM), 10% coal particles, trace ash and brick, apparent slight naphthalene odor, wet.	PID = 1.6 ppm		20	10	15	20	25				
	8 9 11 12	S5 9/24	8.0 10.0			SM	Medium dense, brown to gray-brown, silty SAND with gravel (SM), coal particles, trace ash and brick, layer of coal and ash at 9.5 ft. to 9.7 ft., gravel 9.7 ft. to 10.0 ft., no odor, wet.	PID = 0.0 ppm										
					505.5													
10	7 8 19 6	S6 5/24	10.0 12.0	NO WELL INSTALLED	9.7	GM	-FILL- Medium dense, brown, silty GRAVEL with sand (GM), no odor, wet.	PID = 0.1 ppm	25	20	10	10	15	20				
	1 2 3 3	S7 2/24	12.0 14.0			GM	Loose, brown, silty GRAVEL with sand (GM), no odor, wet, poor recovery. -GLACIAL TILL-	PID = 0.0 ppm										
	~~100/3~~	~~S8~~ 1/3	~~14.0~~ 14.3		500.9 14.3	GM	Very dense, brown, silty GRAVEL with sand (GM), no odor, wet, split-spoon refusal on probable top-of-rock.											
15							Bottom of exploration at 14.3 ft.											

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/30/06	1050	.2	10	12	9.5+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	14.3
Rock Cored (lin. ft.)	-
Samples	8S
Boring No.	**SB-8**

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-9

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 29, 2006
Finish November 29, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum 513.9
Location See Plan
N 1,151,166
E 1,404,439

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 3 5 7	S1 6/24	0.0 2.0			SM	Loose, dark brown, silty SAND with gravel (SM), 10% coal particles, no odor, dry.	PID = 0.0 ppm	20	10	10	15	20	15				
	2 3 7 8	S2 16/24	2.0 4.0			SM	Loose, yellow-brown, silty SAND (SM), 5% coal particles, trace brick and ash, occasional clayey lenses, no odor, moist.	PID = 0.0 ppm		10	10	20	25	30				
	3 4 6 6	S3 14/24	4.0 6.0				Similar to S2, trace coal and brick, occasional clayey lenses, petroleum odor at 5.5 ft., moist.	PID = 48.7 ppm										
5	1 2 1 3	S4 17/24	6.0 8.0			SM	Very loose, gray-brown, silty SAND with gravel (SM), trace coal and small clam shells, weathered petroleum odor, wet, rounded gravel. -FILL-	PID = 12.4 ppm		15	10	20	25	30				
	1 1 2 3	S5 15/24	8.0 10.0	NO WELL INSTALLED	505.9 8.0	SM	Very loose, gray-brown, silty SAND with gravel (SM), frequent small clam shells, trace organics, weathered petroleum odor, wet, some stratification. -LACUSTRINE-	PID = 34.0 ppm		10	5	15	30	40				
10	1 2 1 2	S6 18/24	10.0 12.0			SM	Very loose, gray-brown, silty SAND with gravel (SM), frequent small clam shells, weathered, petroleum odor, wet, wood fibers at bottom of sample. .	PID = 48.7 ppm										
	100/6	S7 1/6	12.0 12.5		501.7 12.2 501.4 12.5		One inch of weathered rock chips, wet, slight weathered petroleum odor. -WEATHERED BEDROCK- Bottom of exploration at 12.5 ft. Note: Split spoon refusal at 12.5 ft. in weathered bedrock.											

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
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.5
Rock Cored (lin. ft.)	-
Samples	7S

Boring No. SB-9

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-10

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 28, 2006
Finish November 28, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 513.8
Datum
Location See Plan
N 1,151,191
E 1,404,380

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel %	Coarse Sand %	Fine Sand %	Medium Sand %	Fine Sand %	Fines %	Field Test: Dilatancy	Toughness	Plasticity	Strength
0	5 10 11 16	S1 14/24	0.0 2.0	NO WELL INSTALLED		SM	Medium dense, dark brown to black, silty SAND with gravel (SM), 20% coal, 5% clinker, brick and gravel in spoon tip, no odor, dry. Note: auger through rubble debris 1.8 ft. to 4.0 ft. No sample 2.0 ft. to 4.0 ft.	PID = 0.0 ppm		15	10	10	20	20				
5	2 3 4 5	S2 16/24	4.0 6.0			SM	Similar to S1, except loose, with weathered petroleum odor, moist.											
	1 2 1 3	S3 10/24	6.0 8.0			SM	Very loose, light gray-brown, silty SAND with gravel (SM), slight weathered petroleum odor, moist.	PID = 32.4 ppm	5	20	10	10	35	20				
	2 3 6 7	S4 12/24	8.0 10.0			SM	Loose, dark brown, silty SAND (SM), to SILT with sand from 9.3 ft. to 10.0 ft., 5% brick and coal, weathered petroleum odor, moist. -FILL-	PID = 80.8 ppm										
10	2 3 4 6	S5 6/24	10.0 12.0		503.6 10.2	SM	Loose, yellow to gray, silty SAND with gravel (SM), weathered petroleum odor, wet.	PID = 281 ppm										
	12 28 100/2	S6 9/14	12.0 13.2		501.0 12.8 500.6 13.2		Similar to S5, except dense, yellow-green color in water; no apparent sheen or product; apparent strong weathered petroleum odor with possible naphthalene, wet, bottom 5 in. is completely weathered rock. -LACUSTRINE- -WEATHERED BEDROCK- Bottom of exploration at 13.2 ft. Note: Split spoon refusal with weathered rock.	PID = 73.0 ppm										
15																		

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/28/06	1555	.2	10	11	10+/-

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 13.2
Rock Cored (lin. ft.) -
Samples 6S

Boring No. SB-10

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-11

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 29, 2006
Finish November 29, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum 513.6
Location See Plan
N 1,151,263
E 1,404,351

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4 9 11 26	S1 15/24	0.0 2.0		513.3 0.3 512.3		-TOPSOIL- Wood with creosote odor, probable railroad tie.	PID = 39.3 ppm										
	9 22 11 12	S2 6/24	2.0 4.0		1.3	SM	Dense, dark brown, silty SAND with gravel (SM), trace concrete and clinker/slag, creosote odor, dry. 6 in. of creosote-coated wood, probable railroad tie.	PID = 104 ppm										
5	4 5 6 4	S3 1/24	4.0 6.0		507.6		1 in. of creosote-saturated wood, strong odor, sheen in spoon, probable railroad tie, poor recovery.	PID = 109 ppm										
	1 1 2 1	S4 2/24	6.0 8.0	NO WELL INSTALLED	6.0	SM	Very loose, brown, silty SAND (SM) and creosote-coated wood fibers, poor recovery. -FILL-	PID = 32.3 ppm										
	1 1 1 1	S5 14/24	8.0 10.0		504.1	SM	Very loose, brown to black, silty SAND (SM), 20% ash, 5% wood fibers, slight creosote odor, wet.	PID = 1.6 ppm										
10	1 1 1 1	S6 17/24	10.0 12.0		9.5 501.6	SC	Very loose, yellow-brown, clayey SAND (SC), slight creosote odor, wet, bottom 2 in. is brown, trace organic fibers.	PID = 1.2 ppm		10	10	5	30	45				
	1 3 5 6	S7 14/24	12.0 14.0		12.0 501.1 12.5	CL SP-SM	Soft, dark brown, sandy CLAY (CL), slight creosote odor, moist. -FILL- Medium dense, yellow-brown, poorly-graded SAND with silt (SP-SM), slight creosote odor, wet.	PID = 0.7 ppm PID = 0.0 ppm			5	20	65	10				
	5 100/1	S8 3/7	14.0 14.6		499.0 14.6		-LACUSTRINE- Bottom of exploration at 14.6 ft. Note: Split spoon refusal.											
15																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/29/06	1420	0.1	14	14.5	8+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	14.6
Rock Cored (lin. ft.)	-
Samples	8S

Boring No. SB-11

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-12

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 28, 2006
Finish November 28, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 513.8
Datum
Location See Plan
N 1,151,209
E 1,404,324

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 3 6 6	S1 19/24	0.0 2.0			SM	Loose, dark brown to black, silty SAND (SM), 15% coal particles, 5% brick, no odor, dry, occasional lens of odor-free, yellow-brown, silty sand.	PID = 0.7 ppm	10	10	10	10	15	25				
	6 4 5 5	S2 16/24	2.0 4.0		511.4 2.4	ML	Stiff, brown to gray-brown, sandy SILT (ML), trace ash, slight weathered petroleum odor, moist.	PID = 65.8 ppm		10	5	10	25	50				
	1 2 1 3	S3 14/24	4.0 6.0		509.8 4.0	SM	Very loose, black to brown, silty SAND (SM), 20% coal particles, 15% ash, 15% brick, 5% clinker, slight acrid odor, dry.	PID = 32.9 ppm										
5	1 2 4 5	S4 14/24	6.0 8.0			SM	Loose, black to brown, silty SAND (SM), 20% coal particles, 15% ash, 15% brick, 5% clinker, slight acrid odor, dry.	PID = 1.1 ppm										
	2 4 4 3	S5 12/24	8.0 10.0			SM	Loose, black to yellow-brown, silty SAND with gravel (SM), trace coal, slight weathered petroleum odor to 9.5 ft., wet at 9.0 ft., no sheen.	PID = 0.7 ppm	5	20	10	10	25	30				
10	5 10 28 38	S6 12/24	10.0 12.0	NO WELL INSTALLED	502.8 11.0	SM GP	Dense, black to yellow-brown, silty SAND with gravel (SM), slight weathered petroleum odor, no sheen, cobble fragments at 11.4 ft. to 11.6 ft. -FILL-	PID = 0.5 ppm PID = 1.3 ppm										
	9 10 12 13	S7 6/24	12.0 14.0		499.8		Medium dense, gray, poorly-graded GRAVEL with sand, musty odor, dry. Note: cobbles and boulders 12.0 ft. to 14.0 ft, split-spoon refusal and auger refusal at 14.0 ft. - GLACIAL TILL-											
	100/0	S8 0/0	14.0 14.0		14.0		Bottom of exploration at 14.0 ft.											
15																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/28/06	-	-	-	-	9+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	14.0
Rock Cored (lin. ft.)	-
Samples	8S

Boring No. SB-12

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-13

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 28, 2006
Finish November 28, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 514.0
Datum
Location See Plan
N 1,151,220
E 1,404,281

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	6 5 4 3	S1 16/24	0.0 2.0		513.8 0.2	SM	-TOPSOIL- Loose, dark brown to black, silty SAND with gravel (SM), 20% coal particles, 5% clinker, no odor, dry.	PID = 0.0 ppm	5	10	10	15	20	15				
	6 4 4 5	S2 15/24	2.0 4.0			SM	Loose, dark gray-brown, silty SAND (SM), 5% coal particles, weathered petroleum odor, moist. -FILL-	PID = 70.6 ppm		10	10	5	35	35				
5	2 3 6 6	S3 17/24	4.0 6.0			SM	Loose, light brown to light gray-brown, silty SAND (SM), weathered petroleum odor, moist.	PID = 437 ppm		5	10	5	50	30				
	2 3 4 4	S4 20/24	6.0 8.0			SM	Loose, light brown, silty SAND (SM), weathered petroleum odor, moist.	PID = 449 ppm										
	3 3 4 4	S5 24/24	8.0 10.0	NO WELL INSTALLED		SM	Loose, light brown, silty SAND (SM), weathered petroleum odor, wet at 9.6 ft. -FILL-	PID = 421 ppm										
10	6 7 8 8	S6 18/24	10.0 12.0		504.0 10.0	ML	Stiff, light brown to tan, sandy SILT (ML), weathered petroleum odor, wet, no sheen.	PID = 260 ppm		10	10	5	20	55				
	9 11 16 18	S7 18/24	12.0 14.0			ML	Very stiff, light brown to tan, sandy SILT (ML), weathered petroleum odor, wet, no sheen.	PID = 168 ppm		10	5		15	70				
15	26 100/2	S8 5/8	14.0 14.7		499.3 14.7	ML	Very stiff, light brown to tan, SILT with sand (ML), weathered petroleum odor, wet, no sheen. -LACUSTRINE- Bottom of exploration at 14.7 ft. Note: Split spoon refusal.	PID = 372 ppm										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/28/06	-	-	-	-	9.6+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	14.7
Rock Cored (lin. ft.)	-
Samples	8S

Boring No. SB-13

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-14

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start November 29, 2006
Finish November 29, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 511.0
Datum
Location See Plan
N 1,151,297
E 1,404,264

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 2 3 3	S1 19/24	0.0 2.0	NO WELL INSTALLED		SM/SP	Loose, brown, poorly-graded SAND (SP) and silty SAND (SM), layered, with 20% coal particles, trace gravel, no odor, dry.	PID = 0.0 ppm										
	3 2 1 1	S2 14/24	2.0 4.0				Similar to S1, except very loose, trace brick. -FILL-	PID = 0.0 ppm										
	1 2 3 7	S3 16/24	4.0 6.0		506.2 4.8	SM	Loose, brown to yellow-brown, silty SAND with gravel (SM), trace clay, occasional sand seams, no odor, moist, wet at approximately 5.5 ft. -LACUSTRINE-	PID = 0.0 ppm	5	10	10	15	30	30				
5	1 2 2 3	S4 24/24	6.0 8.0			SM	Very loose, gray to black-stained, silty SAND with gravel (SM), petroleum odor, wet, no sheen.	PID = 1258 ppm										
	12 13 15 22	S5 18/24	8.0 10.0		502.7 8.3	SM	Medium dense, light gray-brown, silty SAND with gravel (SM), petroleum odor, wet, no sheen.	PID = 1206 ppm	20	15	5	10	25	25				
10	9 12 15 20	S6 18/24	10.0 12.0			SM	Medium dense, light brown, silty SAND with gravel (SM), petroleum odor, wet, no sheen.	PID = 1171 ppm										
	36 100/5	S7 7/24	12.0 12.9		498.1 12.9	SM	Dense, light brown, silty SAND with gravel (SM), petroleum odor, wet, no sheen, weathered rock in spoon tip. -GLACIAL TILL- Bottom of exploration at 12.9 ft. Note: Split spoon refusal with rock chips.	PID = 178 ppm										

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/29/06	1240	0.1	10	-	5.5+/-

Sample Identification		Well Diagram	
O	Open End Rod		Riser Pipe
T	Thin Wall Tube		Screen
U	Undisturbed Sample		Filter Sand
S	Split Spoon		Cuttings
G	Geoprobe		Grout
			Concrete
			Bentonite Seal

Summary	
Overburden (lin. ft.)	12.9
Rock Cored (lin. ft.)	-
Samples	7S

Boring No. SB-14

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-15

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start November 28, 2006
Finish November 28, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 513.2
Datum
Location See Plan
N 1,151,096
E 1,404,295

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	4	S1	0.0		513.1	SP-SM	-TOPSOIL-	PID = 0.0 ppm		25	15	20	30	10				
	5	16/24	2.0		0.1		Medium dense, brown, poorly-graded SAND with silt and gravel (SP-SM), no odor, dry.											
	7				512.5			PID = 0.0 ppm										
	8				0.7	SM	Medium dense, black, COAL particles, 25% slag and clinker particles, no odor, dry.	PID = 0.0 ppm		20	5	10	30	35				
	4	S2	2.0		512.0		Loose, brown, silty SAND with gravel (SM), no odor, moist.											
	3	20/24	4.0		1.2													
	3																	
	3																	
	1	S3	4.0			SM	Very loose, brown, silty SAND with gravel (SM), trace coal and brick particles, no odor, moist.	PID = 0.0 ppm		20	5	10	30	35				
5	2	16/24	6.0															
	1																	
	2																	
	1	S4	6.0			SM	Loose, brown, silty SAND with gravel (SM), trace coal particles, no odor, moist.	PID = 0.0 ppm	5	15	5	5	30	40				
	2	8/24	8.0															
	3																	
	1																	
	2	S5	8.0				Similar to S4, wet at approximately 9.8 ft.	PID = 0.0 ppm										
	4	9/24	10.0															
	5																	
	7																	
10	100/5	S6	10.0	NO WELL INSTALLED	502.8	SM	Loose, brown, silty SAND with gravel (SM), trace coal particles, no odor, wet, split-spoon refusal at 10.4 ft.	PID = 0.0 ppm										
		3/24	10.4		10.4		-FILL-											
							See Core Boring Report SB-15.											
15																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/28/06	-	-	-	-	9.8

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	10.4
Rock Cored (lin. ft.)	3.0
Samples	6S

Boring No. SB-15

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

DRAFT

Boring No. SB-15
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
10							502.7	
		C1	10.5	32	89		10.5	Highly weathered, tan, CONCRETE, no odor, no stain.
	1		13.5	14	39		502.0	**-CONCRETE FILL-**
	2						11.2	Hard, moderately to slightly weathered, gray, fine-grained DOLOSTONE with frequent tan SHALE beds, bedding horizontal to low angle, planar to undulating, thin, joints are horizontal to low angle, very close to close, rough, planar to undulating, discolored, open, with frequent discontinuous fractures.
	2							**-BEDROCK-**
							499.7	
							13.5	Bottom of exploration at 13.5 ft.
15								

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-16

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start December 5, 2006
Finish December 5, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 512.3
Datum
Location See Plan
N 1,151,272
E 1,404,280

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	2 3 3 2	S1 12/24	0.0 2.0			SM	Loose, dark brown, silty SAND (SM), 35% light blue to white lime-like material, 10% coal particles, no odor, dry.	PID = 0.0 ppm		10	5	10	15	15				
	1 2 3 3	S2 15/24	2.0 4.0			SM	Loose, dark brown, silty SAND (SM), light blue to white lime-like material from 2.1 ft. to 2.6 ft., coal particles, no odor, dry. -FILL-	PID = 0.0 ppm										
	2 3 4 5	S3 12/24	4.0 6.0		507.3	SM	Loose, dark brown, silty SAND (SM), light blue to white lime-like material, coal particles, no odor, dry.											
5					5.0	ML	Stiff, brown to dark brown, SILT with sand (ML), no odor, moist.	PID = 0.0 ppm		5			20	80				
	1 2 2 4	S4 16/24	6.0 8.0			CL-ML	Soft, yellow-brown to brown, clayey SILT (CL-ML) with occasional seams of fine sand, no odor, moist. -LACUSTRINE-	PID = 0.0 ppm										
	1 2 2 3	S5 14/24	8.0 10.0	NO WELL INSTALLED		CL	Similar to S4, wet at approximately 9.3 ft.; red-brown, lean CLAY from 9.4 ft. to 9.6 ft.	PID = 0.0 ppm										
10	8 9 15 17	S6 16/24	10.0 12.0		502.3 10.0	SM	Medium dense, brown to yellow-brown, silty SAND with gravel (SM), no odor, wet, compact in-situ.	PID = 0.0 ppm	10	5			45	40				
	12 15 18 25	S7 16/24	12.0 14.0			SM	Dense, yellow-brown to light brown, silty SAND with gravel (SM), slight motor oil-like odor, wet, compact in-situ.	PID = 1.2 ppm	10	20	5	10	25	30				
					498.3 14.0		-GLACIAL TILL- See Core Boring Report SB-16.											
15																		

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
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	14
Rock Cored (lin. ft.)	2.0
Samples	7S

Boring No. SB-16

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High, V-Very High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

DRAFT

Boring No. SB-16
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
								Note: Drill action suggests top-of-bedrock
							498.3	
		C1	14.0	22	92		**14.0**	Hard, slightly weathered, gray, fine-grained DOLOSTONE, bedding horizontal to low angle, thin, joints horizontal to low angle, very close to close, rough, planar to undulating, discolored to fresh, open.
15			16.0	9	38			**-BEDROCK-**
							496.3	
							16.0	Bottom of exploration at 16.0 ft.

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. SB-17

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start December 4, 2006
Finish December 4, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 514.2
Datum
Location See Plan
N 1,151,060
E 1,404,465

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	3 5 7 6	S1 14/24	0.0 2.0	NO WELL INSTALLED		SM	Medium dense, brown, silty SAND with gravel (SM), 20% coal particles, trace clinker and brick, no odor, dry.	PID = 0.0 ppm	5	15	5	10	20	25				
	3 4 4 5	S2 3/24	2.0 4.0			SM	Medium dense, brown, silty SAND with gravel (SM), coal particles, no odor, dry, poor recovery, gravel in tip of split-spoon.	PID = 0.0 ppm										
5	1 2 2 3	S3 4/24	4.0 6.0			SM	Very loose, dark brown to orange-brown, silty SAND (SM), 5% coal, trace ash, no odor, moist. -FILL-	PID = 0.0 ppm			5	10	40	40				
					508.2													
	1 2 1 2	S4 16/24	6.0 8.0		6.0 507.1	ML	Soft, dark brown, sandy SILT (ML), slight organic odor, moist. -ORGANIC DEPOSIT-	PID = 0.0 ppm					30	70				
					7.1	SC	Very loose, brown to yellow-brown, clayey SAND with gravel (SC), slight organic odor, moist.	PID = 0.0 ppm	5	15	10	10	15	45				
	1 2 2 2	S5 11/24	8.0 10.0			SC	Very loose, brown to yellow-brown, clayey SAND with gravel (SC), trace organics, slight organic odor, wet. -LACUSTRINE-	PID = 0.0 ppm										
10	1 2 2 2	S6 12/24	10.0 12.0				Similar to S5; slight weathered petroleum odor from 11.5 ft. to 12.0 ft.											
						SC	Very loose, brown to yellow-brown, clayey SAND (SC), trace organics, slight weathered petroleum odor, wet.	PID = 0.0 ppm										
	100/6	S7 6/6	12.0 12.5		501.7 12.5		Bottom of exploration at 12.5 ft. Note: Split spoon refusal and auger refusal at 12.5 ft.											

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
12/04/06	-	-	-	-	8+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	12.5
Rock Cored (lin. ft.)	-
Samples	7S

Boring No. SB-17

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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Boring No. SB-18
Was not installed

Note: Boring SB-19 was not re-numbered to be SB-18 because the soil sample labels and chain-of-custody documentation completed in the field used the SB-19 designation.

TEST BORING REPORT

DRAFT

Boring No. SB-19

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 1
Start December 1, 2006
Finish December 1, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum
Location See Plan

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	-	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	2 1/4	1 3/8	-	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0							-BRICK PAVERS-											
	2 1 2	S1 10/18	0.5 2.0		0.5	SM	50% COAL particles, 50% dark brown, silty SAND (SM), trace ash, no odor, moist.	PID = 0.0 ppm										
	4 4 4 4	S2 12/24	2.0 4.0			SM	Loose, dark gray-brown to brown, silty SAND with gravel (SM), trace coal, ash and glass, weathered petroleum odor, moist.	PID = 23.4 ppm										
5	4 3 2 1	S3 14/24	4.0 6.0			SM	Loose, brown, silty SAND (SM), slight weathered petroleum odor with slight naphthalene odor, moist.	PID = 6.2 ppm	5	5	5	20	35	30				
	2 2 3 2	S4 14/24	6.0 8.0			SM	Loose, brown, silty SAND (SM), slight weathered petroleum odor with slight naphthalene odor, moist, 1 in. coal in tip of spoon. -FILL-	PID = 12.1 ppm										
	1 1 2 2	S5 12/24	8.0 10.0	NO WELL INSTALLED	8.5	SM	Loose, brown to yellow-brown, silty SAND with gravel (SM), no odor, wet at approximately 9.5 ft.	PID = 6.8 ppm	5	15	5	15	30	30				
10	1 2 3 5	S6 7/24	10.0 12.0			SM	Loose, brown to yellow-brown, silty SAND with gravel (SM), no odor, wet. -LACUSTRINE-	PID = 0.0 ppm										
	6 18 100/6	S7 8/18	12.0 13.5			SM	Loose, brown to yellow-brown, silty SAND with gravel (SM), no odor, wet, weathered rock in spoon tip.	PID = 0.0 ppm										
					13.5		Bottom of exploration at 13.5 ft. Note: Split spoon refusal with weathered rock.											
15																		

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
G Geoprobe

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 13.5
Rock Cored (lin. ft.) -
Samples 7S

Boring No. SB-19

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. MW-1

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start December 1, 2006
Finish December 1, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 514.1
Datum
Location See Plan
N 1,150,942
E 1,404,284

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					513.8		-BITUMINOUS PAVEMENT-											
	2 3 3	S1 12/18	0.3 2.0		0.3	SM	Loose, dark brown, silty SAND with gravel (SM), trace white brittle material, no odor, moist.	PID = 0.0 ppm		15	10	20	40	15				
	1 2 3 3	S2 14/24	2.0 4.0			SM	Loose, dark brown, silty SAND with gravel (SM), no odor, moist, trace brick at 3.9 ft.	PID = 0.0 ppm										
	1 2 2 3	S3 1/24	4.0 6.0			SM	Very loose, dark brown, silty SAND with gravel (SM), no odor, moist, poor recovery.	PID = 0.0 ppm										
5	19 100/6	S4 4/12	6.0 7.0			SM	Medium dense, dark brown, silty SAND with gravel (SM), no odor, moist, weathered rock in spoon tip, auger refusal at 7.5 ft.	PID = 0.0 ppm										
					507.2 6.9													
					506.6 7.5		-FILL- Weathered top-of-bedrock. See Core Boring Report MW-1.											
10																		

Water Level Data						Sample Identification	Well Diagram	Summary
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon G Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (lin. ft.) 7.5 Rock Cored (lin. ft.) 2.0 Samples 4S
12/01/06	0840	-	6	7	5+/-			**Boring No. MW-1**

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

DRAFT

Boring No. MW-1
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
							506.6	
		C1	7.5 9.5	22 0	92 0		7.5	Hard, highly weathered, gray-brown, fine-grained DOLOSTONE, bedding horizontal to low angle, thin to medium thick, joints horizontal to low angle, very close to close, rough to smooth, undulating, discolored to slightly disintegrated, open, based on drill action, the missing core was likely washed out in weathered zones at 7.5 ft. to 7.6 ft. and 9.4 ft. to 9.5 ft.
							504.6	**-BEDROCK-**
10							9.5	Bottom of exploration at 7.5 ft.

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. MW-2

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start November 28, 2006
Finish November 28, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 512.8
Datum
Location See Plan
N 1,151,128
E 1,404,296

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					512.6		-TOPSOIL-											
	2 3 4 4	S1 19/24	0.2 2.0		0.2 512.0		Loose, black, COAL particles, 25% slag and clinker-like particles, trace ash, no odor, dry.	PID = 0.0 ppm										
					0.8	SM	Loose, brown, silty SAND (SM), 5% coal particles, trace ash, no odor, dry.			5	10	10	30	40				
	4 4 4 4	S2 18/24	2.0 4.0			SM	Loose, dark, gray-brown, silty SAND (SM), 5% coal and ash particles, slight organic odor, moist.	PID = 0.0 ppm		5	5	10	35	40				
	3 3 3 3	S3 16/24	4.0 6.0			SM	Similar to S2, with 0.3 in. of odor-free wood.	PID = 0.0 ppm										
5																		
	1 2 2 4	S4 21/24	6.0 8.0			SM	Very loose, dark, gray-brown, silty SAND (SM), coal and ash particles, trace coarse gravel and brick, slight organic odor, moist.	PID = 0.0 ppm										
	1 2 2 3	S5 17/24	8.0 10.0			SM	Very loose, dark, gray-brown, silty SAND (SM), coal and ash particles, slight organic odor, moist with trace of odor-free wood at 8.7 ft.	PID = 0.0 ppm										
10																		
	1 2 3 4	S6 16/24	10.0 12.0			SM	Loose, dark gray-brown, silty SAND with gravel (SM), 10% coal particles, trace brick, ash, and organics, slight organic odor, wet at 10.3 ft.	PID = 0.0 ppm		20	10	10	20	30				
	1 1 1 1	S7 6/24	12.0 14.0			SM	Very loose, dark gray-brown, silty SAND with gravel (SM), coal particles, trace brick, ash, and organics, slight organic odor, wet.	PID = 0.0 ppm										
	18 100/6	S8 11/12	14.0 15.0		497.8	SM	Medium dense, dark gray-brown, silty SAND with gravel (SM), coal particles, trace brick, ash, and organics with 2 in. concrete at 14.5 ft. to 14.7 ft., black stain and moderate apparent naphthalene odor from 14.3 ft. to 14.5 ft., wet.	PID = 0.0 ppm										
15					15.0		-FILL-											
							See Core Boring Report MW-2.											
							Note: Split spoon refusal at 15.0 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
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	15.0
Rock Cored (lin. ft.)	2
Samples	8S

Boring No. MW-2

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

DRAFT

Boring No. MW-2
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
15							497.8	
	1	C1	15.0 17.0	17 0	71 0		15.0	Weathered CONCRETE (mud-mat), no odor, no stain.
	1						496.2	
							16.6	Hard, highly to moderately weathered, gray, fine-grained DOLOSTONE,
							495.8	bedding, not apparent, joints horizontal to low angle, very close to close, rough,
							17.0	undulating, discolored, open.
								-BEDROCK-
								Bottom of exploration at 17.0 ft.

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. MW-3

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start November 27, 2006
Finish November 27, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 513.6
Datum
Location See Plan
N 1,151,091
E 1,404,379

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 2 1 2	S1 24/24	0.0 2.0		513.5 0.1		-TOPSOIL-											
					512.0 1.6	SM	Very loose, black, COAL particles, (50%), 20% clinker particles 15% brown, silty SAND (SM), 5% ash, musty odor, dry, soil present as a 5 in. thick layer	PID = 3.2 ppm										
	1 3 5 6	S2 12/24	2.0 4.0			SM	Loose, brown, silty SAND (SM), 20% coal particles, trace ash, musty odor, moist.	PID = 0.1 ppm		10	10	10	20	30				
5	1 2 1 2	S3 15/24	4.0 6.0			SM	Very loose, brown, silty SAND (SM), coal particles, trace ash, concrete, and ceramic, musty odor, wet.	PID = 0.0 ppm										
	2 3 6 9	S4 10/24	6.0 8.0		506.0 7.6	GP GP	Similar to S3, except trace coal, no ash, wet. Medium dense, brown, poorly-graded GRAVEL (GP), no odor, dry. Similar to S4, except with slight gray staining, slight naphthalene odor from 9.6 ft. to 10.0 ft., wet.	PID = 0.0 ppm PID = 35.6 ppm										
10	4 4 5 17	S5 10/24	8.0 10.0															
	5 18 ~~100/1~~	S6 5/13	10.0 11.1		502.5 11.1		Recovered 5.0 in. highly-weathered bedrock fragments, slight naphthalene odor, dry. -FILL- See Core Boring Report MW-3. Note: Split spoon refusal at 11.1 ft.	PID = NS ppm										
15																		

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
11/27/06	1400	0.5	13.1	13.1	9+/-

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

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	11.1
Rock Cored (lin. ft.)	2
Samples	6S

Boring No. MW-3

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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CORE BORING REPORT

DRAFT

Boring No. MW-3
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
							502.5	
	2	C1	11.1	24	100		11.1	Hard, highly weathered 11.1 ft. to 11.6 ft., moderately weathered 11.6 ft. to 13.1 ft., tan to gray, fine-grained DOLOSTONE, bedding horizontal, planar to undulating, thin, primary joints horizontal to low angle, very close to close, rough, undulating, discolored, open, secondary joints high angle to vertical, moderately spaced, other wise similar to primary joints.
	2		13.1	0	0		500.5	-BEDROCK-
							13.1	Bottom exploration at 13.1 ft. Note: GW Monitoring Well installed.
15								

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TEST BORING REPORT

DRAFT

Boring No. MW-4

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start November 29, 2006
Finish November 29, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum 513.1
Location See Plan
N 1,151,267
E 1,404,304

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 1 1 1	S1 4/24	0.0 2.0		513.0 0.1	SM	-TOPSOIL- Very loose, dark brown, silty SAND (SM), 10% concrete, 10% clinker and slag, trace organics, no odor, dry.	PID = 0.0 ppm		5	10	20	20	25				
	1 2 1 3	S2 15/24	2.0 4.0			SM	Very loose, brown, silty SAND (SM), with 1 in. layer of tan to green-blue ash at 2.7 ft., 10% coal and clinker/slag particles, no odor, moist.	PID = 0.0 ppm		5	10	20	30	25				
5	1 2 3 5	S3 18/24	4.0 6.0		508.4 4.7 507.1	SM SC	Loose, brown, silty SAND (SM), 5% brick, no odor, moist. Loose, brown, clayey SAND (SC), no odor, wet, (perched). -FILL-	PID = 0.0 ppm		10	10	15	30	30				
	2 2 3 5	S4 12/24	6.0 8.0		6.0	SM	Loose, brown, silty SAND (SM), trace clay and organics, slight organic odor, moist.	PID = 0.0 ppm		10	5	10	40	35				
	2 3 7 8	S5 14/24	8.0 10.0			SM	Similar to S4, no organics, no odor, wet at 9.2 ft. with frequent layers of silty fine sand.	PID = 0.0 ppm										
10	3 7 9 11	S6 15/24	10.0 12.0			SM	Medium dense, brown to yellow-brown, silty SAND with gravel (SM), no odor, wet.	PID = 0.0 ppm	10	15	10	15	25	25				
	28 100/3	S7 7/9	12.0 12.8		500.1 13.0	SM	Very dense, brown to yellow-brown, silty SAND with gravel (SM), no odor, wet. Split-spoon refusal at 12.8 ft., auger refusal at 13.0 ft. -LACUSTRINE- See Core Boring Report MW-4.	PID = 0.0 ppm		15	20	15	20	30				
15																		

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
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	13.0
Rock Cored (lin. ft.)	2
Samples	7S

Boring No. MW-4

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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CORE BORING REPORT

DRAFT

Boring No. MW-4
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weathering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
							500.1	
	2	C1	13.0 15.0	24 10	100 42		13.0	Hard, moderately to slightly weathered, gray, fine-grained DOLOSTONE, bedding horizontal to low angle, planar to undulating, thin, primary joints, horizontal to low angle, very close to close, rough, planar to undulating, discolored to slightly disintegrated, open, secondary joints are vertical, moderate spacing, smooth, planar to undulating, discolored to fresh, open.
	2						498.1	-BEDROCK-
15							15.0	Bottom of exploration at 15.0 ft.

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. MW-5

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start November 30, 2006
Finish November 30, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 514.2
Datum
Location See Plan
N 1,151,167
E 1,404,494

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	1 2 3 4	S1 16/24	0.0 2.0			SM	Loose, brown to black, silty SAND (SM), 20% coal, 10% ash, trace clinker, trace clam shells, no odor, dry.	PID = 0.0 ppm		5	10	5	20	30				
	6 7 10 8	S2 3/24	2.0 4.0			SM	Medium dense, brown to black, silty SAND (SM), 20% coal, 10% ash, trace clinker, trace clam shells, no odor, dry, poor recovery. -FILL-	PID = 0.0 ppm										
	1 2 3 3	S3 19/24	4.0 6.0		509.9 4.3	ML	Medium stiff, brown to gray-brown, mottled, sandy SILT (ML), trace clay and gravel, no odor, moist.	PID = 0.0 ppm		5		5	25	65	S	L	L	N
5	2 4 4 4	S4 15/24	6.0 8.0				Similar to S3 below 4.3 ft.											
	1 2 2 4	S5 10/24	8.0 10.0			ML ML	Medium stiff, dark gray to black, sandy SILT (ML), weathered petroleum odor (diesel or fuel oil), moist. Soft, dark gray to black, sandy SILT (ML), weathered petroleum odor (fuel oil), wet at 9.5 ft.	PID = 6.6 ppm PID = 12.9 ppm		5		5	30	60				
10	2 3 5 18	S6 4/24	10.0 12.0		502.3	ML	Medium stiff, dark gray to black, sandy SILT with gravel (ML), weathered petroleum odor (fuel oil), wet, rock in spoon tip. -FILL-	PID = 3.2 ppm										
	12 38 100/6	S7 8/18	12.0 13.5		11.9 501.0 13.2 500.7 13.5	SM	Very dense, gray to brown, silty SAND with gravel (SM), slight weathered petroleum odor, moist, weathered bedrock at 13.2 ft. -GLACIAL TILL- Weathered top-of-bedrock. See Core Boring Report MW-5.	PID = 1.0 ppm	20	15	5	10	25	25				
15																		

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
G	Geoprobe

Well Diagram: Riser Pipe, Screen, Filter Sand, Cuttings, Grout, Concrete, Bentonite Seal

Summary	
Overburden (lin. ft.)	13.5
Rock Cored (lin. ft.)	2
Samples	7S

Boring No. MW-5

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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CORE BORING REPORT

DRAFT

Boring No. MW-5
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
								Note: Split-spoon and auger refusal at 13.5 ft.
							500.7	
	2	C1	13.5 15.5	24 0	100 0		13.5	Hard, moderately to slightly weathered, gray, fine-grained DOLOSTONE, bedding horizontal, thin, planar to undulating, primary joints horizontal to low angle, very close to close, smooth to rough, planar to undulating, discolored to slightly disintegrated, secondary joints are vertical, moderate to wide spacing, otherwise similar to primary joints.
15	2						498.7	**-BEDROCK-**
							15.5	Bottom of exploration at 15.5 ft.

HALEY & ALDRICH

TEST BORING REPORT

DRAFT

Boring No. MW-6

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start December 5, 2006
Finish December 5, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation 511.8
Datum
Location See Plan
N 1,150,971
E 1,404,454

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0	15 14 10 4	S1 11/24	0.0 2.0			SM	Medium dense, brown, silty SAND with gravel (SM), 10% light blue to white lime-like material, 5% coal particles, 5% concrete, no odor, dry, 1 in. of frost, the lime-like material reacts strongly (fizzes) with hydrochloric acid.	PID = 0.0 ppm		15	10	20	20	15				
	2 3 4 5	S2 12/24	2.0 4.0			SM	Loose, dark brown to black, silty SAND with gravel (SM), 30% ash and lime-like material, 5%cinders and coal particles, no odor, moist.	PID = 0.3 ppm	10	10	5	5	15	20				
	2 3 5 6	S3 5/24	4.0 6.0			SM	Loose, dark brown to black, silty SAND with gravel (SM), ash, coal, trace tan concrete, no odor, moist.	PID = 0.0 ppm										
5	5 10 10 6	S4 10/24	6.0 8.0			SM	Medium dense, brown, silty SAND with gravel (SM), trace coal specks, no odor, dry.	PID = 0.2 ppm	25	10	15	10	20	20				
	1 2 4 4	S5 10/24	8.0 10.0		504.0 7.8	SM OL/ OH	Medium dense, dark gray, silty SAND with gravel (SM), trace coal specks, no odor, wet, organic silt in tip of split-spoon with trace small clam shells.	PID = 0.0 ppm					10	90				
					502.3 9.5		-FILL-											
10	100/6	S6 1/6	10.0 10.5		501.6 10.2	ML	Soft, black, ORGANIC SOIL (OL/OH), trace small clam shells, organic odor, wet.						30	70				
					501.3 10.5	ML	-ORGANIC DEPOSITS- Medium stiff, brown, sandy SILT (ML), no odor, wet.											
							-LACUSTRINE- Medium stiff, brown, sandy SILT (ML), rock fragments in tip of split-spoon, no odor, wet.											
							-WEATHERED BEDROCK- See Core Boring Report MW-6. Note: Split spoon refusal at 10.5 ft., auger to 10.5 ft.											

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water
12/05/06	1130	-	-	-	7.5+/-

Sample Identification

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

Well Diagram

Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary

Overburden (lin. ft.) 10.5
Rock Cored (lin. ft.) 2
Samples 6S

Boring No. MW-6

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

CORE BORING REPORT

DRAFT

Boring No. MW-6
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
10							501.3	
	3	C1	10.5 12.5	24 0	100 0		10.5	Hard, highly to moderately weathered, gray, fine-grained DOLOSTONE with occasional very thin layers of brown siltstone, bedding is horizontal to low angle, very thin to thin, joints are horizontal to low angle, very close to close, smooth to rough, discolored, open.
	3							-BEDROCK-
							499.3	
							12.5	Bottom of exploration at 12.5 ft.

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TEST BORING REPORT

DRAFT

Boring No. MW-7

Project CANAL STREET FORMER MGP SITE ROCHESTER, NEW YORK
Client ROCHESTER GAS & ELECTRIC
Contractor NOTHNAGLE DRILLING, INC.

File No. 33879-001
Sheet No. 1 of 2
Start December 4, 2006
Finish December 4, 2006
Driller S. Loranty
H&A Rep. S. Poff
Elevation Datum 514.6
Location See Plan
N 1,151,183
E 1,404,305

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type	HSA	S	NX	Rig Make & Model: Truck-mounted CME 85
Inside Diameter (in.)	4 1/4	1 3/8	2.0	Bit Type: Cutting Head
Hammer Weight (lb.)	-	140	-	Drill Mud: None
Hammer Fall (in.)	-	30	-	Casing: spun
				Hoist/Hammer: Automatic Hammer

Depth (ft.)	SPT[1]	Sample No. & Rec. (in.)	Sample Depth (ft.)	Well Diagram	Elev./Depth (ft.)	USCS Symbol	Visual-Manual Identification and Description (Density/consistency, color, GROUP NAME, max. particle size[2], structure, odor, moisture, optional descriptions, geologic interpretation)		Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0					514.3		-BRICK PAVERS-											
					0.3		-CONCRETE-											
	4 9	S1 6/12	1.0 2.0		513.6 1.0	SM	Medium dense, brown to black, silty SAND (SM), 40% brick particles, trace ash, no odor, dry.	PID = 0.0 ppm		5	10	10	15	20				
	4 7 9 9	S2 15/24	2.0 4.0			SM	Medium dense, brown, silty SAND (SM), coal, brick, ash, no odor, dry.	PID = 0.0 ppm										
5	9 16 12 8	S3 14/24	4.0 6.0			SM	Medium dense, brown, silty SAND with gravel (SM), trace coal particles, no odor, dry.	PID = 0.0 ppm	5	10	10	5	25	45				
	7 4 9 10	S4 12/24	6.0 8.0			SM	Similar to S3, wet at approximately 7.3 ft. wet. -FILL-	PID = 0.0 ppm	10	15	10	10	25	30				
					506.6													
	2 3 4 4	S5 12/24	8.0 10.0		8.0	SM	Loose, yellow-brown to brown, silty SAND with gravel (SM), no odor, wet.	PID = 0.0 ppm										
10	4 7 10 16	S6 8/24	10.0 12.0			SM	Medium dense, yellow-brown to brown, silty SAND with gravel (SM), no odor, wet. -LACUSTRINE-	PID = 0.0 ppm										
					502.6													
	100/3	S7 1/3	12.0 12.3		12.0 502.3 12.3		Weathered rock fragments. See Core Boring Report MW-7.											
15																		

Water Level Data						Sample Identification	Well Diagram	Summary
Date	Time	Elapsed Time (hr.)	Depth (ft.) to: Bottom of Casing	Bottom of Hole	Water	O Open End Rod T Thin Wall Tube U Undisturbed Sample S Split Spoon G Geoprobe	Riser Pipe Screen Filter Sand Cuttings Grout Concrete Bentonite Seal	Overburden (lin. ft.) 12.3 Rock Cored (lin. ft.) 2 Samples 7S **Boring No. MW-7**

Field Tests: Dilatancy: R-Rapid, S-Slow, N-None
Toughness: L-Low, M-Medium, H-High
Plasticity: N-Nonplastic, L-Low, M-Medium, H-High
Dry Strength: N-None, L-Low, M-Medium, H-High, V-Very High

[1]SPT = Sampler blows per 6 in. [2]Maximum particle size (mm) is determined by direct observation within the limitations of sampler size (in millimeters).

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

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HALEY & ALDRICH

CORE BORING REPORT

DRAFT

Boring No. MW-7
File No. 33879-001
Sheet No. 2 of 2

Depth (ft)	Drilling Rate Min./ft	Run No.	Depth (ft)	Recovery/RQD in.	Recovery/RQD %	Weath-ering	Elev./ Depth (ft)	Visual Description and Remarks
								SEE TEST BORING REPORT FOR OVERBURDEN DETAILS
							502.1	
		C1	12.5 14.5	20 0	83 0		12.5	Hard, moderately weathered, gray, fine-grained DOLOSTONE interbedded with brown SILTSTONE, bedding horizontal to low angle, thin, joints horizontal to low angle, very close to close, smooth to rough, discolored, open, trace black stain on approximately 75% of joint surfaces from 12.8 ft. to 14.3 ft., slight weathered petroleum odor and slight sheen in re-circulated core water.
							500.1	-BEDROCK-
15							14.5	Bottom of exploration at 14.5 ft.

DRAFT

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

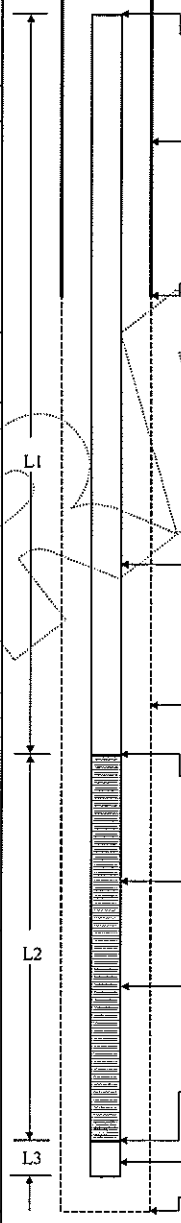
Well No. MW-1
Boring No. MW-1

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	12/1/2006
DRILLER	S. Loranty	WATER LEVEL	

Ground El. 514.1 ft | El. Datum
Location SEE PLAN
☐ Guard Pipe ☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	PIPE & CONCRETE
	1.0
	PIPE & SAND
FILL	1.2
	PIPE & SEAL
	2.0
	PIPE & SAND
	2.5
	SCREEN & SAND
7.0	
WEATHERED BEDROCK	
7.5	7.5
BEDROCK	SUMP & BENTONITE
9.5	9.5

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: Expansion Plug
Height/Depth of top of guard pipe/roadway box above ground surface: 0.0 ft
Height of top of riser pipe below ground surface: ft
Type of protective casing: Roadway Box
Length: ft
Inside Diameter: in
Depth of bottom of guard roadway box: 0.8 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0.0	1.0
Bentonite Seal	1.2	0.8

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Seals (see above)
Diameter of borehole: 4.0 in
Depth to top of well screen: 2.5 ft
Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: #1 Filter Sand
Depth of bottom of well screen: 7.5 ft
Bottom of Silt trap: 9.5 ft
Depth of bottom of borehole: 9.5 ft

2.5 ft	+	5 ft	+	2 ft	=	9.5 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

Form # 3010

DRAFT

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. MW-2
Boring No. MW-2

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	11/28/2006
DRILLER	S. Loranty	WATER LEVEL	10.3 ft. b.g.s.

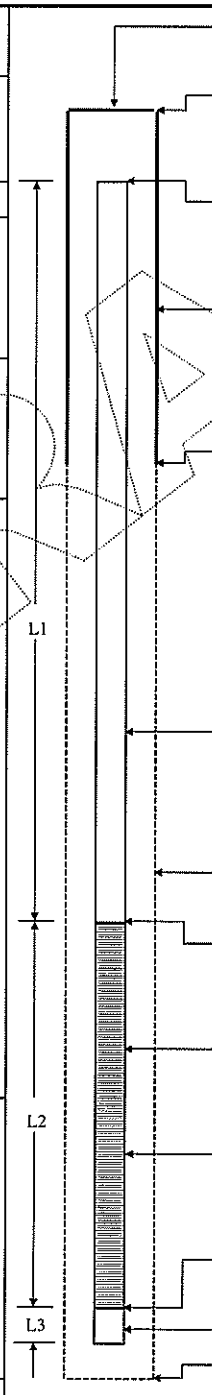
Ground El. 512.8 ft
El. Datum

Location SEE PLAN

☐ Guard Pipe
☑ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	PIPE & CONCRETE 1.5
	PIPE & SAND 2.0
FILL	PIPE & SEAL 3.5
	PIPE & SAND 5.0
	SCREEN & SAND
15 BEDROCK	15 BENTONITE
17 (Bottom of Exploration)	17

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: Expansion Plug

Height/Depth of top of guard pipe/roadway box above ground surface: ft

Height of top of riser pipe below ground surface: 0.26 ft

Type of protective casing: Roadway Box
Length: ft
Inside Diameter: in

Depth of bottom of guard roadway box: ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	+.	2.0
Bentonite Seal	2.0	1.5

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Seals (see above)

Diameter of borehole: 4.0 in

Depth to top of well screen: 5.0 ft

Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 15.0 ft

Bottom of Silt trap/sump: 17.0 ft

Depth of bottom of borehole: 17.0 ft

5 ft (Riser Pay Length (L1)) + 10 ft (Length of screen (L2)) + 2 ft (Length of silt trap (L3)) = 17 ft (Pay length)

COMMENTS:

Form # 3010

DRAFT

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OBSERVATION WELL INSTALLATION REPORT

Well No. MW-3

Boring No. MW-3

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	11/27/2006
DRILLER	S. Loranty	WATER LEVEL	8.7 ft. b.g.s.

Ground El. 513.6 ft
El. Datum

Location SEE PLAN

☑ Guard Pipe
☐ Roadway Box

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	PIPE & CONCRETE 0.8
	PIPE & CUTTINGS/SAND 1.0
	PIPE & SEAL 2.5
	PIPE & SAND 3.0
FILL	SCREEN & SAND
11.1 BEDROCK	11.1 BENTONITE
13.1	13.1

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)

L1 L2 L3

(Not to Scale)

Type of protective cover/lock: Expansion Plug
Height of top of guard pipe above ground surface: 3.15 ft
Depth of top of riser pipe below ground surface: 3.15 ft
Type of protective casing: Guard Pipe
Length: 4 ft
Inside Diameter: 6 in
Depth of bottom of guard roadway box: 1.0 ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	+0.25	1.05
Bentonite Seal	1.0	1.5

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Seals (see above)
Diameter of borehole: 4.0 in
Depth to top of well screen: 3.0 ft
Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: #1 Filter Sand
Depth of bottom of well screen: 11.1 ft
Bottom of Silt trap/sump: 13.1 ft
Depth of bottom of borehole: 13.1 ft

3 ft (Riser Pay Length (L1)) + 8.1 ft (Length of screen (L2)) + 2 ft (Length of silt trap (L3)) = 13.1 ft (Pay length)

COMMENTS:

Form # 3010

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HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

Well No. MW-4

Boring No. MW-4

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	11/29/2006
DRILLER	S. Loranty	WATER LEVEL	

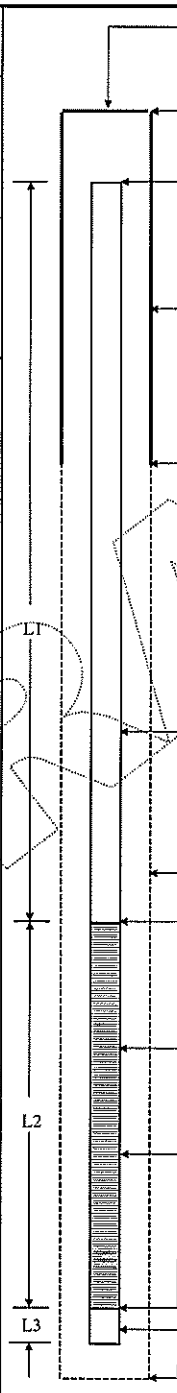
Ground El. 513.1 ft | Location SEE PLAN | ☑ Guard Pipe ☐ Roadway Box

El. Datum

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	PIPE & CONCRETE
2.0	
RILL	PIPE & SEAL
3.5	
	PIPE & SAND
4.0	
6.0	
LACUSTRINE	SCREEN & SAND
13.0	13.0
BEDROCK	BENTONITE
15.0	15.0

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: Expansion Plug

Height of top of guard pipe above ground surface: ft

Depth of top of riser pipe below ground surface: ft

Type of protective casing:

Length: ft

Inside Diameter: in

Depth of bottom of guard roadway box: ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	+	
Bentonite Seal	2.0	1.5

Type of riser pipe: Schedule 40 PVC

Inside diameter of riser pipe: 2.0 in

Type of backfill around riser:

Diameter of borehole: 4.0 in

Depth to top of well screen: 4.0 ft

Type of screen: Schedule 40 PVC

Screen gauge or size of openings: 0.010 in

Diameter of screen: 2.0 in

Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 13.0 ft

Bottom of Silt trap/sump: 15.0 ft

Depth of bottom of borehole: 15.0 ft

4 ft	+	9 ft	+	2 ft	=	15 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

Form # 3010

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OBSERVATION WELL INSTALLATION REPORT

Well No. MW-5

Boring No. MW-5

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	11/30/2006
DRILLER	S. Loranty	WATER LEVEL	

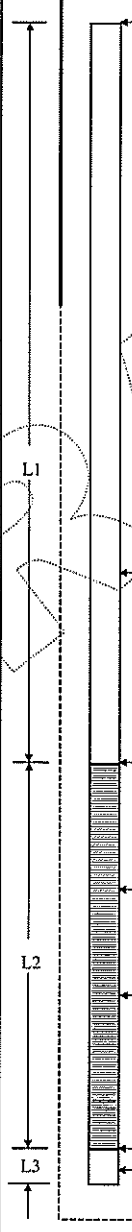
Ground El. 514.2 ft | Location SEE PLAN | ☑ Guard Pipe | ☐ Roadway Box

El. Datum

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	PIPE & CONCRETE
	2.0
	PIPE & SEAL
FILL	4.5
	SCREEN & SAND
11.9	
GLACIAL TILL	
13.2	
WEATHERED ROCK	
13.5	13.5
BEDROCK	BENTONITE
15.5	15.5

(Bottom of Exploration)

(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: Expansion Plug

Height of top of guard pipe above ground surface: ft

Depth of top of riser pipe below ground surface: ft

Type of protective casing: Flush-Mount

Length: ft

Inside Diameter: in

Depth of bottom of guard roadway box: ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	+	
Bentonite Seal	2.0	2.5

Type of riser pipe: Schedule 40 PVC

Inside diameter of riser pipe: 2.0 in

Type of backfill around riser: Sand & Seal (s)

Diameter of borehole: 6.0 in

Depth to top of well screen: 4.5 ft

Type of screen: Schedule 40 PVC

Screen gauge or size of openings: 0.010 in

Diameter of screen: 2.0 in

Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 13.5 ft

Bottom of Silt trap/sump: 15.5 ft

Depth of bottom of borehole: 15.5 ft

4.5 ft	+	9 ft	+	2 ft	=	15.5 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

DRAFT

HALEY & ALDRICH

OBSERVATION WELL INSTALLATION REPORT

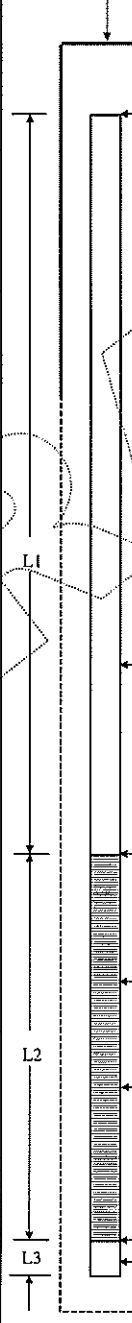
Well No. MW-6
Boring No. MW-6

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	12/5/2006
DRILLER	S. Loranty	WATER LEVEL	

Ground El. 511.8 ft | Location SEE PLAN | ☐ Guard Pipe ☐ Roadway Box
El. Datum

SOIL/ROCK CONDITIONS	BOREHOLE BACKFILL
	PIPE & CONCRETE
2.0	
	PIPE & SEAL
3.5	
	PIPE & SAND
4.5	
FILL	
	SCREEN & SAND
7.8	
ORGANIC DEPOSIT	
10.2	
WEATHERED ROCK	
10.5	10.5
BEDROCK	BENTONITE
12.5	12.5

(Bottom of Exploration)
(Numbers refer to depth from ground surface in feet)



(Not to Scale)

Type of protective cover/lock: _____

Height of top of guard pipe above ground surface: _____ ft

Depth of top of riser pipe below ground surface: _____ ft

Type of protective casing: _____
Length: _____ ft
Inside Diameter: _____ in

Depth of bottom of guard roadway box: _____ ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0	2
Bentonite Seal	2.0	1.5

Type of riser pipe: Schedule 40 PVC
Inside diameter of riser pipe: 2.0 in
Type of backfill around riser: Sand & Seal (s)

Diameter of borehole: 6.0 in

Depth to top of well screen: 4.5 ft

Type of screen: Schedule 40 PVC
Screen gauge or size of openings: 0.010 in
Diameter of screen: 2.0 in
Type of backfill around screen: #1 Filter Sand

Depth of bottom of well screen: 10.5 ft

Bottom of Silt trap/sump: 12.5 ft

Depth of bottom of borehole: 12.5 ft

4.5 ft	+	6 ft	+	2 ft	=	12.5 ft
Riser Pay Length (L1)		Length of screen (L2)		Length of silt trap (L3)		Pay length

COMMENTS:

Form # 3010

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OBSERVATION WELL INSTALLATION REPORT

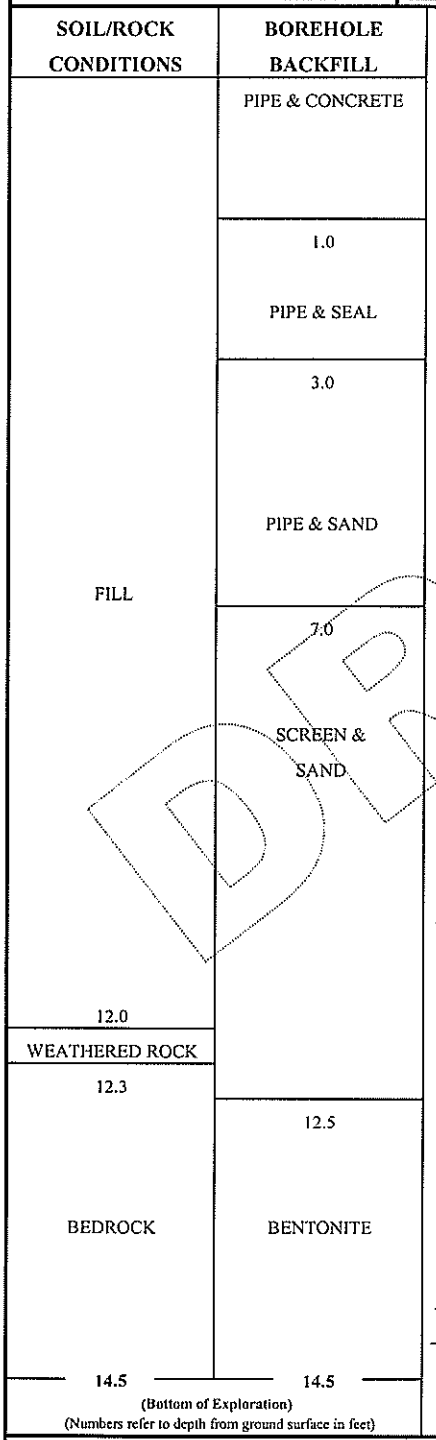
Well No. MW-7

Boring No. MW-7

PROJECT	Canal Street Former MGP Site,	H&A FILE NO.	33879-001
LOCATION	Rochester, New York	PROJECT MGR.	J. Babcock, P.E.
CLIENT	Rochester Gas & Electric	FIELD REP.	S. Poff
CONTRACTOR	Nothnagle Drilling	DATE INSTALLED	12/4/2006
DRILLER	S. Loranty	WATER LEVEL	

Ground El. 514.6 ft | Location SEE PLAN | ☐ Guard Pipe ☐ Roadway Box

El. Datum



Type of protective cover/lock

Height of top of guard pipe above ground surface ft

Depth of top of riser pipe below ground surface ft

Type of protective casing:

Length ft

Inside Diameter in

Depth of bottom of guard roadway box ft

Type of Seals	Top of Seal (ft)	Thickness (ft)
Concrete	0	1

Type of riser pipe: Schedule 40 PVC

Inside diameter of riser pipe 2.0 in

Type of backfill around riser Sand & Seal (s)

Diameter of borehole 6.0 in

Depth to top of well screen 7 ft

Type of screen Schedule 40 PVC

Screen gauge or size of openings 0.010 in

Diameter of screen 2.0 in

Type of backfill around screen #1 Filter Sand

Depth of bottom of well screen 12.5 ft

Bottom of Silt trap/sump 14.5 ft

Depth of bottom of borehole 14.5 ft

(Not to Scale)

7 ft (Riser Pay Length (L1)) + 5.5 ft (Length of screen (L2)) + 2 ft (Length of silt trap (L3)) = 14.5 ft (Pay length)

COMMENTS:

Form # 3010

APPENDIX C

Air Monitoring Documentation

Dust Monitor Data Summary

Serial no.	D099				
Start Date	27-Nov-06	28-Nov-06	29-Nov-06	30-Nov-06	4-Dec-06
Start Time	11:04:11	9:50:09	07:46:10	7:38:25	7:57:13
Log Period	0:00:30	0:00:30	0:00:30	0:00:30	0:00:30
# of Records	531	757	802	534	965
Max Mass (ug/m^3)	775.4	336.2	82.4	92.6	125.1
Avg Mass (ug/m^3)	53.8	79.5	37.1	17.6	16.8

Serial no.	D293				
Start Date	27-Nov-06	28-Nov-06	29-Nov-06	30-Nov-06	4-Dec-06
Start Time	N/A	8:55:45	7:59:27	7:38:07	8:01:30
Log Period	N/A	0:00:30	0:00:30	0:00:30	0:00:30
# of Records	N/A	871	766	526	956
Max Mass (ug/m^3)	N/A	197.0	99.9	40.6	195.0
Avg Mass (ug/m^3)	N/A	133.7	51.8	25.9	35.0

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 412 Sample Period: 60 sec
Last Calibration Time: 11/27/2006 05:45 Gas Name: Isobutylene
Date: 11/27/2006

Line#	Time	Avg(ppm) STEL
1	5:48:00	0
2	5:49:00	0
3	5:50:00	0.1
4	5:51:00	0.1
5	5:52:00	0.1
6	5:53:00	0.1
7	5:54:00	0.1
8	5:55:00	0.1
9	5:56:00	0.1
10	5:57:00	0.1
11	5:58:00	0.1
12	5:59:00	0.1
13	6:00:00	0.1
14	6:01:00	0.2
15	6:02:00	0.2
16	6:03:00	0.2
17	6:04:00	0.2
18	6:05:00	0.2
19	6:06:00	0.2
20	6:07:00	0.2
21	6:08:00	0.3
22	6:09:00	0.3
23	6:10:00	0.3
24	6:11:00	0.3
25	6:12:00	0.4
26	6:13:00	0.4
27	6:14:00	0.5
28	6:15:00	0.5
29	6:16:00	0.5
30	6:17:00	0.6
31	6:18:00	0.6
32	6:19:00	0.7
33	6:20:00	0.7
34	6:21:00	0.8
35	6:22:00	0.8
36	6:23:00	0.9
37	6:24:00	0.9
38	6:25:00	0.9
39	6:26:00	1
40	6:27:00	1
41	6:28:00	1.1
42	6:29:00	1.1
43	6:30:00	1.2
44	6:31:00	1.2
45	6:32:00	1.2

46	6:33:00	1.3
47	6:34:00	1.3
48	6:35:00	1.3
49	6:36:00	1.4
50	6:37:00	1.4
51	6:38:00	1.4
52	6:39:00	1.5
53	6:40:00	1.5
54	6:41:00	1.5
55	6:42:00	1.5
56	6:43:00	1.6
57	6:44:00	1.6
58	6:45:00	1.6
59	6:46:00	1.7
60	6:47:00	1.7
61	6:48:00	1.7
62	6:49:00	1.8
63	6:50:00	1.8
64	6:51:00	1.8
65	6:52:00	1.8
66	6:53:00	1.9
67	6:54:00	1.9
68	6:55:00	1.9
69	6:56:00	1.9
70	6:57:00	2
71	6:58:00	2
72	6:59:00	2
73	7:00:00	2
74	7:01:00	2
75	7:02:00	2
76	7:03:00	2
77	7:04:00	2
78	7:05:00	2
79	7:06:00	2
80	7:07:00	2
81	7:08:00	2
82	7:09:00	2
83	7:10:00	2
84	7:11:00	2
85	7:12:00	2
86	7:13:00	2
87	7:14:00	2
88	7:15:00	2
89	7:16:00	2
90	7:17:00	2
91	7:18:00	2
92	7:19:00	2.1
93	7:20:00	2.1
94	7:21:00	2.1
95	7:22:00	2.1
96	7:23:00	2.2
97	7:24:00	2.2

98	7:25:00	2.3
99	7:26:00	2.3
100	7:27:00	2.3
101	7:28:00	2.3
102	7:29:00	2.4
103	7:30:00	2.4
104	7:31:00	2.4
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106	7:33:00	2.5
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111	7:38:00	2.6
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118	7:45:00	2.7
119	7:46:00	2.8
120	7:47:00	2.8
121	7:48:00	2.8
122	7:49:00	2.9
123	7:50:00	2.9
124	7:51:00	3
125	7:52:00	3
126	7:53:00	3
127	7:54:00	3
128	7:55:00	3.1
129	7:56:00	3.1
130	7:57:00	3.1
131	7:58:00	3.2
132	7:59:00	3.2
133	8:00:00	3.2
134	8:01:00	3.2
135	8:02:00	3.3
136	8:03:00	3.3
137	8:04:00	3.3
138	8:05:00	3.4
139	8:06:00	3.4
140	8:07:00	3.5
141	8:08:00	3.5
142	8:09:00	3.5
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144	8:11:00	3.6
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146	8:13:00	3.6
147	8:14:00	3.6
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150	8:17:00	3.7
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190	8:57:00	3.2
191	8:58:00	3.2
192	8:59:00	3.1
193	9:00:00	3.1
194	9:01:00	3
195	9:02:00	3
196	9:03:00	2.9
197	9:04:00	2.9
198	9:05:00	2.8
199	9:06:00	2.8
200	9:07:00	2.8
201	9:08:00	2.8

202	9:09:00	2.8
203	9:10:00	2.8
204	9:11:00	2.8
205	9:12:00	2.8
206	9:13:00	2.7
207	9:14:00	2.7
208	9:15:00	2.7
209	9:16:00	2.7
210	9:17:00	2.6
211	9:18:00	2.6
212	9:19:00	2.5
213	9:20:00	2.5
214	9:21:00	2.5
215	9:22:00	2.4
216	9:23:00	2.3
217	9:24:00	2.2
218	9:25:00	2.2
219	9:26:00	2.1
220	9:27:00	2
221	9:28:00	1.9
222	9:29:00	1.8
223	9:30:00	1.8
224	9:31:00	1.7
225	9:32:00	1.6
226	9:33:00	1.5
227	9:34:00	1.5
228	9:35:00	1.4
229	9:36:00	1.3
230	9:37:00	1.2
231	9:38:00	1.1
232	9:39:00	1
233	9:40:00	1
234	9:41:00	0.9
235	9:42:00	0.9
236	9:43:00	0.9
237	9:44:00	0.8
238	9:45:00	0.8
239	9:46:00	0.8
240	9:47:00	0.8
241	9:48:00	0.7
242	9:49:00	0.7
243	9:50:00	0.7
244	9:51:00	0.7
245	9:52:00	0.7
246	9:53:00	0.6
247	9:54:00	0.6
248	9:55:00	0.6
249	9:56:00	0.6
250	9:57:00	0.5
251	9:58:00	0.5
252	9:59:00	0.5
253	10:00:00	0.5

254	10:01:00	0.4
255	10:02:00	0.4
256	10:03:00	0.4
257	10:04:00	0.4
258	10:05:00	0.4
259	10:06:00	0.4
260	10:07:00	0.4
261	10:08:00	0.4
262	10:09:00	0.3
263	10:10:00	0.3
264	10:11:00	0.3
265	10:12:00	0.3
266	10:13:00	0.3
267	10:14:00	0.3
268	10:15:00	0.3
269	10:16:00	0.3
270	10:17:00	0.3
271	10:18:00	0.3
272	10:19:00	0.2
273	10:20:00	0.2
274	10:21:00	0.2
275	10:22:00	0.2
276	10:23:00	0.2
277	10:24:00	0.2
278	10:25:00	0.2
279	10:26:00	0.2
280	10:27:00	0.2
281	10:28:00	0.2
282	10:29:00	0.2
283	10:30:00	0.2
284	10:31:00	0.1
285	10:32:00	0.1
286	10:33:00	0.1
287	10:34:00	0.1
288	10:35:00	0.1
289	10:36:00	0
290	10:37:00	0
291	10:38:00	0
292	10:39:00	0
293	10:40:00	0
294	10:41:00	0
295	10:42:00	0
296	10:43:00	0
297	10:44:00	0
298	10:45:00	0
299	10:46:00	0
300	10:47:00	0
301	10:48:00	0
302	10:49:00	0
303	10:50:00	0
304	10:51:00	0
305	10:52:00	0

306	10:53:00	0
307	10:54:00	0
308	10:55:00	0
309	10:56:00	0
310	10:57:00	0
311	10:58:00	0
312	10:59:00	0
313	11:00:00	0
314	11:01:00	0
315	11:02:00	0
316	11:03:00	0
317	11:04:00	0
318	11:05:00	0
319	11:06:00	0
320	11:07:00	0
321	11:08:00	0
322	11:09:00	0
323	11:10:00	0
324	11:11:00	0
325	11:12:00	0
326	11:13:00	0
327	11:14:00	0
328	11:15:00	0
329	11:16:00	0
330	11:17:00	0
331	11:18:00	0
332	11:19:00	0
333	11:20:00	0
334	11:21:00	0
335	11:22:00	0
336	11:23:00	0
337	11:24:00	0
338	11:25:00	0
339	11:26:00	0.1
340	11:27:00	0.1
341	11:28:00	0.1
342	11:29:00	0.1
343	11:30:00	0.2
344	11:31:00	0.2
345	11:32:00	0.2
346	11:33:00	0.3
347	11:34:00	0.3
348	11:35:00	0.4
349	11:36:00	0.4
350	11:37:00	0.5
351	11:38:00	0.5
352	11:39:00	0.5
353	11:40:00	0.6
354	11:41:00	0.6
355	11:42:00	0.6
356	11:43:00	0.7
357	11:44:00	0.7

358	11:45:00	0.7
359	11:46:00	0.8
360	11:47:00	0.8
361	11:48:00	0.8
362	11:49:00	0.8
363	11:50:00	0.9
364	11:51:00	0.9
365	11:52:00	0.9
366	11:53:00	0.9
367	11:54:00	0.9
368	11:55:00	0.9
369	11:56:00	0.9
370	11:57:00	0.9
371	11:58:00	0.9
372	11:59:00	0.9
373	12:00:00	0.9
374	12:01:00	0.9
375	12:02:00	0.9
376	12:03:00	0.9
377	12:04:00	0.9
378	12:05:00	0.9
379	12:06:00	0.9
380	12:07:00	0.9
381	12:08:00	0.9
382	12:09:00	0.9
383	12:10:00	0.9
384	12:11:00	0.9
385	12:12:00	0.9
386	12:13:00	0.9
387	12:14:00	0.9
388	12:15:00	0.9
389	12:16:00	1.1
390	12:17:00	1.3
391	12:18:00	1.6
392	12:19:00	1.8
393	12:20:00	2.1
394	12:21:00	2.3
395	12:22:00	2.6
396	12:23:00	2.9
397	12:24:00	3.2
398	12:25:00	3.5
399	12:26:00	3.9
400	12:27:00	4.2
401	12:28:00	4.5
402	12:29:00	4.9
403	12:30:00	5.2
404	12:31:00	5.4
405	12:32:00	5.5
406	12:33:00	5.6
407	12:34:00	5.7
408	12:35:00	5.9
409	12:36:00	6

410	12:37:00	6.1
411	12:38:00	6.3
412	12:39:00	6.4

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 111 Sample Period: 60 sec
Last Calibration Time: 11/27/2006 05:45 Gas Name: Isobutylene
Date: 11/28/2006

Line#	Time	Avg(ppm) STEL
1	5:03:00	0
2	5:04:00	0.4
3	5:05:00	0.4
4	5:06:00	0.4
5	5:07:00	0.4
6	5:08:00	0.4
7	5:09:00	0.4
8	5:10:00	0.4
9	5:11:00	0.4
10	5:12:00	0.4
11	5:13:00	0.4
12	5:14:00	0.4
13	5:15:00	0.4
14	5:16:00	0.5
15	5:17:00	0.5
16	5:18:00	0.6
17	5:19:00	0.3
18	5:20:00	0.4
19	5:21:00	0.6
20	5:22:00	0.8
21	5:23:00	1
22	5:24:00	1.3
23	5:25:00	1.6
24	5:26:00	1.9
25	5:27:00	2.4
26	5:28:00	2.8
27	5:29:00	3.3
28	5:30:00	4
29	5:31:00	4.7
30	5:32:00	5.4
31	5:33:00	6.1
32	5:34:00	6.9
33	5:35:00	7.7
34	5:36:00	8.5
35	5:37:00	9.3
36	5:38:00	10
37	5:39:00	10.8
38	5:40:00	11.6
39	5:41:00	12.5
40	5:42:00	13.2
41	5:43:00	14
42	5:44:00	14.8
43	5:45:00	15.5
44	5:46:00	16.1
45	5:47:00	16.8

46	5:48:00	17.5
47	5:49:00	18.2
48	5:50:00	19
49	5:51:00	20
50	5:52:00	20.9
51	5:53:00	21.9
52	5:54:00	22.9
53	5:55:00	23.9
54	5:56:00	24.9
55	5:57:00	26.1
56	5:58:00	27.2
57	5:59:00	28.3
58	6:00:00	29.4
59	6:01:00	30.5
60	6:02:00	31.6
61	6:03:00	32.8
62	6:04:00	34
63	6:05:00	35.1
64	6:06:00	36.1
65	6:07:00	37.1
66	6:08:00	38
67	6:09:00	38.9
68	6:10:00	39.7
69	6:11:00	40.5
70	6:12:00	41.1
71	6:13:00	41.6
72	6:14:00	42.1
73	6:15:00	42.5
74	6:16:00	42.9
75	6:17:00	43.3
76	6:18:00	43.5
77	6:19:00	43.6
78	6:20:00	43.8
79	6:21:00	44
80	6:22:00	44.2
81	6:23:00	44.4
82	6:24:00	44.5
83	6:25:00	44.6
84	6:26:00	44.6
85	6:27:00	44.7
86	6:28:00	44.7
87	6:29:00	44.8
88	6:30:00	44.8
89	6:31:00	44.6
90	6:32:00	44.4
91	6:33:00	44.1
92	6:34:00	43.8
93	6:35:00	43.4
94	6:36:00	42.9
95	6:37:00	42.4
96	6:38:00	41.8
97	6:39:00	41

98	6:40:00	40.3
99	6:41:00	39.5
100	6:42:00	38.7
101	6:43:00	37.9
102	6:44:00	36.9
103	6:45:00	36
104	6:46:00	35.2
105	6:47:00	34.4
106	6:48:00	33.6
107	6:49:00	32.9
108	6:50:00	32.1
109	6:51:00	31.3
110	6:52:00	30.6
111	6:53:00	29.8

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 379 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 06:57 Gas Name: Isobutylene
Date: 11/28/2006

Line#	Time	Avg(ppm) STEL
1	6:59:00	0.1
2	7:00:00	0.1
3	7:01:00	0.2
4	7:02:00	0.3
5	7:03:00	0.4
6	7:04:00	0.4
7	7:05:00	0.4
8	7:06:00	0.4
9	7:07:00	0.4
10	7:08:00	0.4
11	7:09:00	0.4
12	7:10:00	0.4
13	7:11:00	0.4
14	7:12:00	0.4
15	7:13:00	0.4
16	7:14:00	0.3
17	7:15:00	0.3
18	7:16:00	0.2
19	7:17:00	0.1
20	7:18:00	0
21	7:19:00	0
22	7:20:00	0
23	7:21:00	0
24	7:22:00	0
25	7:23:00	0
26	7:24:00	0
27	7:25:00	0
28	7:26:00	0
29	7:27:00	0
30	7:28:00	0

31	7:29:00	0
32	7:30:00	0
33	7:31:00	0
34	7:32:00	0
35	7:33:00	0
36	7:34:00	0
37	7:35:00	0
38	7:36:00	0
39	7:37:00	0
40	7:38:00	0
41	7:39:00	0
42	7:40:00	0
43	7:41:00	0
44	7:42:00	0
45	7:43:00	0
46	7:44:00	0
47	7:45:00	0
48	7:46:00	0
49	7:47:00	0
50	7:48:00	0
51	7:49:00	0
52	7:50:00	0
53	7:51:00	0
54	7:52:00	0
55	7:53:00	0
56	7:54:00	0
57	7:55:00	0
58	7:56:00	0
59	7:57:00	0
60	7:58:00	0
61	7:59:00	0
62	8:00:00	0
63	8:01:00	0
64	8:02:00	0
65	8:03:00	0
66	8:04:00	0
67	8:05:00	0
68	8:06:00	0
69	8:07:00	0
70	8:08:00	0
71	8:09:00	0
72	8:10:00	0
73	8:11:00	0
74	8:12:00	0
75	8:13:00	0
76	8:14:00	0
77	8:15:00	0
78	8:16:00	0
79	8:17:00	0
80	8:18:00	0
81	8:19:00	0
82	8:20:00	0

83	8:21:00	0
84	8:22:00	0
85	8:23:00	0
86	8:24:00	0
87	8:25:00	0
88	8:26:00	0
89	8:27:00	0
90	8:28:00	0
91	8:29:00	0
92	8:30:00	0
93	8:31:00	0
94	8:32:00	0
95	8:33:00	0
96	8:34:00	0
97	8:35:00	0
98	8:36:00	0
99	8:37:00	0
100	8:38:00	0
101	8:39:00	0
102	8:40:00	0
103	8:41:00	0
104	8:42:00	0
105	8:43:00	0
106	8:44:00	0
107	8:45:00	0
108	8:46:00	0
109	8:47:00	0
110	8:48:00	0
111	8:49:00	0
112	8:50:00	0
113	8:51:00	0
114	8:52:00	0
115	8:53:00	0
116	8:54:00	0
117	8:55:00	0
118	8:56:00	0
119	8:57:00	0
120	8:58:00	0
121	8:59:00	0
122	9:00:00	0
123	9:01:00	0
124	9:02:00	0
125	9:03:00	0
126	9:04:00	0
127	9:05:00	0
128	9:06:00	0
129	9:07:00	0
130	9:08:00	0
131	9:09:00	0
132	9:10:00	0
133	9:11:00	0
134	9:12:00	0

135	9:13:00	0
136	9:14:00	0
137	9:15:00	0
138	9:16:00	0
139	9:17:00	0
140	9:18:00	0
141	9:19:00	0
142	9:20:00	0
143	9:21:00	0
144	9:22:00	0
145	9:23:00	0
146	9:24:00	0
147	9:25:00	0
148	9:26:00	0
149	9:27:00	0
150	9:28:00	0
151	9:29:00	0
152	9:30:00	0
153	9:31:00	0
154	9:32:00	0
155	9:33:00	0
156	9:34:00	0
157	9:35:00	0
158	9:36:00	0
159	9:37:00	0
160	9:38:00	0
161	9:39:00	0
162	9:40:00	0
163	9:41:00	0
164	9:42:00	0
165	9:43:00	0
166	9:44:00	0
167	9:45:00	0
168	9:46:00	0
169	9:47:00	0
170	9:48:00	0
171	9:49:00	0
172	9:50:00	0
173	9:51:00	0
174	9:52:00	0
175	9:53:00	0
176	9:54:00	0
177	9:55:00	0
178	9:56:00	0
179	9:57:00	0
180	9:58:00	0
181	9:59:00	0
182	10:00:00	0
183	10:01:00	0
184	10:02:00	0
185	10:03:00	0
186	10:04:00	0

187	10:05:00	0
188	10:06:00	0
189	10:07:00	0
190	10:08:00	0
191	10:09:00	0
192	10:10:00	0
193	10:11:00	0
194	10:12:00	0
195	10:13:00	0
196	10:14:00	0
197	10:15:00	0
198	10:16:00	0
199	10:17:00	0
200	10:18:00	0
201	10:19:00	0
202	10:20:00	0
203	10:21:00	0
204	10:22:00	0
205	10:23:00	0
206	10:24:00	0
207	10:25:00	0
208	10:26:00	0
209	10:27:00	0
210	10:28:00	0
211	10:29:00	0
212	10:30:00	0
213	10:31:00	0
214	10:32:00	0
215	10:33:00	0
216	10:34:00	0
217	10:35:00	0
218	10:36:00	0
219	10:37:00	0
220	10:38:00	0
221	10:39:00	0
222	10:40:00	0
223	10:41:00	0
224	10:42:00	0
225	10:43:00	0
226	10:44:00	0
227	10:45:00	0
228	10:46:00	0
229	10:47:00	0
230	10:48:00	0
231	10:49:00	0
232	10:50:00	0
233	10:51:00	0
234	10:52:00	0
235	10:53:00	0
236	10:54:00	0
237	10:55:00	0
238	10:56:00	0

239	10:57:00	0
240	10:58:00	0
241	10:59:00	0
242	11:00:00	0
243	11:01:00	0
244	11:02:00	0
245	11:03:00	0
246	11:04:00	0
247	11:05:00	0
248	11:06:00	0
249	11:07:00	0
250	11:08:00	0
251	11:09:00	0
252	11:10:00	0
253	11:11:00	0
254	11:12:00	0
255	11:13:00	0
256	11:14:00	0
257	11:15:00	0
258	11:16:00	0
259	11:17:00	0
260	11:18:00	0
261	11:19:00	0
262	11:20:00	0
263	11:21:00	0
264	11:22:00	0
265	11:23:00	0
266	11:24:00	0
267	11:25:00	0
268	11:26:00	0
269	11:27:00	0
270	11:28:00	0
271	11:29:00	0
272	11:30:00	0
273	11:31:00	0
274	11:32:00	0
275	11:33:00	0
276	11:34:00	0
277	11:35:00	0
278	11:36:00	0
279	11:37:00	0
280	11:38:00	0
281	11:39:00	0
282	11:40:00	0
283	11:41:00	0
284	11:42:00	0
285	11:43:00	0
286	11:44:00	0
287	11:45:00	0
288	11:46:00	0
289	11:47:00	0
290	11:48:00	0

291	11:49:00	0
292	11:50:00	0
293	11:51:00	0
294	11:52:00	0
295	11:53:00	0
296	11:54:00	0
297	11:55:00	0
298	11:56:00	0
299	11:57:00	0
300	11:58:00	0
301	11:59:00	0
302	12:00:00	0
303	12:01:00	0
304	12:02:00	0
305	12:03:00	0
306	12:04:00	0
307	12:05:00	0
308	12:06:00	0
309	12:07:00	0
310	12:08:00	0
311	12:09:00	0
312	12:10:00	0
313	12:11:00	0
314	12:12:00	0
315	12:13:00	0
316	12:14:00	0
317	12:15:00	0
318	12:16:00	0
319	12:17:00	0
320	12:18:00	0
321	12:19:00	0
322	12:20:00	0
323	12:21:00	0
324	12:22:00	0
325	12:23:00	0
326	12:24:00	0
327	12:25:00	0
328	12:26:00	0
329	12:27:00	0
330	12:28:00	0
331	12:29:00	0
332	12:30:00	0
333	12:31:00	0
334	12:32:00	0
335	12:33:00	0
336	12:34:00	0
337	12:35:00	0
338	12:36:00	0
339	12:37:00	0
340	12:38:00	0
341	12:39:00	0
342	12:40:00	0

343	12:41:00	0
344	12:42:00	0
345	12:43:00	0
346	12:44:00	0
347	12:45:00	0
348	12:46:00	0
349	12:47:00	0
350	12:48:00	0
351	12:49:00	0
352	12:50:00	0
353	12:51:00	0
354	12:52:00	0
355	12:53:00	0
356	12:54:00	0
357	12:55:00	0
358	12:56:00	0
359	12:57:00	0
360	12:58:00	0
361	12:59:00	0
362	13:00:00	0
363	13:01:00	0
364	13:02:00	0
365	13:03:00	0
366	13:04:00	0
367	13:05:00	0
368	13:06:00	0
369	13:07:00	0
370	13:08:00	0
371	13:09:00	0
372	13:10:00	0
373	13:11:00	0
374	13:12:00	0
375	13:13:00	0
376	13:14:00	0
377	13:15:00	0
378	13:16:00	0
379	13:17:00	0

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 417 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 06:57 Gas Name: Isobutylene
Date: 11/29/2006

Line#	Time	Avg(ppm) STEL
1	4:35:00	0
2	4:36:00	0
3	4:37:00	0
4	4:38:00	0
5	4:39:00	0
6	4:40:00	0
7	4:41:00	0
8	4:42:00	0
9	4:43:00	0
10	4:44:00	0
11	4:45:00	0
12	4:46:00	0
13	4:47:00	0
14	4:48:00	0
15	4:49:00	0
16	4:50:00	0
17	4:51:00	0
18	4:52:00	0
19	4:53:00	0
20	4:54:00	0
21	4:55:00	0
22	4:56:00	0
23	4:57:00	0
24	4:58:00	0
25	4:59:00	0
26	5:00:00	0
27	5:01:00	0
28	5:02:00	0
29	5:03:00	0
30	5:04:00	0
31	5:05:00	0
32	5:06:00	0
33	5:07:00	0
34	5:08:00	0
35	5:09:00	0
36	5:10:00	0
37	5:11:00	0
38	5:12:00	0
39	5:13:00	0
40	5:14:00	0
41	5:15:00	0
42	5:16:00	0
43	5:17:00	0
44	5:18:00	0
45	5:19:00	0

46	5:20:00	0
47	5:21:00	0
48	5:22:00	0
49	5:23:00	0
50	5:24:00	0
51	5:25:00	0
52	5:26:00	0
53	5:27:00	0
54	5:28:00	0
55	5:29:00	0
56	5:30:00	0
57	5:31:00	0
58	5:32:00	0
59	5:33:00	0
60	5:34:00	0
61	5:35:00	0
62	5:36:00	0
63	5:37:00	0
64	5:38:00	0
65	5:39:00	0
66	5:40:00	0
67	5:41:00	0
68	5:42:00	0
69	5:43:00	0
70	5:44:00	0
71	5:45:00	0
72	5:46:00	0
73	5:47:00	0
74	5:48:00	0
75	5:49:00	0
76	5:50:00	0
77	5:51:00	0
78	5:52:00	0
79	5:53:00	0
80	5:54:00	0
81	5:55:00	0
82	5:56:00	0
83	5:57:00	0
84	5:58:00	0
85	5:59:00	0
86	6:00:00	0
87	6:01:00	0
88	6:02:00	0
89	6:03:00	0
90	6:04:00	0
91	6:05:00	0
92	6:06:00	0
93	6:07:00	0
94	6:08:00	0
95	6:09:00	0
96	6:10:00	0
97	6:11:00	0

98	6:12:00	0
99	6:13:00	0
100	6:14:00	0
101	6:15:00	0
102	6:16:00	0
103	6:17:00	0
104	6:18:00	0
105	6:19:00	0
106	6:20:00	0
107	6:21:00	0
108	6:22:00	0
109	6:23:00	0
110	6:24:00	0
111	6:25:00	0
112	6:26:00	0
113	6:27:00	0
114	6:28:00	0
115	6:29:00	0
116	6:30:00	0
117	6:31:00	0
118	6:32:00	0
119	6:33:00	0
120	6:34:00	0
121	6:35:00	0
122	6:36:00	0
123	6:37:00	0
124	6:38:00	0
125	6:39:00	0
126	6:40:00	0
127	6:41:00	0
128	6:42:00	0
129	6:43:00	0
130	6:44:00	0
131	6:45:00	0
132	6:46:00	0
133	6:47:00	0
134	6:48:00	0
135	6:49:00	0
136	6:50:00	0
137	6:51:00	0
138	6:52:00	0
139	6:53:00	0
140	6:54:00	0
141	6:55:00	0
142	6:56:00	0
143	6:57:00	0
144	6:58:00	0
145	6:59:00	0
146	7:00:00	0
147	7:01:00	0
148	7:02:00	0
149	7:03:00	0

150	7:04:00	0
151	7:05:00	0
152	7:06:00	0
153	7:07:00	0
154	7:08:00	0
155	7:09:00	0
156	7:10:00	0
157	7:11:00	0
158	7:12:00	0
159	7:13:00	0
160	7:14:00	0
161	7:15:00	0
162	7:16:00	0
163	7:17:00	0
164	7:18:00	0
165	7:19:00	0
166	7:20:00	0
167	7:21:00	0
168	7:22:00	0
169	7:23:00	0
170	7:24:00	0
171	7:25:00	0
172	7:26:00	0
173	7:27:00	0
174	7:28:00	0
175	7:29:00	0
176	7:30:00	0
177	7:31:00	0
178	7:32:00	0
179	7:33:00	0
180	7:34:00	0
181	7:35:00	0
182	7:36:00	0
183	7:37:00	0
184	7:38:00	0
185	7:39:00	0
186	7:40:00	0
187	7:41:00	0
188	7:42:00	0
189	7:43:00	0
190	7:44:00	0
191	7:45:00	0
192	7:46:00	0
193	7:47:00	0
194	7:48:00	0
195	7:49:00	0
196	7:50:00	0
197	7:51:00	0
198	7:52:00	0
199	7:53:00	0
200	7:54:00	0
201	7:55:00	0

202	7:56:00	0
203	7:57:00	0
204	7:58:00	0
205	7:59:00	0
206	8:00:00	0
207	8:01:00	0
208	8:02:00	0
209	8:03:00	0
210	8:04:00	0
211	8:05:00	0
212	8:06:00	0
213	8:07:00	0
214	8:08:00	0
215	8:09:00	0
216	8:10:00	0
217	8:11:00	0
218	8:12:00	0
219	8:13:00	0
220	8:14:00	0
221	8:15:00	0
222	8:16:00	0
223	8:17:00	0
224	8:18:00	0
225	8:19:00	0
226	8:20:00	0
227	8:21:00	0
228	8:22:00	0
229	8:23:00	0
230	8:24:00	0
231	8:25:00	0
232	8:26:00	0
233	8:27:00	0
234	8:28:00	0
235	8:29:00	0
236	8:30:00	0
237	8:31:00	0
238	8:32:00	0
239	8:33:00	0
240	8:34:00	0
241	8:35:00	0
242	8:36:00	0
243	8:37:00	0
244	8:38:00	0
245	8:39:00	0
246	8:40:00	0
247	8:41:00	0
248	8:42:00	0
249	8:43:00	0
250	8:44:00	0
251	8:45:00	0
252	8:46:00	0
253	8:47:00	0

254	8:48:00	0
255	8:49:00	0
256	8:50:00	0
257	8:51:00	0
258	8:52:00	0
259	8:53:00	0
260	8:54:00	0
261	8:55:00	0
262	8:56:00	0
263	8:57:00	0
264	8:58:00	0
265	8:59:00	0
266	9:00:00	0
267	9:01:00	0
268	9:02:00	0
269	9:03:00	0
270	9:04:00	0
271	9:05:00	0
272	9:06:00	0
273	9:07:00	0
274	9:08:00	0
275	9:09:00	0
276	9:10:00	0
277	9:11:00	0
278	9:12:00	0
279	9:13:00	0
280	9:14:00	0
281	9:15:00	0
282	9:16:00	0
283	9:17:00	0
284	9:18:00	0
285	9:19:00	0
286	9:20:00	0
287	9:21:00	0
288	9:22:00	0
289	9:23:00	0
290	9:24:00	0
291	9:25:00	0
292	9:26:00	0
293	9:27:00	0
294	9:28:00	0
295	9:29:00	0
296	9:30:00	0
297	9:31:00	0
298	9:32:00	0
299	9:33:00	0
300	9:34:00	0
301	9:35:00	0
302	9:36:00	0
303	9:37:00	0
304	9:38:00	0
305	9:39:00	0

306	9:40:00	0
307	9:41:00	0
308	9:42:00	0
309	9:43:00	0
310	9:44:00	0
311	9:45:00	0
312	9:46:00	0
313	9:47:00	0
314	9:48:00	0
315	9:49:00	0
316	9:50:00	0
317	9:51:00	0
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319	9:53:00	0
320	9:54:00	0
321	9:55:00	0
322	9:56:00	0
323	9:57:00	0
324	9:58:00	0
325	9:59:00	0
326	10:00:00	0
327	10:01:00	0
328	10:02:00	0
329	10:03:00	0
330	10:04:00	0
331	10:05:00	0
332	10:06:00	0
333	10:07:00	0
334	10:08:00	0
335	10:09:00	0
336	10:10:00	0
337	10:11:00	0
338	10:12:00	0
339	10:13:00	0
340	10:14:00	0
341	10:15:00	0
342	10:16:00	0
343	10:17:00	0
344	10:18:00	0
345	10:19:00	0
346	10:20:00	0
347	10:21:00	0
348	10:22:00	0
349	10:23:00	0
350	10:24:00	0
351	10:25:00	0
352	10:26:00	0
353	10:27:00	0
354	10:28:00	0
355	10:29:00	0
356	10:30:00	0
357	10:31:00	0

358	10:32:00	0
359	10:33:00	0
360	10:34:00	0
361	10:35:00	0
362	10:36:00	0
363	10:37:00	0
364	10:38:00	0
365	10:39:00	0
366	10:40:00	0
367	10:41:00	0
368	10:42:00	0
369	10:43:00	0
370	10:44:00	0
371	10:45:00	0
372	10:46:00	0
373	10:47:00	0
374	10:48:00	0
375	10:49:00	0
376	10:50:00	0
377	10:51:00	0
378	10:52:00	0
379	10:53:00	0
380	10:54:00	0
381	10:55:00	0
382	10:56:00	0
383	10:57:00	0
384	10:58:00	0
385	10:59:00	0
386	11:00:00	0
387	11:01:00	0
388	11:02:00	0
389	11:03:00	0
390	11:04:00	0
391	11:05:00	0
392	11:06:00	0
393	11:07:00	0
394	11:08:00	0
395	11:09:00	0
396	11:10:00	0
397	11:11:00	0
398	11:12:00	0
399	11:13:00	0
400	11:14:00	0
401	11:15:00	0
402	11:16:00	0
403	11:17:00	0
404	11:18:00	0
405	11:19:00	0
406	11:20:00	0
407	11:21:00	0
408	11:22:00	0
409	11:23:00	0

410	11:24:00	0
411	11:25:00	0
412	11:26:00	0
413	11:27:00	0
414	11:28:00	0
415	11:29:00	0
416	11:30:00	0
417	11:31:00	0

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 452 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 06:57 Gas Name: Isobutylene
Date: 11/30/2006

Line#	Time	Avg(ppm) STEL
1	4:46:00	0
2	4:47:00	0
3	4:48:00	0
4	4:49:00	0
5	4:50:00	0
6	4:51:00	0
7	4:52:00	0
8	4:53:00	0
9	4:54:00	0
10	4:55:00	0
11	4:56:00	0
12	4:57:00	0
13	4:58:00	0
14	4:59:00	0
15	5:00:00	0
16	5:01:00	0
17	5:02:00	0
18	5:03:00	0
19	5:04:00	0
20	5:05:00	0
21	5:06:00	0
22	5:07:00	0
23	5:08:00	0
24	5:09:00	0
25	5:10:00	0
26	5:11:00	0
27	5:12:00	0
28	5:13:00	0
29	5:14:00	0
30	5:15:00	0
31	5:16:00	0
32	5:17:00	0
33	5:18:00	0
34	5:19:00	0
35	5:20:00	0
36	5:21:00	0
37	5:22:00	0
38	5:23:00	0
39	5:24:00	0
40	5:25:00	0
41	5:26:00	0
42	5:27:00	0
43	5:28:00	0
44	5:29:00	0
45	5:30:00	0

46	5:31:00	0
47	5:32:00	0
48	5:33:00	0
49	5:34:00	0
50	5:35:00	0
51	5:36:00	0
52	5:37:00	0
53	5:38:00	0
54	5:39:00	0
55	5:40:00	0
56	5:41:00	0
57	5:42:00	0
58	5:43:00	0
59	5:44:00	0
60	5:45:00	0
61	5:46:00	0
62	5:47:00	0
63	5:48:00	0
64	5:49:00	0
65	5:50:00	0
66	5:51:00	0
67	5:52:00	0
68	5:53:00	0
69	5:54:00	0
70	5:55:00	0
71	5:56:00	0
72	5:57:00	0
73	5:58:00	0
74	5:59:00	0
75	6:00:00	0
76	6:01:00	0
77	6:02:00	0
78	6:03:00	0
79	6:04:00	0
80	6:05:00	0
81	6:06:00	0
82	6:07:00	0
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84	6:09:00	0
85	6:10:00	0
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88	6:13:00	0
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90	6:15:00	0
91	6:16:00	0
92	6:17:00	0
93	6:18:00	0
94	6:19:00	0
95	6:20:00	0
96	6:21:00	0
97	6:22:00	0

98	6:23:00	0
99	6:24:00	0
100	6:25:00	0
101	6:26:00	0
102	6:27:00	0
103	6:28:00	0
104	6:29:00	0
105	6:30:00	0
106	6:31:00	0
107	6:32:00	0
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111	6:36:00	0
112	6:37:00	0
113	6:38:00	0
114	6:39:00	0
115	6:40:00	0
116	6:41:00	0
117	6:42:00	0
118	6:43:00	0
119	6:44:00	0
120	6:45:00	0
121	6:46:00	0
122	6:47:00	0
123	6:48:00	0
124	6:49:00	0
125	6:50:00	0
126	6:51:00	0
127	6:52:00	0
128	6:53:00	0
129	6:54:00	0
130	6:55:00	0
131	6:56:00	0
132	6:57:00	0
133	6:58:00	0
134	6:59:00	0
135	7:00:00	0
136	7:01:00	0
137	7:02:00	0
138	7:03:00	0
139	7:04:00	0
140	7:05:00	0
141	7:06:00	0
142	7:07:00	0
143	7:08:00	0
144	7:09:00	0
145	7:10:00	0
146	7:11:00	0
147	7:12:00	0
148	7:13:00	0
149	7:14:00	0

150	7:15:00	0
151	7:16:00	0
152	7:17:00	0
153	7:18:00	0
154	7:19:00	0
155	7:20:00	0
156	7:21:00	0
157	7:22:00	0
158	7:23:00	0
159	7:24:00	0
160	7:25:00	0
161	7:26:00	0
162	7:27:00	0
163	7:28:00	0
164	7:29:00	0
165	7:30:00	0
166	7:31:00	0
167	7:32:00	0
168	7:33:00	0
169	7:34:00	0
170	7:35:00	0
171	7:36:00	0
172	7:37:00	0
173	7:38:00	0
174	7:39:00	0
175	7:40:00	0
176	7:41:00	0
177	7:42:00	0
178	7:43:00	0
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180	7:45:00	0
181	7:46:00	0
182	7:47:00	0
183	7:48:00	0
184	7:49:00	0
185	7:50:00	0
186	7:51:00	0
187	7:52:00	0
188	7:53:00	0
189	7:54:00	0
190	7:55:00	0
191	7:56:00	0
192	7:57:00	0
193	7:58:00	0
194	7:59:00	0
195	8:00:00	0
196	8:01:00	0
197	8:02:00	0
198	8:03:00	0
199	8:04:00	0
200	8:05:00	0
201	8:06:00	0

202	8:07:00	0
203	8:08:00	0
204	8:09:00	0
205	8:10:00	0
206	8:11:00	0
207	8:12:00	0
208	8:13:00	0
209	8:14:00	0
210	8:15:00	0
211	8:16:00	0
212	8:17:00	0
213	8:18:00	0
214	8:19:00	0
215	8:20:00	0
216	8:21:00	0
217	8:22:00	0
218	8:23:00	0
219	8:24:00	0
220	8:25:00	0
221	8:26:00	0
222	8:27:00	0
223	8:28:00	0
224	8:29:00	0
225	8:30:00	0
226	8:31:00	0
227	8:32:00	0
228	8:33:00	0
229	8:34:00	0
230	8:35:00	0
231	8:36:00	0
232	8:37:00	0
233	8:38:00	0
234	8:39:00	0
235	8:40:00	0
236	8:41:00	0
237	8:42:00	0
238	8:43:00	0
239	8:44:00	0
240	8:45:00	0
241	8:46:00	0
242	8:47:00	0
243	8:48:00	0
244	8:49:00	0
245	8:50:00	0
246	8:51:00	0
247	8:52:00	0
248	8:53:00	0
249	8:54:00	0
250	8:55:00	0
251	8:56:00	0
252	8:57:00	0
253	8:58:00	0

254	8:59:00	0
255	9:00:00	0
256	9:01:00	0
257	9:02:00	0
258	9:03:00	0
259	9:04:00	0
260	9:05:00	0
261	9:06:00	0
262	9:07:00	0
263	9:08:00	0
264	9:09:00	0
265	9:10:00	0
266	9:11:00	0
267	9:12:00	0
268	9:13:00	0
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270	9:15:00	0
271	9:16:00	0
272	9:17:00	0
273	9:18:00	0
274	9:19:00	0
275	9:20:00	0
276	9:21:00	0
277	9:22:00	0
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279	9:24:00	0
280	9:25:00	0
281	9:26:00	0
282	9:27:00	0
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286	9:31:00	0
287	9:32:00	0
288	9:33:00	0
289	9:34:00	0
290	9:35:00	0
291	9:36:00	0
292	9:37:00	0
293	9:38:00	0
294	9:39:00	0
295	9:40:00	0
296	9:41:00	0
297	9:42:00	0
298	9:43:00	0
299	9:44:00	0
300	9:45:00	0
301	9:46:00	0
302	9:47:00	0
303	9:48:00	0
304	9:49:00	0
305	9:50:00	0

306	9:51:00	0
307	9:52:00	0
308	9:53:00	0
309	9:54:00	0
310	9:55:00	0
311	9:56:00	0
312	9:57:00	0
313	9:58:00	0
314	9:59:00	0
315	10:00:00	0
316	10:01:00	0
317	10:02:00	0
318	10:03:00	0
319	10:04:00	0
320	10:05:00	0
321	10:06:00	0
322	10:07:00	0
323	10:08:00	0
324	10:09:00	0
325	10:10:00	0
326	10:11:00	0
327	10:12:00	0
328	10:13:00	0
329	10:14:00	0
330	10:15:00	0
331	10:16:00	0
332	10:17:00	0
333	10:18:00	0
334	10:19:00	0
335	10:20:00	0
336	10:21:00	0
337	10:22:00	0
338	10:23:00	0
339	10:24:00	0
340	10:25:00	0
341	10:26:00	0
342	10:27:00	0
343	10:28:00	0
344	10:29:00	0
345	10:30:00	0
346	10:31:00	0
347	10:32:00	0
348	10:33:00	0
349	10:34:00	0
350	10:35:00	0
351	10:36:00	0
352	10:37:00	0
353	10:38:00	0
354	10:39:00	0
355	10:40:00	0
356	10:41:00	0
357	10:42:00	0

358	10:43:00	0
359	10:44:00	0
360	10:45:00	0
361	10:46:00	0
362	10:47:00	0
363	10:48:00	0
364	10:49:00	0
365	10:50:00	0
366	10:51:00	0
367	10:52:00	0
368	10:53:00	0
369	10:54:00	0
370	10:55:00	0
371	10:56:00	0
372	10:57:00	0
373	10:58:00	0
374	10:59:00	0
375	11:00:00	0
376	11:01:00	0
377	11:02:00	0
378	11:03:00	0
379	11:04:00	0
380	11:05:00	0
381	11:06:00	0
382	11:07:00	0
383	11:08:00	0
384	11:09:00	0
385	11:10:00	0
386	11:11:00	0
387	11:12:00	0
388	11:13:00	0
389	11:14:00	0
390	11:15:00	0
391	11:16:00	0
392	11:17:00	0
393	11:18:00	0
394	11:19:00	0
395	11:20:00	0
396	11:21:00	0
397	11:22:00	0
398	11:23:00	0
399	11:24:00	0
400	11:25:00	0
401	11:26:00	0
402	11:27:00	0
403	11:28:00	0
404	11:29:00	0
405	11:30:00	0
406	11:31:00	0
407	11:32:00	0
408	11:33:00	0
409	11:34:00	0

410	11:35:00	0
411	11:36:00	0
412	11:37:00	0
413	11:38:00	0
414	11:39:00	0
415	11:40:00	0
416	11:41:00	0
417	11:42:00	0
418	11:43:00	0
419	11:44:00	0
420	11:45:00	0
421	11:46:00	0
422	11:47:00	0
423	11:48:00	0
424	11:49:00	0
425	11:50:00	0
426	11:51:00	0
427	11:52:00	0
428	11:53:00	0
429	11:54:00	0
430	11:55:00	0
431	11:56:00	0
432	11:57:00	0
433	11:58:00	0
434	11:59:00	0
435	12:00:00	0
436	12:01:00	0
437	12:02:00	0
438	12:03:00	0
439	12:04:00	0
440	12:05:00	0
441	12:06:00	0
442	12:07:00	0
443	12:08:00	0
444	12:09:00	0
445	12:10:00	0
446	12:11:00	0
447	12:12:00	0
448	12:13:00	0
449	12:14:00	0
450	12:15:00	0
451	12:16:00	0
452	12:17:00	0

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 100 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 06:57 Gas Name: Isobutylene
Date: 12/1/2006

Line#	Time	Avg(ppm) STEL
1	4:55:00	0
2	4:56:00	0
3	4:57:00	0
4	4:58:00	0
5	4:59:00	0
6	5:00:00	0
7	5:01:00	0
8	5:02:00	0
9	5:03:00	0
10	5:04:00	0
11	5:05:00	0
12	5:06:00	0
13	5:07:00	0
14	5:08:00	0
15	5:09:00	0
16	5:10:00	0
17	5:11:00	0
18	5:12:00	0
19	5:13:00	0
20	5:14:00	0
21	5:15:00	0
22	5:16:00	0
23	5:17:00	0
24	5:18:00	0
25	5:19:00	0
26	5:20:00	0
27	5:21:00	0
28	5:22:00	0
29	5:23:00	0
30	5:24:00	0
31	5:25:00	0
32	5:26:00	0
33	5:27:00	0
34	5:28:00	0
35	5:29:00	0
36	5:30:00	0
37	5:31:00	0
38	5:32:00	0
39	5:33:00	0
40	5:34:00	0
41	5:35:00	0
42	5:36:00	0
43	5:37:00	0
44	5:38:00	0
45	5:39:00	0

46	5:40:00	0
47	5:41:00	0
48	5:42:00	0
49	5:43:00	0
50	5:44:00	0
51	5:45:00	0
52	5:46:00	0
53	5:47:00	0
54	5:48:00	0
55	5:49:00	0
56	5:50:00	0
57	5:51:00	0
58	5:52:00	0
59	5:53:00	0
60	5:54:00	0
61	5:55:00	0.1
62	5:56:00	0.9
63	5:57:00	2
64	5:58:00	3.6
65	5:59:00	5.5
66	6:00:00	7.8
67	6:01:00	11.2
68	6:02:00	14.5
69	6:03:00	18.1
70	6:04:00	20.7
71	6:05:00	22.8
72	6:06:00	25.7
73	6:07:00	29.3
74	6:08:00	32
75	6:09:00	34.5
76	6:10:00	36.9
77	6:11:00	38
78	6:12:00	38.1
79	6:13:00	37.5
80	6:14:00	36.4
81	6:15:00	34.7
82	6:16:00	32.3
83	6:17:00	29.7
84	6:18:00	26.7
85	6:19:00	24.6
86	6:20:00	23.2
87	6:21:00	20.7
88	6:22:00	20
89	6:23:00	25.5
90	6:24:00	29.6
91	6:25:00	33.9
92	6:26:00	39.2
93	6:27:00	43.8
94	6:28:00	48.4
95	6:29:00	53.1
96	6:30:00	57.7
97	6:31:00	62

98	6:32:00	67.1
99	6:33:00	72.2
100	6:34:00	78.1

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 010066
Data Points: 487 Sample Period: 60 sec
Last Calibration Time: 12/4/2006 05:01 Gas Name: Isobutylene
Date: 12/4/2006

Line#	Time	Avg(ppm) STEL
1	5:01:00	0
2	5:02:00	0
3	5:03:00	0
4	5:04:00	0
5	5:05:00	0
6	5:06:00	0
7	5:07:00	0
8	5:08:00	0
9	5:09:00	0
10	5:10:00	0
11	5:11:00	0
12	5:12:00	0
13	5:13:00	0
14	5:14:00	0
15	5:15:00	0.1
16	5:16:00	0.1
17	5:17:00	0.1
18	5:18:00	0.1
19	5:19:00	0.1
20	5:20:00	0.1
21	5:21:00	0.1
22	5:22:00	0.2
23	5:23:00	0.2
24	5:24:00	0.2
25	5:25:00	0.2
26	5:26:00	0.2
27	5:27:00	0.2
28	5:28:00	0.2
29	5:29:00	0.2
30	5:30:00	0.2
31	5:31:00	0.2
32	5:32:00	0.2
33	5:33:00	0.2
34	5:34:00	0.2
35	5:35:00	0.2
36	5:36:00	0.2
37	5:37:00	0.2
38	5:38:00	0.2
39	5:39:00	0.3
40	5:40:00	0.3
41	5:41:00	0.3
42	5:42:00	0.3
43	5:43:00	0.3
44	5:44:00	0.3
45	5:45:00	0.3

46	5:46:00	0.4
47	5:47:00	0.4
48	5:48:00	0.4
49	5:49:00	0.4
50	5:50:00	0.4
51	5:51:00	0.4
52	5:52:00	0.4
53	5:53:00	0.5
54	5:54:00	0.5
55	5:55:00	0.5
56	5:56:00	0.5
57	5:57:00	0.5
58	5:58:00	0.5
59	5:59:00	0.6
60	6:00:00	0.6
61	6:01:00	0.6
62	6:02:00	0.6
63	6:03:00	0.6
64	6:04:00	0.7
65	6:05:00	0.7
66	6:06:00	0.7
67	6:07:00	0.8
68	6:08:00	0.8
69	6:09:00	0.8
70	6:10:00	0.9
71	6:11:00	0.9
72	6:12:00	0.9
73	6:13:00	0.9
74	6:14:00	0.9
75	6:15:00	1
76	6:16:00	1
77	6:17:00	1
78	6:18:00	1
79	6:19:00	1
80	6:20:00	1
81	6:21:00	1
82	6:22:00	1
83	6:23:00	1
84	6:24:00	1
85	6:25:00	1
86	6:26:00	1
87	6:27:00	1
88	6:28:00	0.9
89	6:29:00	0.9
90	6:30:00	0.9
91	6:31:00	0.9
92	6:32:00	0.9
93	6:33:00	0.9
94	6:34:00	0.9
95	6:35:00	0.9
96	6:36:00	0.9
97	6:37:00	0.9

98	6:38:00	0.9
99	6:39:00	0.9
100	6:40:00	0.9
101	6:41:00	0.9
102	6:42:00	0.9
103	6:43:00	0.9
104	6:44:00	0.9
105	6:45:00	0.9
106	6:46:00	0.9
107	6:47:00	0.9
108	6:48:00	1
109	6:49:00	1
110	6:50:00	1
111	6:51:00	1
112	6:52:00	1
113	6:53:00	1
114	6:54:00	1.1
115	6:55:00	1.1
116	6:56:00	1.1
117	6:57:00	1.1
118	6:58:00	1.1
119	6:59:00	1.1
120	7:00:00	1.1
121	7:01:00	1.1
122	7:02:00	1.1
123	7:03:00	1.1
124	7:04:00	1.1
125	7:05:00	1.1
126	7:06:00	1
127	7:07:00	1
128	7:08:00	1
129	7:09:00	1
130	7:10:00	1
131	7:11:00	0.9
132	7:12:00	0.9
133	7:13:00	0.9
134	7:14:00	0.9
135	7:15:00	0.9
136	7:16:00	0.9
137	7:17:00	0.9
138	7:18:00	0.9
139	7:19:00	0.8
140	7:20:00	0.8
141	7:21:00	0.8
142	7:22:00	0.8
143	7:23:00	0.8
144	7:24:00	0.8
145	7:25:00	0.8
146	7:26:00	0.8
147	7:27:00	0.8
148	7:28:00	0.8
149	7:29:00	0.8

150	7:30:00	0.8
151	7:31:00	0.8
152	7:32:00	0.8
153	7:33:00	0.8
154	7:34:00	0.8
155	7:35:00	0.8
156	7:36:00	0.9
157	7:37:00	0.9
158	7:38:00	0.8
159	7:39:00	0.8
160	7:40:00	0.8
161	7:41:00	0.8
162	7:42:00	0.8
163	7:43:00	0.8
164	7:44:00	0.8
165	7:45:00	0.8
166	7:46:00	0.8
167	7:47:00	0.8
168	7:48:00	0.8
169	7:49:00	0.8
170	7:50:00	0.8
171	7:51:00	0.8
172	7:52:00	0.8
173	7:53:00	0.8
174	7:54:00	0.8
175	7:55:00	0.8
176	7:56:00	0.8
177	7:57:00	0.9
178	7:58:00	0.9
179	7:59:00	0.9
180	8:00:00	0.9
181	8:01:00	0.9
182	8:02:00	0.9
183	8:03:00	0.9
184	8:04:00	0.9
185	8:05:00	0.9
186	8:06:00	0.9
187	8:07:00	0.9
188	8:08:00	0.9
189	8:09:00	0.9
190	8:10:00	0.9
191	8:11:00	0.9
192	8:12:00	0.9
193	8:13:00	0.9
194	8:14:00	0.9
195	8:15:00	0.9
196	8:16:00	0.9
197	8:17:00	0.9
198	8:18:00	0.9
199	8:19:00	0.9
200	8:20:00	0.9
201	8:21:00	0.9

202	8:22:00	0.9
203	8:23:00	0.9
204	8:24:00	0.9
205	8:25:00	0.9
206	8:26:00	1
207	8:27:00	1
208	8:28:00	1
209	8:29:00	1
210	8:30:00	1
211	8:31:00	1
212	8:32:00	1
213	8:33:00	1
214	8:34:00	1
215	8:35:00	1
216	8:36:00	1
217	8:37:00	1
218	8:38:00	1
219	8:39:00	1
220	8:40:00	1
221	8:41:00	1
222	8:42:00	1
223	8:43:00	1
224	8:44:00	1.1
225	8:45:00	1.1
226	8:46:00	1.1
227	8:47:00	1.1
228	8:48:00	1.1
229	8:49:00	1.1
230	8:50:00	1.1
231	8:51:00	1.1
232	8:52:00	1.1
233	8:53:00	1.1
234	8:54:00	1.1
235	8:55:00	1.1
236	8:56:00	1.1
237	8:57:00	1.1
238	8:58:00	1.1
239	8:59:00	1.1
240	9:00:00	1.1
241	9:01:00	1.1
242	9:02:00	1.1
243	9:03:00	1.1
244	9:04:00	1.1
245	9:05:00	1.1
246	9:06:00	1.1
247	9:07:00	1.1
248	9:08:00	1.1
249	9:09:00	1.1
250	9:10:00	1.1
251	9:11:00	1.1
252	9:12:00	1.1
253	9:13:00	1.1

254	9:14:00	1.1
255	9:15:00	1.1
256	9:16:00	1.1
257	9:17:00	1.1
258	9:18:00	1.1
259	9:19:00	1.1
260	9:20:00	1.1
261	9:21:00	1
262	9:22:00	1
263	9:23:00	1
264	9:24:00	0.9
265	9:25:00	0.9
266	9:26:00	0.9
267	9:27:00	0.9
268	9:28:00	0.9
269	9:29:00	0.9
270	9:30:00	0.8
271	9:31:00	0.8
272	9:32:00	0.8
273	9:33:00	0.8
274	9:34:00	0.8
275	9:35:00	0.8
276	9:36:00	0.8
277	9:37:00	0.8
278	9:38:00	0.8
279	9:39:00	0.8
280	9:40:00	0.8
281	9:41:00	0.8
282	9:42:00	0.8
283	9:43:00	0.8
284	9:44:00	0.8
285	9:45:00	0.8
286	9:46:00	0.8
287	9:47:00	0.8
288	9:48:00	0.8
289	9:49:00	0.8
290	9:50:00	0.8
291	9:51:00	0.8
292	9:52:00	0.8
293	9:53:00	0.8
294	9:54:00	0.8
295	9:55:00	0.8
296	9:56:00	0.8
297	9:57:00	0.8
298	9:58:00	0.8
299	9:59:00	0.8
300	10:00:00	0.8
301	10:01:00	0.8
302	10:02:00	0.8
303	10:03:00	0.8
304	10:04:00	0.8
305	10:05:00	0.8

306	10:06:00	0.8
307	10:07:00	0.8
308	10:08:00	0.8
309	10:09:00	0.8
310	10:10:00	0.8
311	10:11:00	0.8
312	10:12:00	0.8
313	10:13:00	0.8
314	10:14:00	0.8
315	10:15:00	0.8
316	10:16:00	0.8
317	10:17:00	0.8
318	10:18:00	0.8
319	10:19:00	0.8
320	10:20:00	0.8
321	10:21:00	0.8
322	10:22:00	0.8
323	10:23:00	0.8
324	10:24:00	0.8
325	10:25:00	0.8
326	10:26:00	0.8
327	10:27:00	0.8
328	10:28:00	0.8
329	10:29:00	0.8
330	10:30:00	0.8
331	10:31:00	0.8
332	10:32:00	0.8
333	10:33:00	0.8
334	10:34:00	0.8
335	10:35:00	0.8
336	10:36:00	0.8
337	10:37:00	0.8
338	10:38:00	0.8
339	10:39:00	0.8
340	10:40:00	0.8
341	10:41:00	0.8
342	10:42:00	0.8
343	10:43:00	0.8
344	10:44:00	0.8
345	10:45:00	0.8
346	10:46:00	0.8
347	10:47:00	0.8
348	10:48:00	0.8
349	10:49:00	0.8
350	10:50:00	0.8
351	10:51:00	0.8
352	10:52:00	0.8
353	10:53:00	0.8
354	10:54:00	0.9
355	10:55:00	0.9
356	10:56:00	0.9
357	10:57:00	0.9

358	10:58:00	0.9
359	10:59:00	0.9
360	11:00:00	0.9
361	11:01:00	0.9
362	11:02:00	0.9
363	11:03:00	0.9
364	11:04:00	0.9
365	11:05:00	0.9
366	11:06:00	0.9
367	11:07:00	0.9
368	11:08:00	0.9
369	11:09:00	0.9
370	11:10:00	0.9
371	11:11:00	0.9
372	11:12:00	0.9
373	11:13:00	0.9
374	11:14:00	1
375	11:15:00	1
376	11:16:00	1
377	11:17:00	1
378	11:18:00	1
379	11:19:00	1
380	11:20:00	1
381	11:21:00	1
382	11:22:00	1
383	11:23:00	1
384	11:24:00	1
385	11:25:00	1
386	11:26:00	1
387	11:27:00	1
388	11:28:00	1
389	11:29:00	1
390	11:30:00	1
391	11:31:00	1.1
392	11:32:00	1.1
393	11:33:00	1.1
394	11:34:00	1.1
395	11:35:00	1.1
396	11:36:00	1.1
397	11:37:00	1.1
398	11:38:00	1.1
399	11:39:00	1.1
400	11:40:00	1.2
401	11:41:00	1.2
402	11:42:00	1.2
403	11:43:00	1.2
404	11:44:00	1.2
405	11:45:00	1.2
406	11:46:00	1.3
407	11:47:00	1.3
408	11:48:00	1.3
409	11:49:00	1.3

410	11:50:00	1.3
411	11:51:00	1.3
412	11:52:00	1.3
413	11:53:00	1.2
414	11:54:00	1.2
415	11:55:00	1.2
416	11:56:00	1.2
417	11:57:00	1.2
418	11:58:00	1.2
419	11:59:00	1.2
420	12:00:00	1.2
421	12:01:00	1.2
422	12:02:00	1.2
423	12:03:00	1.2
424	12:04:00	1.2
425	12:05:00	1.2
426	12:06:00	1.2
427	12:07:00	1.3
428	12:08:00	1.3
429	12:09:00	1.3
430	12:10:00	1.3
431	12:11:00	1.3
432	12:12:00	1.3
433	12:13:00	1.3
434	12:14:00	1.3
435	12:15:00	1.3
436	12:16:00	1.3
437	12:17:00	1.3
438	12:18:00	1.3
439	12:19:00	1.3
440	12:20:00	1.3
441	12:21:00	1.3
442	12:22:00	1.3
443	12:23:00	1.3
444	12:24:00	1.3
445	12:25:00	1.3
446	12:26:00	1.3
447	12:27:00	1.3
448	12:28:00	1.3
449	12:29:00	1.3
450	12:30:00	1.4
451	12:31:00	1.4
452	12:32:00	1.4
453	12:33:00	1.4
454	12:34:00	1.4
455	12:35:00	1.6
456	12:36:00	1.6
457	12:37:00	1.7
458	12:38:00	1.8
459	12:39:00	1.9
460	12:40:00	2
461	12:41:00	2.1

462	12:42:00	2.2
463	12:43:00	2.3
464	12:44:00	2.3
465	12:45:00	2.4
466	12:46:00	2.5
467	12:47:00	2.6
468	12:48:00	2.7
469	12:49:00	2.7
470	12:50:00	2.7
471	12:51:00	2.8
472	12:52:00	2.9
473	12:53:00	3
474	12:54:00	3.1
475	12:55:00	3.2
476	12:56:00	3.3
477	12:57:00	3.3
478	12:58:00	3.4
479	12:59:00	3.5
480	13:00:00	3.6
481	13:01:00	3.8
482	13:02:00	3.8
483	13:03:00	3.8
484	13:04:00	3.9
485	13:05:00	3.9
486	13:06:00	3.9
487	13:07:00	3.9

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 434 Sample Period: 60 sec
Last Calibration Time: 11/27/2006 14:35 Gas Name: Isobutylene
Date: 11/27/2006

Line#	Time	Avg(ppm) STEL
1	14:35:00	0
2	14:36:00	0
3	14:37:00	0
4	14:38:00	0
5	14:39:00	0
6	14:40:00	0
7	14:41:00	0
8	14:42:00	0
9	14:43:00	0
10	14:44:00	0
11	14:45:00	0
12	14:46:00	0
13	14:47:00	0
14	14:48:00	0
15	14:49:00	0
16	14:50:00	0
17	14:51:00	0
18	14:52:00	0
19	14:53:00	0
20	14:54:00	0
21	14:55:00	0
22	14:56:00	0
23	14:57:00	0
24	14:58:00	0
25	14:59:00	0
26	15:00:00	0
27	15:01:00	0
28	15:02:00	0
29	15:03:00	0
30	15:04:00	0
31	15:05:00	0
32	15:06:00	0
33	15:07:00	0
34	15:08:00	0
35	15:09:00	0.1
36	15:10:00	0.1
37	15:11:00	0.1
38	15:12:00	0.1
39	15:13:00	0.1
40	15:14:00	0.1
41	15:15:00	0.1
42	15:16:00	0.1
43	15:17:00	0.1
44	15:18:00	0.2
45	15:19:00	0.2

46	15:20:00	0.2
47	15:21:00	0.2
48	15:22:00	0.2
49	15:23:00	0.2
50	15:24:00	0.2
51	15:25:00	0.2
52	15:26:00	0.2
53	15:27:00	0.2
54	15:28:00	0.2
55	15:29:00	0.3
56	15:30:00	0.3
57	15:31:00	0.3
58	15:32:00	0.3
59	15:33:00	0.3
60	15:34:00	0.3
61	15:35:00	0.3
62	15:36:00	0.3
63	15:37:00	0.3
64	15:38:00	0.3
65	15:39:00	0.3
66	15:40:00	0.3
67	15:41:00	0.3
68	15:42:00	0.3
69	15:43:00	0.3
70	15:44:00	0.3
71	15:45:00	0.3
72	15:46:00	0.3
73	15:47:00	0.3
74	15:48:00	0.3
75	15:49:00	0.3
76	15:50:00	0.3
77	15:51:00	0.3
78	15:52:00	0.3
79	15:53:00	0.3
80	15:54:00	0.3
81	15:55:00	0.3
82	15:56:00	0.3
83	15:57:00	0.3
84	15:58:00	0.3
85	15:59:00	0.3
86	16:00:00	0.4
87	16:01:00	0.4
88	16:02:00	0.4
89	16:03:00	0.4
90	16:04:00	0.4
91	16:05:00	0.4
92	16:06:00	0.4
93	16:07:00	0.4
94	16:08:00	0.4
95	16:09:00	0.4
96	16:10:00	0.4
97	16:11:00	0.4

98	16:12:00	0.4
99	16:13:00	0.4
100	16:14:00	0.4
101	16:15:00	0.4
102	16:16:00	0.4
103	16:17:00	0.4
104	16:18:00	0.4
105	16:19:00	0.4
106	16:20:00	0.4
107	16:21:00	0.4
108	16:22:00	0.4
109	16:23:00	0.4
110	16:24:00	0.4
111	16:25:00	0.4
112	16:26:00	0.4
113	16:27:00	0.4
114	16:28:00	0.3
115	16:29:00	0.3
116	16:30:00	0.3
117	16:31:00	0.3
118	16:32:00	0.3
119	16:33:00	0.3
120	16:34:00	0.3
121	16:35:00	0.3
122	16:36:00	0.3
123	16:37:00	0.3
124	16:38:00	0.3
125	16:39:00	0.3
126	16:40:00	0.3
127	16:41:00	0.3
128	16:42:00	0.3
129	16:43:00	0.3
130	16:44:00	0.3
131	16:45:00	0.3
132	16:46:00	0.3
133	16:47:00	0.3
134	16:48:00	0.3
135	16:49:00	0.3
136	16:50:00	0.3
137	16:51:00	0.2
138	16:52:00	0.2
139	16:53:00	0.2
140	16:54:00	0.2
141	16:55:00	0.2
142	16:56:00	0.2
143	16:57:00	0.2
144	16:58:00	0.2
145	16:59:00	0.2
146	17:00:00	0.2
147	17:01:00	0.2
148	17:02:00	0.2
149	17:03:00	0.2

150	17:04:00	0.2
151	17:05:00	0.2
152	17:06:00	0.2
153	17:07:00	0.2
154	17:08:00	0.2
155	17:09:00	0.2
156	17:10:00	0.2
157	17:11:00	0.2
158	17:12:00	0.2
159	17:13:00	0.2
160	17:14:00	0.2
161	17:15:00	0.2
162	17:16:00	0.2
163	17:17:00	0.2
164	17:18:00	0.2
165	17:19:00	0.2
166	17:20:00	0.2
167	17:21:00	0.2
168	17:22:00	0.2
169	17:23:00	0.2
170	17:24:00	0.1
171	17:25:00	0.1
172	17:26:00	0.1
173	17:27:00	0.1
174	17:28:00	0.1
175	17:29:00	0.1
176	17:30:00	0.1
177	17:31:00	0.1
178	17:32:00	0.1
179	17:33:00	0.1
180	17:34:00	0.1
181	17:35:00	0.1
182	17:36:00	0.1
183	17:37:00	0.1
184	17:38:00	0.1
185	17:39:00	0.1
186	17:40:00	0.1
187	17:41:00	0.1
188	17:42:00	0.1
189	17:43:00	0.1
190	17:44:00	0.1
191	17:45:00	0.1
192	17:46:00	0.1
193	17:47:00	0.1
194	17:48:00	0.1
195	17:49:00	0.1
196	17:50:00	0.1
197	17:51:00	0.1
198	17:52:00	0.1
199	17:53:00	0.1
200	17:54:00	0.1
201	17:55:00	0.1

202	17:56:00	0.1
203	17:57:00	0.1
204	17:58:00	0.1
205	17:59:00	0.1
206	18:00:00	0.1
207	18:01:00	0.1
208	18:02:00	0.1
209	18:03:00	0.1
210	18:04:00	0.1
211	18:05:00	0.1
212	18:06:00	0.1
213	18:07:00	0.1
214	18:08:00	0.1
215	18:09:00	0.1
216	18:10:00	0.1
217	18:11:00	0.1
218	18:12:00	0.1
219	18:13:00	0.1
220	18:14:00	0.1
221	18:15:00	0.1
222	18:16:00	0.1
223	18:17:00	0.1
224	18:18:00	0.1
225	18:19:00	0.1
226	18:20:00	0.1
227	18:21:00	0.1
228	18:22:00	0.1
229	18:23:00	0.1
230	18:24:00	0.1
231	18:25:00	0.1
232	18:26:00	0.1
233	18:27:00	0.1
234	18:28:00	0.1
235	18:29:00	0.1
236	18:30:00	0.1
237	18:31:00	0.1
238	18:32:00	0.1
239	18:33:00	0.1
240	18:34:00	0.1
241	18:35:00	0.1
242	18:36:00	0.1
243	18:37:00	0.1
244	18:38:00	0.1
245	18:39:00	0.1
246	18:40:00	0.1
247	18:41:00	0.1
248	18:42:00	0.1
249	18:43:00	0.1
250	18:44:00	0.1
251	18:45:00	0.1
252	18:46:00	0.1
253	18:47:00	0.1

254	18:48:00	0.1
255	18:49:00	0.1
256	18:50:00	0.1
257	18:51:00	0.1
258	18:52:00	0.1
259	18:53:00	0.1
260	18:54:00	0.1
261	18:55:00	0.1
262	18:56:00	0.1
263	18:57:00	0.1
264	18:58:00	0.1
265	18:59:00	0.1
266	19:00:00	0.1
267	19:01:00	0.1
268	19:02:00	0.1
269	19:03:00	0.1
270	19:04:00	0.1
271	19:05:00	0.1
272	19:06:00	0.1
273	19:07:00	0.1
274	19:08:00	0.1
275	19:09:00	0.1
276	19:10:00	0.1
277	19:11:00	0.1
278	19:12:00	0.1
279	19:13:00	0.1
280	19:14:00	0.1
281	19:15:00	0.1
282	19:16:00	0.1
283	19:17:00	0.2
284	19:18:00	0.2
285	19:19:00	0.2
286	19:20:00	0.2
287	19:21:00	0.2
288	19:22:00	0.2
289	19:23:00	0.2
290	19:24:00	0.2
291	19:25:00	0.2
292	19:26:00	0.2
293	19:27:00	0.2
294	19:28:00	0.2
295	19:29:00	0.2
296	19:30:00	0.2
297	19:31:00	0.2
298	19:32:00	0.2
299	19:33:00	0.2
300	19:34:00	0.2
301	19:35:00	0.2
302	19:36:00	0.2
303	19:37:00	0.2
304	19:38:00	0.2
305	19:39:00	0.2

306	19:40:00	0.2
307	19:41:00	0.2
308	19:42:00	0.2
309	19:43:00	0.2
310	19:44:00	0.2
311	19:45:00	0.2
312	19:46:00	0.2
313	19:47:00	0.2
314	19:48:00	0.2
315	19:49:00	0.2
316	19:50:00	0.2
317	19:51:00	0.2
318	19:52:00	0.2
319	19:53:00	0.2
320	19:54:00	0.2
321	19:55:00	0.2
322	19:56:00	0.2
323	19:57:00	0.2
324	19:58:00	0.2
325	19:59:00	0.2
326	20:00:00	0.2
327	20:01:00	0.2
328	20:02:00	0.2
329	20:03:00	0.2
330	20:04:00	0.2
331	20:05:00	0.2
332	20:06:00	0.2
333	20:07:00	0.2
334	20:08:00	0.2
335	20:09:00	0.2
336	20:10:00	0.2
337	20:11:00	0.2
338	20:12:00	0.2
339	20:13:00	0.2
340	20:14:00	0.2
341	20:15:00	0.2
342	20:16:00	0.2
343	20:17:00	0.2
344	20:18:00	0.2
345	20:19:00	0.2
346	20:20:00	0.2
347	20:21:00	0.2
348	20:22:00	0.2
349	20:23:00	0.2
350	20:24:00	0.2
351	20:25:00	0.2
352	20:26:00	0.2
353	20:27:00	0.2
354	20:28:00	0.2
355	20:29:00	0.2
356	20:30:00	0.2
357	20:31:00	0.2

358	20:32:00	0.2
359	20:33:00	0.2
360	20:34:00	0.2
361	20:35:00	0.2
362	20:36:00	0.2
363	20:37:00	0.2
364	20:38:00	0.2
365	20:39:00	0.2
366	20:40:00	0.2
367	20:41:00	0.2
368	20:42:00	0.2
369	20:43:00	0.2
370	20:44:00	0.2
371	20:45:00	0.2
372	20:46:00	0.2
373	20:47:00	0.2
374	20:48:00	0.2
375	20:49:00	0.2
376	20:50:00	0.2
377	20:51:00	0.2
378	20:52:00	0.2
379	20:53:00	0.2
380	20:54:00	0.2
381	20:55:00	0.2
382	20:56:00	0.3
383	20:57:00	0.3
384	20:58:00	0.3
385	20:59:00	0.3
386	21:00:00	0.3
387	21:01:00	0.3
388	21:02:00	0.3
389	21:03:00	0.3
390	21:04:00	0.3
391	21:05:00	0.2
392	21:06:00	0.2
393	21:07:00	0.2
394	21:08:00	0.2
395	21:09:00	0.2
396	21:10:00	0.2
397	21:11:00	0.2
398	21:12:00	0.2
399	21:13:00	0.2
400	21:14:00	0.2
401	21:15:00	0.2
402	21:16:00	0.2
403	21:17:00	0.2
404	21:18:00	0.2
405	21:19:00	0.2
406	21:20:00	0.3
407	21:21:00	0.3
408	21:22:00	0.3
409	21:23:00	0.3

410	21:24:00	0.3
411	21:25:00	0.3
412	21:26:00	0.3
413	21:27:00	0.3
414	21:28:00	0.3
415	21:29:00	0.3
416	21:30:00	0.3
417	21:31:00	0.3
418	21:32:00	0.3
419	21:33:00	0.3
420	21:34:00	0.3
421	21:35:00	0.3
422	21:36:00	0.3
423	21:37:00	0.3
424	21:38:00	0.3
425	21:39:00	0.3
426	21:40:00	0.3
427	21:41:00	0.3
428	21:42:00	0.3
429	21:43:00	0.3
430	21:44:00	0.3
431	21:45:00	0.3
432	21:46:00	0.3
433	21:47:00	0.3
434	21:48:00	0.3

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 497 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 13:59 Gas Name: Isobutylene
Date: 11/28/2006

Line#	Time	Avg(ppm) STEL
1	14:02:00	0.2
2	14:03:00	0.2
3	14:04:00	0.2
4	14:05:00	0.2
5	14:06:00	0.2
6	14:07:00	0.2
7	14:08:00	0.2
8	14:09:00	0.2
9	14:10:00	0.2
10	14:11:00	0.2
11	14:12:00	0.2
12	14:13:00	0.2
13	14:14:00	0.2
14	14:15:00	0.2
15	14:16:00	0.2
16	14:17:00	0
17	14:18:00	0
18	14:19:00	0
19	14:20:00	0
20	14:21:00	0
21	14:22:00	0
22	14:23:00	0
23	14:24:00	0
24	14:25:00	0
25	14:26:00	0
26	14:27:00	0
27	14:28:00	0
28	14:29:00	0
29	14:30:00	0.1
30	14:31:00	0.1
31	14:32:00	0.1
32	14:33:00	0.1
33	14:34:00	0.1
34	14:35:00	0.1
35	14:36:00	0.1
36	14:37:00	0.1
37	14:38:00	0.1
38	14:39:00	0.1
39	14:40:00	0.1
40	14:41:00	0.1
41	14:42:00	0.1
42	14:43:00	0.1
43	14:44:00	0.1
44	14:45:00	0.1
45	14:46:00	0.1

46	14:47:00	0.1
47	14:48:00	0.1
48	14:49:00	0.1
49	14:50:00	0.1
50	14:51:00	0.1
51	14:52:00	0.1
52	14:53:00	0.1
53	14:54:00	0.1
54	14:55:00	0.1
55	14:56:00	0.1
56	14:57:00	0.1
57	14:58:00	0.1
58	14:59:00	0.1
59	15:00:00	0.1
60	15:01:00	0.1
61	15:02:00	0.1
62	15:03:00	0.1
63	15:04:00	0.1
64	15:05:00	0.1
65	15:06:00	0.1
66	15:07:00	0.1
67	15:08:00	0.1
68	15:09:00	0.1
69	15:10:00	0.1
70	15:11:00	0.1
71	15:12:00	0.1
72	15:13:00	0.1
73	15:14:00	0.1
74	15:15:00	0.1
75	15:16:00	0.1
76	15:17:00	0.1
77	15:18:00	0.1
78	15:19:00	0.1
79	15:20:00	0.1
80	15:21:00	0.1
81	15:22:00	0.1
82	15:23:00	0.1
83	15:24:00	0.2
84	15:25:00	0.2
85	15:26:00	0.2
86	15:27:00	0.2
87	15:28:00	0.2
88	15:29:00	0.2
89	15:30:00	0.2
90	15:31:00	0.2
91	15:32:00	0.2
92	15:33:00	0.2
93	15:34:00	0.2
94	15:35:00	0.2
95	15:36:00	0.2
96	15:37:00	0.2
97	15:38:00	0.2

98	15:39:00	0.2
99	15:40:00	0.2
100	15:41:00	0.2
101	15:42:00	0.2
102	15:43:00	0.2
103	15:44:00	0.2
104	15:45:00	0.2
105	15:46:00	0.2
106	15:47:00	0.2
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359	20:00:00	0.4
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362	20:03:00	0.4
363	20:04:00	0.4
364	20:05:00	0.4
365	20:06:00	0.4
366	20:07:00	0.4
367	20:08:00	0.4
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369	20:10:00	0.5
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403	20:44:00	0.5
404	20:45:00	0.5
405	20:46:00	0.5
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409	20:50:00	0.5

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412	20:53:00	0.5
413	20:54:00	0.5
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415	20:56:00	0.5
416	20:57:00	0.5
417	20:58:00	0.5
418	20:59:00	0.5
419	21:00:00	0.5
420	21:01:00	0.5
421	21:02:00	0.5
422	21:03:00	0.5
423	21:04:00	0.5
424	21:05:00	0.5
425	21:06:00	0.5
426	21:07:00	0.5
427	21:08:00	0.5
428	21:09:00	0.5
429	21:10:00	0.5
430	21:11:00	0.5
431	21:12:00	0.5
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434	21:15:00	0.5
435	21:16:00	0.5
436	21:17:00	0.5
437	21:18:00	0.5
438	21:19:00	0.5
439	21:20:00	0.5
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444	21:25:00	0.5
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446	21:27:00	0.5
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448	21:29:00	0.5
449	21:30:00	0.5
450	21:31:00	0.5
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452	21:33:00	0.5
453	21:34:00	0.5
454	21:35:00	0.5
455	21:36:00	0.5
456	21:37:00	0.5
457	21:38:00	0.5
458	21:39:00	0.5
459	21:40:00	0.5
460	21:41:00	0.5
461	21:42:00	0.6

462	21:43:00	0.6
463	21:44:00	0.6
464	21:45:00	0.6
465	21:46:00	0.6
466	21:47:00	0.6
467	21:48:00	0.6
468	21:49:00	0.6
469	21:50:00	0.6
470	21:51:00	0.6
471	21:52:00	0.6
472	21:53:00	0.6
473	21:54:00	0.6
474	21:55:00	0.6
475	21:56:00	0.6
476	21:57:00	0.6
477	21:58:00	0.6
478	21:59:00	0.6
479	22:00:00	0.6
480	22:01:00	0.6
481	22:02:00	0.6
482	22:03:00	0.6
483	22:04:00	0.6
484	22:05:00	0.6
485	22:06:00	0.6
486	22:07:00	0.6
487	22:08:00	0.6
488	22:09:00	0.6
489	22:10:00	0.6
490	22:11:00	0.6
491	22:12:00	0.6
492	22:13:00	0.6
493	22:14:00	0.6
494	22:15:00	0.6
495	22:16:00	0.6
496	22:17:00	0.6
497	22:18:00	0.6

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 402 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 13:59 Gas Name: Isobutylene
Date: 11/29/2006

Line#	Time	Avg(ppm) STEL
1	13:53:00	0
2	13:54:00	0
3	13:55:00	0
4	13:56:00	0
5	13:57:00	0
6	13:58:00	0
7	13:59:00	0
8	14:00:00	0
9	14:01:00	0
10	14:02:00	0
11	14:03:00	0
12	14:04:00	0
13	14:05:00	0
14	14:06:00	0
15	14:07:00	0
16	14:08:00	0
17	14:09:00	0
18	14:10:00	0
19	14:11:00	0.1
20	14:12:00	0.1
21	14:13:00	0.1
22	14:14:00	0.1
23	14:15:00	0.1
24	14:16:00	0.1
25	14:17:00	0.1
26	14:18:00	0.1
27	14:19:00	0.2
28	14:20:00	0.2
29	14:21:00	0.2
30	14:22:00	0.2
31	14:23:00	0.2
32	14:24:00	0.2
33	14:25:00	0.2
34	14:26:00	0.2
35	14:27:00	0.2
36	14:28:00	0.3
37	14:29:00	0.3
38	14:30:00	0.3
39	14:31:00	0.3
40	14:32:00	0.3
41	14:33:00	0.3
42	14:34:00	0.3
43	14:35:00	0.3
44	14:36:00	0.3
45	14:37:00	0.3

46	14:38:00	0.3
47	14:39:00	0.3
48	14:40:00	0.4
49	14:41:00	0.4
50	14:42:00	0.4
51	14:43:00	0.4
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67	14:59:00	0.4
68	15:00:00	0.4
69	15:01:00	0.4
70	15:02:00	0.4
71	15:03:00	0.4
72	15:04:00	0.4
73	15:05:00	0.4
74	15:06:00	0.4
75	15:07:00	0.4
76	15:08:00	0.4
77	15:09:00	0.4
78	15:10:00	0.4
79	15:11:00	0.5
80	15:12:00	0.5
81	15:13:00	0.5
82	15:14:00	0.5
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91	15:23:00	0.5
92	15:24:00	0.5
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94	15:26:00	0.5
95	15:27:00	0.5
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127	15:59:00	0.5
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129	16:01:00	0.5
130	16:02:00	0.5
131	16:03:00	0.5
132	16:04:00	0.5
133	16:05:00	0.5
134	16:06:00	0.5
135	16:07:00	0.5
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186	16:58:00	0.5
187	16:59:00	0.4
188	17:00:00	0.4
189	17:01:00	0.4
190	17:02:00	0.4
191	17:03:00	0.4
192	17:04:00	0.4
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194	17:06:00	0.4
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231	17:43:00	0.4
232	17:44:00	0.4
233	17:45:00	0.4
234	17:46:00	0.4
235	17:47:00	0.4
236	17:48:00	0.3
237	17:49:00	0.3
238	17:50:00	0.3
239	17:51:00	0.3
240	17:52:00	0.3
241	17:53:00	0.3
242	17:54:00	0.3
243	17:55:00	0.3
244	17:56:00	0.3
245	17:57:00	0.3
246	17:58:00	0.3
247	17:59:00	0.3
248	18:00:00	0.3
249	18:01:00	0.3
250	18:02:00	0.2
251	18:03:00	0.2
252	18:04:00	0.2
253	18:05:00	0.2

254	18:06:00	0.2
255	18:07:00	0.2
256	18:08:00	0.2
257	18:09:00	0.2
258	18:10:00	0.1
259	18:11:00	0.1
260	18:12:00	0.1
261	18:13:00	0.1
262	18:14:00	0.1
263	18:15:00	0.1
264	18:16:00	0.1
265	18:17:00	0.1
266	18:18:00	0.1
267	18:19:00	0.1
268	18:20:00	0.1
269	18:21:00	0.1
270	18:22:00	0.1
271	18:23:00	0.1
272	18:24:00	0.1
273	18:25:00	0.1
274	18:26:00	0.1
275	18:27:00	0.1
276	18:28:00	0.1
277	18:29:00	0.1
278	18:30:00	0.1
279	18:31:00	0.1
280	18:32:00	0.1
281	18:33:00	0.1
282	18:34:00	0.1
283	18:35:00	0.1
284	18:36:00	0.1
285	18:37:00	0.1
286	18:38:00	0.1
287	18:39:00	0.1
288	18:40:00	0.1
289	18:41:00	0.1
290	18:42:00	0.1
291	18:43:00	0.1
292	18:44:00	0.1
293	18:45:00	0.1
294	18:46:00	0.1
295	18:47:00	0.1
296	18:48:00	0.1
297	18:49:00	0.1
298	18:50:00	0.1
299	18:51:00	0.1
300	18:52:00	0.1
301	18:53:00	0.1
302	18:54:00	0.1
303	18:55:00	0.1
304	18:56:00	0.1
305	18:57:00	0.1

306	18:58:00	0.1
307	18:59:00	0.1
308	19:00:00	0.1
309	19:01:00	0.1
310	19:02:00	0.2
311	19:03:00	0.2
312	19:04:00	0.2
313	19:05:00	0.2
314	19:06:00	0.2
315	19:07:00	0.2
316	19:08:00	0.2
317	19:09:00	0.2
318	19:10:00	0.2
319	19:11:00	0.2
320	19:12:00	0.2
321	19:13:00	0.2
322	19:14:00	0.2
323	19:15:00	0.2
324	19:16:00	0.2
325	19:17:00	0.2
326	19:18:00	0.2
327	19:19:00	0.2
328	19:20:00	0.2
329	19:21:00	0.2
330	19:22:00	0.2
331	19:23:00	0.2
332	19:24:00	0.2
333	19:25:00	0.2
334	19:26:00	0.2
335	19:27:00	0.2
336	19:28:00	0.2
337	19:29:00	0.2
338	19:30:00	0.2
339	19:31:00	0.2
340	19:32:00	0.2
341	19:33:00	0.2
342	19:34:00	0.2
343	19:35:00	0.2
344	19:36:00	0.2
345	19:37:00	0.2
346	19:38:00	0.2
347	19:39:00	0.2
348	19:40:00	0.2
349	19:41:00	0.2
350	19:42:00	0.2
351	19:43:00	0.2
352	19:44:00	0.2
353	19:45:00	0.2
354	19:46:00	0.2
355	19:47:00	0.2
356	19:48:00	0.2
357	19:49:00	0.2

358	19:50:00	0.2
359	19:51:00	0.2
360	19:52:00	0.2
361	19:53:00	0.2
362	19:54:00	0.2
363	19:55:00	0.2
364	19:56:00	0.2
365	19:57:00	0.2
366	19:58:00	0.2
367	19:59:00	0.2
368	20:00:00	0.2
369	20:01:00	0.3
370	20:02:00	0.3
371	20:03:00	0.3
372	20:04:00	0.3
373	20:05:00	0.3
374	20:06:00	0.3
375	20:07:00	0.3
376	20:08:00	0.3
377	20:09:00	0.3
378	20:10:00	0.3
379	20:11:00	0.3
380	20:12:00	0.3
381	20:13:00	0.3
382	20:14:00	0.3
383	20:15:00	0.3
384	20:16:00	0.3
385	20:17:00	0.3
386	20:18:00	0.3
387	20:19:00	0.3
388	20:20:00	0.3
389	20:21:00	0.3
390	20:22:00	0.3
391	20:23:00	0.4
392	20:24:00	0.4
393	20:25:00	0.4
394	20:26:00	0.4
395	20:27:00	0.4
396	20:28:00	0.4
397	20:29:00	0.4
398	20:30:00	0.4
399	20:31:00	0.4
400	20:32:00	0.4
401	20:33:00	0.4
402	20:34:00	0.4

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 450 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 13:59 Gas Name: Isobutylene
Date: 11/30/2006

Line#	Time	Avg(ppm) STEL
1	13:45:00	0
2	13:46:00	0
3	13:47:00	0
4	13:48:00	0
5	13:49:00	0
6	13:50:00	0
7	13:51:00	0
8	13:52:00	0
9	13:53:00	0
10	13:54:00	0
11	13:55:00	0
12	13:56:00	0
13	13:57:00	0
14	13:58:00	0
15	13:59:00	0
16	14:00:00	0
17	14:01:00	0
18	14:02:00	0
19	14:03:00	0
20	14:04:00	0
21	14:05:00	0
22	14:06:00	0
23	14:07:00	0
24	14:08:00	0
25	14:09:00	0
26	14:10:00	0
27	14:11:00	0
28	14:12:00	0
29	14:13:00	0
30	14:14:00	0
31	14:15:00	0
32	14:16:00	0
33	14:17:00	0
34	14:18:00	0
35	14:19:00	0
36	14:20:00	0
37	14:21:00	0
38	14:22:00	0
39	14:23:00	0
40	14:24:00	0
41	14:25:00	0.1
42	14:26:00	0.1
43	14:27:00	0.1
44	14:28:00	0.1
45	14:29:00	0.1

46	14:30:00	0.1
47	14:31:00	0.1
48	14:32:00	0.1
49	14:33:00	0.1
50	14:34:00	0.1
51	14:35:00	0.1
52	14:36:00	0.1
53	14:37:00	0.1
54	14:38:00	0.1
55	14:39:00	0.2
56	14:40:00	0.2
57	14:41:00	0.2
58	14:42:00	0.2
59	14:43:00	0.2
60	14:44:00	0.2
61	14:45:00	0.2
62	14:46:00	0.2
63	14:47:00	0.2
64	14:48:00	0.2
65	14:49:00	0.2
66	14:50:00	0.2
67	14:51:00	0.2
68	14:52:00	0.2
69	14:53:00	0.2
70	14:54:00	0.2
71	14:55:00	0.2
72	14:56:00	0.2
73	14:57:00	0.2
74	14:58:00	0.2
75	14:59:00	0.3
76	15:00:00	0.3
77	15:01:00	0.3
78	15:02:00	0.3
79	15:03:00	0.3
80	15:04:00	0.3
81	15:05:00	0.3
82	15:06:00	0.3
83	15:07:00	0.3
84	15:08:00	0.3
85	15:09:00	0.3
86	15:10:00	0.3
87	15:11:00	0.3
88	15:12:00	0.3
89	15:13:00	0.3
90	15:14:00	0.3
91	15:15:00	0.3
92	15:16:00	0.3
93	15:17:00	0.3
94	15:18:00	0.3
95	15:19:00	0.3
96	15:20:00	0.3
97	15:21:00	0.3

98	15:22:00	0.3
99	15:23:00	0.3
100	15:24:00	0.3
101	15:25:00	0.3
102	15:26:00	0.3
103	15:27:00	0.3
104	15:28:00	0.3
105	15:29:00	0.3
106	15:30:00	0.3
107	15:31:00	0.3
108	15:32:00	0.3
109	15:33:00	0.3
110	15:34:00	0.3
111	15:35:00	0.3
112	15:36:00	0.3
113	15:37:00	0.3
114	15:38:00	0.3
115	15:39:00	0.3
116	15:40:00	0.3
117	15:41:00	0.3
118	15:42:00	0.3
119	15:43:00	0.3
120	15:44:00	0.3
121	15:45:00	0.3
122	15:46:00	0.3
123	15:47:00	0.3
124	15:48:00	0.3
125	15:49:00	0.4
126	15:50:00	0.4
127	15:51:00	0.4
128	15:52:00	0.4
129	15:53:00	0.4
130	15:54:00	0.4
131	15:55:00	0.4
132	15:56:00	0.4
133	15:57:00	0.4
134	15:58:00	0.4
135	15:59:00	0.4
136	16:00:00	0.4
137	16:01:00	0.4
138	16:02:00	0.4
139	16:03:00	0.4
140	16:04:00	0.4
141	16:05:00	0.4
142	16:06:00	0.4
143	16:07:00	0.4
144	16:08:00	0.4
145	16:09:00	0.4
146	16:10:00	0.4
147	16:11:00	0.4
148	16:12:00	0.4
149	16:13:00	0.4

150	16:14:00	0.4
151	16:15:00	0.4
152	16:16:00	0.4
153	16:17:00	0.4
154	16:18:00	0.4
155	16:19:00	0.4
156	16:20:00	0.4
157	16:21:00	0.4
158	16:22:00	0.4
159	16:23:00	0.4
160	16:24:00	0.4
161	16:25:00	0.4
162	16:26:00	0.4
163	16:27:00	0.4
164	16:28:00	0.4
165	16:29:00	0.4
166	16:30:00	0.4
167	16:31:00	0.4
168	16:32:00	0.4
169	16:33:00	0.4
170	16:34:00	0.4
171	16:35:00	0.4
172	16:36:00	0.4
173	16:37:00	0.4
174	16:38:00	0.4
175	16:39:00	0.4
176	16:40:00	0.4
177	16:41:00	0.4
178	16:42:00	0.4
179	16:43:00	0.4
180	16:44:00	0.4
181	16:45:00	0.4
182	16:46:00	0.4
183	16:47:00	0.4
184	16:48:00	0.4
185	16:49:00	0.4
186	16:50:00	0.4
187	16:51:00	0.4
188	16:52:00	0.4
189	16:53:00	0.4
190	16:54:00	0.4
191	16:55:00	0.4
192	16:56:00	0.4
193	16:57:00	0.4
194	16:58:00	0.4
195	16:59:00	0.4
196	17:00:00	0.4
197	17:01:00	0.4
198	17:02:00	0.4
199	17:03:00	0.4
200	17:04:00	0.4
201	17:05:00	0.4

202	17:06:00	0.4
203	17:07:00	0.4
204	17:08:00	0.4
205	17:09:00	0.4
206	17:10:00	0.4
207	17:11:00	0.4
208	17:12:00	0.4
209	17:13:00	0.4
210	17:14:00	0.4
211	17:15:00	0.4
212	17:16:00	0.3
213	17:17:00	0.4
214	17:18:00	0.3
215	17:19:00	0.3
216	17:20:00	0.3
217	17:21:00	0.3
218	17:22:00	0.3
219	17:23:00	0.3
220	17:24:00	0.3
221	17:25:00	0.3
222	17:26:00	0.3
223	17:27:00	0.3
224	17:28:00	0.3
225	17:29:00	0.3
226	17:30:00	0.3
227	17:31:00	0.3
228	17:32:00	0.3
229	17:33:00	0.3
230	17:34:00	0.3
231	17:35:00	0.3
232	17:36:00	0.4
233	17:37:00	0.4
234	17:38:00	0.4
235	17:39:00	0.4
236	17:40:00	0.4
237	17:41:00	0.4
238	17:42:00	0.4
239	17:43:00	0.4
240	17:44:00	0.4
241	17:45:00	0.4
242	17:46:00	0.4
243	17:47:00	0.4
244	17:48:00	0.4
245	17:49:00	0.4
246	17:50:00	0.4
247	17:51:00	0.4
248	17:52:00	0.4
249	17:53:00	0.4
250	17:54:00	0.4
251	17:55:00	0.4
252	17:56:00	0.4
253	17:57:00	0.4

254	17:58:00	0.4
255	17:59:00	0.4
256	18:00:00	0.4
257	18:01:00	0.4
258	18:02:00	0.4
259	18:03:00	0.4
260	18:04:00	0.4
261	18:05:00	0.4
262	18:06:00	0.4
263	18:07:00	0.4
264	18:08:00	0.4
265	18:09:00	0.4
266	18:10:00	0.4
267	18:11:00	0.4
268	18:12:00	0.4
269	18:13:00	0.4
270	18:14:00	0.4
271	18:15:00	0.4
272	18:16:00	0.4
273	18:17:00	0.4
274	18:18:00	0.4
275	18:19:00	0.4
276	18:20:00	0.4
277	18:21:00	0.4
278	18:22:00	0.4
279	18:23:00	0.4
280	18:24:00	0.4
281	18:25:00	0.4
282	18:26:00	0.4
283	18:27:00	0.4
284	18:28:00	0.4
285	18:29:00	0.4
286	18:30:00	0.4
287	18:31:00	0.5
288	18:32:00	0.5
289	18:33:00	0.5
290	18:34:00	0.5
291	18:35:00	0.5
292	18:36:00	0.5
293	18:37:00	0.5
294	18:38:00	0.5
295	18:39:00	0.5
296	18:40:00	0.5
297	18:41:00	0.5
298	18:42:00	0.5
299	18:43:00	0.5
300	18:44:00	0.5
301	18:45:00	0.5
302	18:46:00	0.5
303	18:47:00	0.5
304	18:48:00	0.5
305	18:49:00	0.5

306	18:50:00	0.5
307	18:51:00	0.5
308	18:52:00	0.5
309	18:53:00	0.5
310	18:54:00	0.5
311	18:55:00	0.5
312	18:56:00	0.5
313	18:57:00	0.5
314	18:58:00	0.5
315	18:59:00	0.5
316	19:00:00	0.5
317	19:01:00	0.5
318	19:02:00	0.5
319	19:03:00	0.4
320	19:04:00	0.4
321	19:05:00	0.4
322	19:06:00	0.4
323	19:07:00	0.4
324	19:08:00	0.4
325	19:09:00	0.4
326	19:10:00	0.4
327	19:11:00	0.4
328	19:12:00	0.4
329	19:13:00	0.4
330	19:14:00	0.4
331	19:15:00	0.4
332	19:16:00	0.4
333	19:17:00	0.4
334	19:18:00	0.4
335	19:19:00	0.4
336	19:20:00	0.4
337	19:21:00	0.4
338	19:22:00	0.4
339	19:23:00	0.4
340	19:24:00	0.4
341	19:25:00	0.4
342	19:26:00	0.4
343	19:27:00	0.4
344	19:28:00	0.4
345	19:29:00	0.4
346	19:30:00	0.4
347	19:31:00	0.4
348	19:32:00	0.4
349	19:33:00	0.4
350	19:34:00	0.4
351	19:35:00	0.4
352	19:36:00	0.4
353	19:37:00	0.4
354	19:38:00	0.4
355	19:39:00	0.4
356	19:40:00	0.4
357	19:41:00	0.4

358	19:42:00	0.4
359	19:43:00	0.4
360	19:44:00	0.4
361	19:45:00	0.4
362	19:46:00	0.4
363	19:47:00	0.4
364	19:48:00	0.4
365	19:49:00	0.4
366	19:50:00	0.4
367	19:51:00	0.4
368	19:52:00	0.5
369	19:53:00	0.5
370	19:54:00	0.5
371	19:55:00	0.5
372	19:56:00	0.5
373	19:57:00	0.5
374	19:58:00	0.5
375	19:59:00	0.5
376	20:00:00	0.5
377	20:01:00	0.5
378	20:02:00	0.5
379	20:03:00	0.5
380	20:04:00	0.5
381	20:05:00	0.5
382	20:06:00	0.5
383	20:07:00	0.5
384	20:08:00	0.5
385	20:09:00	0.5
386	20:10:00	0.5
387	20:11:00	0.5
388	20:12:00	0.5
389	20:13:00	0.5
390	20:14:00	0.5
391	20:15:00	0.5
392	20:16:00	0.5
393	20:17:00	0.5
394	20:18:00	0.5
395	20:19:00	0.5
396	20:20:00	0.5
397	20:21:00	0.5
398	20:22:00	0.5
399	20:23:00	0.6
400	20:24:00	0.6
401	20:25:00	0.6
402	20:26:00	0.6
403	20:27:00	0.6
404	20:28:00	0.6
405	20:29:00	0.6
406	20:30:00	0.6
407	20:31:00	0.6
408	20:32:00	0.6
409	20:33:00	0.6

410	20:34:00	0.6
411	20:35:00	0.6
412	20:36:00	0.6
413	20:37:00	0.6
414	20:38:00	0.6
415	20:39:00	0.6
416	20:40:00	0.6
417	20:41:00	0.6
418	20:42:00	0.6
419	20:43:00	0.6
420	20:44:00	0.6
421	20:45:00	0.6
422	20:46:00	0.6
423	20:47:00	0.6
424	20:48:00	0.6
425	20:49:00	0.6
426	20:50:00	0.6
427	20:51:00	0.6
428	20:52:00	0.6
429	20:53:00	0.6
430	20:54:00	0.6
431	20:55:00	0.6
432	20:56:00	0.6
433	20:57:00	0.6
434	20:58:00	0.6
435	20:59:00	0.6
436	21:00:00	0.6
437	21:01:00	0.6
438	21:02:00	0.6
439	21:03:00	0.6
440	21:04:00	0.6
441	21:05:00	0.6
442	21:06:00	0.6
443	21:07:00	0.6
444	21:08:00	0.6
445	21:09:00	0.6
446	21:10:00	0.6
447	21:11:00	0.6
448	21:12:00	0.6
449	21:13:00	0.6
450	21:14:00	0.6

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 136 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 13:59 Gas Name: Isobutylene
Date: 12/1/2006

Line#	Time	Avg(ppm) STEL
1	13:54:00	0
2	13:55:00	0
3	13:56:00	0
4	13:57:00	0
5	13:58:00	0
6	13:59:00	0
7	14:00:00	0
8	14:01:00	0.1
9	14:02:00	0.1
10	14:03:00	0.1
11	14:04:00	0.1
12	14:05:00	0.1
13	14:06:00	0.1
14	14:07:00	0.1
15	14:08:00	0.2
16	14:09:00	0.2
17	14:10:00	0.2
18	14:11:00	0.2
19	14:12:00	0.2
20	14:13:00	0.2
21	14:14:00	0.2
22	14:15:00	0.3
23	14:16:00	0.3
24	14:17:00	0.3
25	14:18:00	0.3
26	14:19:00	0.3
27	14:20:00	0.3
28	14:21:00	0.3
29	14:22:00	0.4
30	14:23:00	0.4
31	14:24:00	0.4
32	14:25:00	0.4
33	14:26:00	0.4
34	14:27:00	0.4
35	14:28:00	0.4
36	14:29:00	0.4
37	14:30:00	0.4
38	14:31:00	0.4
39	14:32:00	0.4
40	14:33:00	0.4
41	14:34:00	0.4
42	14:35:00	0.4
43	14:36:00	0.4
44	14:37:00	0.4
45	14:38:00	0.4

46	14:39:00	0.4
47	14:40:00	0.4
48	14:41:00	0.4
49	14:42:00	0.4
50	14:43:00	0.4
51	14:44:00	0.4
52	14:45:00	0.4
53	14:46:00	0.4
54	14:47:00	0.4
55	14:48:00	0.4
56	14:49:00	0.4
57	14:50:00	0.4
58	14:51:00	0.4
59	14:52:00	0.4
60	14:53:00	0.4
61	14:54:00	0.4
62	14:55:00	0.4
63	14:56:00	0.4
64	14:57:00	0.4
65	14:58:00	0.4
66	14:59:00	0.4
67	15:00:00	0.3
68	15:01:00	0.3
69	15:02:00	0.3
70	15:03:00	0.3
71	15:04:00	0.3
72	15:05:00	0.3
73	15:06:00	0.3
74	15:07:00	0.3
75	15:08:00	0.3
76	15:09:00	0.3
77	15:10:00	0.3
78	15:11:00	0.3
79	15:12:00	0.3
80	15:13:00	0.3
81	15:14:00	0.3
82	15:15:00	0.3
83	15:16:00	0.3
84	15:17:00	0.2
85	15:18:00	0.2
86	15:19:00	0.2
87	15:20:00	0.2
88	15:21:00	0.2
89	15:22:00	0.2
90	15:23:00	0.2
91	15:24:00	0.2
92	15:25:00	0.2
93	15:26:00	0.2
94	15:27:00	0.2
95	15:28:00	0.2
96	15:29:00	0.2
97	15:30:00	0.2

98	15:31:00	0.2
99	15:32:00	0.2
100	15:33:00	0.2
101	15:34:00	0.2
102	15:35:00	0.2
103	15:36:00	0.2
104	15:37:00	0.2
105	15:38:00	0.2
106	15:39:00	0.2
107	15:40:00	0.2
108	15:41:00	0.2
109	15:42:00	0.2
110	15:43:00	0.2
111	15:44:00	0.2
112	15:45:00	0.2
113	15:46:00	0.2
114	15:47:00	0.2
115	15:48:00	0.2
116	15:49:00	0.2
117	15:50:00	0.2
118	15:51:00	0.2
119	15:52:00	0.2
120	15:53:00	0.2
121	15:54:00	0.2
122	15:55:00	0.2
123	15:56:00	0.2
124	15:57:00	0.2
125	15:58:00	0.2
126	15:59:00	0.2
127	16:00:00	0.2
128	16:01:00	0.2
129	16:02:00	0.2
130	16:03:00	0.2
131	16:04:00	0.2
132	16:05:00	0.2
133	16:06:00	0.2
134	16:07:00	0.2
135	16:08:00	0.2
136	16:09:00	0.2

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 7 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 13:59 Gas Name: Isobutylene
Date: 12/1/2006

Line#	Time	Avg(ppm) STEL
1	19:39:00	0
2	19:40:00	0
3	19:41:00	0
4	19:42:00	0
5	19:43:00	0

6	19:44:00	0
7	19:45:00	0

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 2 Sample Period: 60 sec
Last Calibration Time: 11/28/2006 13:59 Gas Name: Isobutylene
Date: 12/4/2006

Line#	Time	Avg(ppm) STEL
1	13:51:00	0
2	13:52:00	0

Instrument: MiniRAE 2000 (PGM7600) Serial Number: 005431
Data Points: 491 Sample Period: 60 sec
Last Calibration Time: 12/4/2006 13:56 Gas Name: Isobutylene
Date: 12/4/2006

Line#	Time	Avg(ppm) STEL
1	13:57:00	0
2	13:58:00	0
3	13:59:00	0
4	14:00:00	0
5	14:01:00	0
6	14:02:00	0
7	14:03:00	0
8	14:04:00	0
9	14:05:00	0
10	14:06:00	0
11	14:07:00	0
12	14:08:00	0
13	14:09:00	0
14	14:10:00	0
15	14:11:00	0
16	14:12:00	0
17	14:13:00	0
18	14:14:00	0
19	14:15:00	0
20	14:16:00	0
21	14:17:00	0
22	14:18:00	0
23	14:19:00	0
24	14:20:00	0
25	14:21:00	0
26	14:22:00	0
27	14:23:00	0
28	14:24:00	0
29	14:25:00	0
30	14:26:00	0
31	14:27:00	0
32	14:28:00	0
33	14:29:00	0
34	14:30:00	0
35	14:31:00	0

36	14:32:00	0
37	14:33:00	0
38	14:34:00	0
39	14:35:00	0
40	14:36:00	0
41	14:37:00	0
42	14:38:00	0
43	14:39:00	0
44	14:40:00	0
45	14:41:00	0
46	14:42:00	0
47	14:43:00	0
48	14:44:00	0
49	14:45:00	0
50	14:46:00	0
51	14:47:00	0
52	14:48:00	0
53	14:49:00	0
54	14:50:00	0
55	14:51:00	0
56	14:52:00	0
57	14:53:00	0
58	14:54:00	0
59	14:55:00	0
60	14:56:00	0
61	14:57:00	0
62	14:58:00	0
63	14:59:00	0
64	15:00:00	0
65	15:01:00	0
66	15:02:00	0
67	15:03:00	0
68	15:04:00	0
69	15:05:00	0
70	15:06:00	0
71	15:07:00	0
72	15:08:00	0
73	15:09:00	0
74	15:10:00	0
75	15:11:00	0
76	15:12:00	0
77	15:13:00	0
78	15:14:00	0
79	15:15:00	0
80	15:16:00	0
81	15:17:00	0
82	15:18:00	0
83	15:19:00	0
84	15:20:00	0
85	15:21:00	0
86	15:22:00	0
87	15:23:00	0

88	15:24:00	0
89	15:25:00	0
90	15:26:00	0
91	15:27:00	0
92	15:28:00	0
93	15:29:00	0
94	15:30:00	0
95	15:31:00	0
96	15:32:00	0
97	15:33:00	0
98	15:34:00	0
99	15:35:00	0
100	15:36:00	0
101	15:37:00	0
102	15:38:00	0
103	15:39:00	0
104	15:40:00	0
105	15:41:00	0
106	15:42:00	0
107	15:43:00	0
108	15:44:00	0
109	15:45:00	0
110	15:46:00	0
111	15:47:00	0
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113	15:49:00	0
114	15:50:00	0
115	15:51:00	0
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117	15:53:00	0
118	15:54:00	0
119	15:55:00	0
120	15:56:00	0
121	15:57:00	0
122	15:58:00	0
123	15:59:00	0
124	16:00:00	0
125	16:01:00	0
126	16:02:00	0
127	16:03:00	0
128	16:04:00	0
129	16:05:00	0
130	16:06:00	0
131	16:07:00	0
132	16:08:00	0
133	16:09:00	0
134	16:10:00	0
135	16:11:00	0
136	16:12:00	0
137	16:13:00	0
138	16:14:00	0
139	16:15:00	0

140	16:16:00	0
141	16:17:00	0
142	16:18:00	0
143	16:19:00	0
144	16:20:00	0
145	16:21:00	0
146	16:22:00	0
147	16:23:00	0
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149	16:25:00	0
150	16:26:00	0
151	16:27:00	0
152	16:28:00	0
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155	16:31:00	0
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157	16:33:00	0
158	16:34:00	0
159	16:35:00	0
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161	16:37:00	0
162	16:38:00	0
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165	16:41:00	0
166	16:42:00	0
167	16:43:00	0
168	16:44:00	0
169	16:45:00	0
170	16:46:00	0
171	16:47:00	0
172	16:48:00	0
173	16:49:00	0
174	16:50:00	0
175	16:51:00	0
176	16:52:00	0
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182	16:58:00	0
183	16:59:00	0
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185	17:01:00	0
186	17:02:00	0
187	17:03:00	0
188	17:04:00	0
189	17:05:00	0
190	17:06:00	0
191	17:07:00	0

192	17:08:00	0
193	17:09:00	0
194	17:10:00	0
195	17:11:00	0
196	17:12:00	0
197	17:13:00	0
198	17:14:00	0
199	17:15:00	0
200	17:16:00	0
201	17:17:00	0
202	17:18:00	0
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213	17:29:00	0
214	17:30:00	0
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222	17:38:00	0
223	17:39:00	0
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238	17:54:00	0
239	17:55:00	0
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241	17:57:00	0
242	17:58:00	0
243	17:59:00	0

244	18:00:00	0
245	18:01:00	0
246	18:02:00	0
247	18:03:00	0
248	18:04:00	0
249	18:05:00	0
250	18:06:00	0
251	18:07:00	0
252	18:08:00	0
253	18:09:00	0
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255	18:11:00	0
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262	18:18:00	0
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269	18:25:00	0
270	18:26:00	0
271	18:27:00	0
272	18:28:00	0
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277	18:33:00	0
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290	18:46:00	0
291	18:47:00	0
292	18:48:00	0
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301	18:57:00	0
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345	19:41:00	0
346	19:42:00	0
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350	19:46:00	0
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359	19:55:00	0
360	19:56:00	0
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362	19:58:00	0
363	19:59:00	0
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370	20:06:00	0
371	20:07:00	0
372	20:08:00	0
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398	20:34:00	0
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400	20:36:00	0
401	20:37:00	0
402	20:38:00	0
403	20:39:00	0
404	20:40:00	0
405	20:41:00	0
406	20:42:00	0
407	20:43:00	0
408	20:44:00	0
409	20:45:00	0
410	20:46:00	0
411	20:47:00	0
412	20:48:00	0
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414	20:50:00	0
415	20:51:00	0
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418	20:54:00	0
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420	20:56:00	0
421	20:57:00	0
422	20:58:00	0
423	20:59:00	0
424	21:00:00	0
425	21:01:00	0
426	21:02:00	0
427	21:03:00	0
428	21:04:00	0
429	21:05:00	0
430	21:06:00	0
431	21:07:00	0
432	21:08:00	0
433	21:09:00	0
434	21:10:00	0
435	21:11:00	0
436	21:12:00	0
437	21:13:00	0
438	21:14:00	0
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440	21:16:00	0
441	21:17:00	0
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443	21:19:00	0
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446	21:22:00	0
447	21:23:00	0
448	21:24:00	0
449	21:25:00	0
450	21:26:00	0
451	21:27:00	0

452	21:28:00	0
453	21:29:00	0
454	21:30:00	0
455	21:31:00	0
456	21:32:00	0
457	21:33:00	0
458	21:34:00	0
459	21:35:00	0
460	21:36:00	0
461	21:37:00	0
462	21:38:00	0
463	21:39:00	0
464	21:40:00	0
465	21:41:00	0
466	21:42:00	0
467	21:43:00	0
468	21:44:00	0
469	21:45:00	0
470	21:46:00	0
471	21:47:00	0
472	21:48:00	0
473	21:49:00	0
474	21:50:00	0
475	21:51:00	0
476	21:52:00	0
477	21:53:00	0
478	21:54:00	0
479	21:55:00	0
480	21:56:00	0
481	21:57:00	0
482	21:58:00	0
483	21:59:00	0
484	22:00:00	0
485	22:01:00	0
486	22:02:00	0
487	22:03:00	0
488	22:04:00	0
489	22:05:00	0
490	22:06:00	0
491	22:07:00	0

APPENDIX D

Waste Disposal Documentation

700 Brooks Avenue
Rochester , NY 14619

PPW 09/05/2006
WORK ORDER NO. D21383550

DOCUMENT NO. 105696

STRAIGHT BILL OF LADING

TRANSPORTER 1 Clean Harbors Env Services Inc — VEHICLE ID # 625976 ME

EPA ID # MAD039322250 — TRANS. 1 PHONE (781) 792-5000

TRANSPORTER 2 _____ — VEHICLE ID # _____

EPA ID # _____ — TRANS. 2 PHONE _____

DESIGNATED FACILITY			SHIPPER		
Spring Grove Resource Recovery			Rochester Gas & Electric		
FACILITY EPA ID #			SHIPPER EPA ID #		
OHD000816629			NYD000818781		
ADDRESS			ADDRESS		
4879 Spring Grove Avenue			89 East Avenue		
CITY	STATE	ZIP	CITY	STATE	ZIP
Cincinnati	OH	45232	Rochester	NY	14649

CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS	TOTAL QUANTITY	UNIT WT/VOL
001	DM		A. NON HAZARDOUS, NON D.O.T. REGULATED LIQUID, (OIL W<50PPM PCB'S) , N/A, NONE	430	P
21 LS ~~17~~ ~~003~~	DM		B. NON DOT REGULATED MATERIAL, (WATER, GASOLINE) , N/A, NONE	LS ~~6606~~ 8198 ~~5316~~	P
001	DM		C. NON DOT REGULATED MATERIAL, (NON-PCB CAPACITORS) , N/A, NONE	350	P
001	DM		D. NON DOT REGULATED, (TRANSFORMERS - NO FREE LIQUID) , NONE, NONE	250	P
0024	DM		E. NON-RCRA HAZARDOUS WASTE, SOLID, (SOIL & GRAVEL) , NONE, NONE	11,915	P
			F.		
			G.		
			H.		

SPECIAL HANDLING INSTRUCTIONS
EMERGENCY PHONE #: (800) 483-3718
A: CH82928 B: CH82513 C: CH1838 D: CH239463 E: CH82544

SHIPPERS CERTIFICATION: This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

	PRINT	SIGN	DATE
SHIPPER	Thomas C. Wright	Thomas C. Wright	2/22/06
TRANSPORTER 1	LARRY SALISBURY	Larry Salisbury	2/22/07
TRANSPORTER 2			
RECEIVED BY			

1

CHI 107

ROCHESTER GAS AND ELECTRIC CORPORATION
755 Brooks Avenue
Non-Hazardous Material

DATE IN	DRUM NO.	GAL.	LBS	WASTE DESCRIPTION	Generator	BLDG	DISPOSAL	DATE SHIP'D
1/3/2007	BA484		350	Non PCB Ballest	89-10		Cleanharbors	2/22/2007
1/3/2007	BA485		420	Sta. 3 Decon Water	SIR		Cleanharbors	2/22/2007
1/3/2007	BA486		400	Sta. 3 Decon Water	SIR		Cleanharbors	2/22/2007
1/3/2007	BA487		290	Sta. 3 Decon Water	SIR		Cleanharbors	2/22/2007
1/3/2007	BA488		400	Sta. 3 Decon Water	SIR		Cleanharbors	2/22/2007
1/3/2007	BA489		200	Filmore Decon Water	SIR		Cleanharbors	2/22/2007
1/5/2007	BA490		430	Drip oil Norton St 15PPM	Operations		Cleanharbors	2/22/2007
1/9/2007	BA491		560	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA492		525	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA493		525	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA494		560	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA495		510	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA496		505	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA497		240	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA498		560	Canal St. Soil Borings	SIR		Cleanharbors	2/22/2007
1/9/2007	BA499		525	Canal St. Soil Borings	SIR		Cleanharbors	2/22/2007
1/9/2007	BA500		525	Canal St. Soil Borings	SIR		Cleanharbors	2/22/2007
1/9/2007	BA501		560	Canal St. Soil Borings	SIR		Cleanharbors	2/22/2007
1/9/2007	BA502		315	Canal St. Soil Borings	SIR		Cleanharbors	2/22/2007
1/9/2007	BA503		490	Canal Decon Water	SIR		Cleanharbors	2/22/2007
1/9/2007	BA504		540	Canal St. Decon Water	SIR		Cleanharbors	2/22/2007
2/21/2007	BA505		55	Mercaptan Debris / Caladonia	Operations		Cleanharbors	2/22/2007
2/21/2007	BA506		90	Mercaptan Debris / Caladonia	Operations		Cleanharbors	2/22/2007

APPENDIX E

Laboratory Analytical Reports and DUSRs

MEMORANDUM

22 January 2007
File No. 33879-003

TO: Jon Babcock
Sr. Engineer

FROM: Michael G. Nickelsen
Sr. Scientist

SUBJECT: RG&E Canal Street Data Validation

Analytical results for environmental samples associated with the following Severn Trent Laboratories, Inc. laboratory data packages were reviewed to determine the data usability:

Table 1. Summary of Validated Laboratory Reports.

Soil Lab Reports	Ground Water Lab Reports
AO6-E219	AO6-F467
AO6-E274	AO6-F495
AO6-E377	AO6-F530
AO6-E425	
AO6-E535	
AO6-E587	
AO6-E629	
AO6-E730	

Each laboratory data package was reviewed with guidance provided by the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (EPA 540/R-99/008, Oct 1999), and/or **National Functional Guidelines for Inorganic Data Review** (EPA 540-R-04-004, Oct 2004) and **NYSDEC Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)**, September 1997. Laboratory method specific criteria as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996 were used, where applicable, if the analytical anomaly identified was not addressed by the guidelines referenced above.

Data validation of the analytical results was performed by Ethan G. Lee and reviewed and approved by me.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E219

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
SB-3,S5
SB-4,S5
SB-5,S5
MW-5,S5
EB112706
TB112706

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	VOCs	EPA 8260B/624	14 days
3.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
4.	ICP Metals	EPA 6010B	180 days
5.	ICP Metals	EPA 6010B/200.7	180 days
6.	Mercury	EPA 7471A	28 days
7.	Mercury	EPA 7470A	28 days
8.	Cyanide, Total	EPA 9010B/9014	14 days
9.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
F	11/21/06 1016	Methylene Chloride	50.00	0.35	SB-3,S5 SB-4,S5 SB-5,S5 MW-5,S5	See Action #1 Below
N	12/04/06 1757	Dichlorodifluoromethane Methyl acetate	32.90 39.00	0.21 0.25	EB112706 TB112706	See Action #1 Below See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
V	11/29/06 1040	2,4-Dinitrophenol	36.60	0.09	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
F	11/29/06 2237	Bromomethane	59.00	0.03	SB-3,S5	See Action #2 Below
		Methylene Chloride	34.50	0.23	SB-4,S5	See Action #1 Below
		Acetone	25.80	0.05	SB-5,S5	See Action #1 Below
		Methyl acetate	30.10	0.18	MW-5,S5	See Action #1 Below
N	12/06/06 0855	Acetone	37.80	0.04	EB112706	See Action #2 Below
		2-Butanone	31.70	0.06	TB112706	See Action #1 Below
		Bromoform	27.50	0.23		See Action #1 Below
		4-Methyl-2-pentanone	27.30	0.17		See Action #1 Below
		2-Hexanone	29.20	0.11		See Action #1 Below
		1,2,4-Trichlorobenzene	41.10	0.50		See Action #1 Below
		1,2-Dibromo-3-chloropropane	48.70	0.03		See Action #2 Below
		Methyl acetate	39.90	0.15		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.
Action #2
Positive results are qualified "J", estimated and non-detected analytes as "R", rejected.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
TB112706	Acetone	3.0 ug/L	All Project Samples	30.0 ug/L
Method Blank VBLK04	Methylene Chloride	2.0 ug/kg	SB-3,S5 SB-4,S5 SB-5,S5 MW-5,S5	20.0 ug/kg

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
Method Blank SBLK54	bis(2-Ethylhexyl)phthalate	67.0 ug/kg	All Project Samples	670.0 ug/kg

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B and/or 8270C to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

LCS ID / Project Sample MS	Type	Target Analyte(s)	%R	Affected Sample(s)	Positive Results	Non Detect (ND)
LCS D048-540	LCS	Cadmium	120	SB-3,S5	J	
	LCS			SB-4,S5		
	LCS			SB-5,S5		
	LCS			MW-5,S5		

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL, with the following exception(s):

Sample ID	Matrix	Target Analyte(s)	RPD	Affected Sample(s)
MS/MSD	AQ	Cyanide, Amenable	21	EB112706

Action:
Analytes with RPDs greater than 20% should be qualified "J" and non-detects qualified "UJ".

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL, with the following exception(s):

Serial Dilution ID	Target Analyte(s)	%D	Affected Sample(s)
SB-3,S5	Aluminum	13	SB-3,S5
	Calcium	14	SB-4,S5
	Iron	14	SB-5,S5
	Magnesium	13	MW-5,S5
	Manganese	14	

Action:
For serial dilution %D results >10%, qualify results > the MDL as "J" and non-detects as "UJ".

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E274

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
SB-10,S6
SB-12,S2
SB-12,S5
SB-13,S3
MW-2,S8
DUP-112806
SB-13,S4
SB-10,S2
EB112806
TRIP BLANK

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	VOCs	EPA 8260B/624	14 days
3.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
4.	ICP Metals	EPA 6010B	180 days
5.	ICP Metals	EPA 6010B/200.7	180 days
6.	Mercury	EPA 7471A	28 days
7.	Mercury	EPA 7470A	28 days
8.	Cyanide, Total	EPA 9010B/9014	14 days
9.	Cyanide, Total	EPA 335.2	14 days
10.	TPH(d)	EPA 8015M	14 days
11.	TPH(g)/BTEX/MTBE	EPA 8015M/8021B	14 days
12.	TRPH	EPA 418.1	28 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
F	11/21/06 1016	Methylene Chloride	50.00	0.35	SB-10,S2	See Action #1 Below
N	12/04/06 1757	1,2-Dibromo-3-chloropropane	33.30	0.07	EB112806	See Action #1 Below
		Dichlorodifluoromethane	32.90	0.21	TRIP BLANK	See Action #1 Below
		Methyl acetate	39.00	0.25		See Action #1 Below
P	11/16/06 2130	Methylene Chloride	34.30	0.40	SB-12,S2 SB-12,S5 MW-2,S8	See Action #1 Below
S	12/12/06 1101	Methylene Chloride	32.10	0.28	SB-13,S3	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
U	12/07/06 0748	bis(2-Chloroethyl)ether	42.70	1.99	SB-10,S6 SB-12,S2	See Action #1 Below
U	12/07/06 1038	Caprolactam	34.10	0.08	SB-10,S6 SB-12,S2	See Action #1 Below
U	12/11/06 1410	2,4-Dinitrophenol	36.60	0.09	SB-12,S5 SB-13,S3 MW-2,S8 DUP-112806 SB-10,S2	See Action #1 Below
U	12/13/06 0906	2,4-Dinitrophenol	44.60	0.10	SB-13,S3 RI DUP-112806 RI	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
F	12/01/06 1033	Bromomethane	46.20	0.04	SB-10,S2	See Action #2 Below
		Methylene Chloride	40.30	0.21		See Action #1 Below
		Acetone	29.00	0.05		See Action #1 Below
		1,1-Dichloroethane	27.30	0.47		See Action #1 Below
		Methyl acetate	33.40	0.17		See Action #1 Below
G	12/11/06 2222	Bromomethane	38.00	0.16	SB-10,S6 DUP-112806	See Action #1 Below
N	12/06/06 2036	Dibromochloromethane	26.60	0.21	EB112806	See Action #1 Below
		Acetone	23.40	0.04	TRIP BLANK	See Action #2 Below
		1,2-Dibromo-3-chloropropane	38.80	0.04		See Action #2 Below
		Bromoform	35.30	0.21		See Action #1 Below
		1,2,4-Trichlorobenzene	31.40	0.59		See Action #1 Below
		Methyl acetate	33.90	0.16		See Action #1 Below
S	12/11/06 1027	Bromomethane	38.80	0.05	SB-13,S3	See Action #2 Below
		Methyl acetate	26.30	0.27		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.
Action #2
Positive results are qualified "J", estimated and non-detected analytes as "R", rejected.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
TRIP BLANK	Acetone	4.0 ug/L	All Project Samples	40.0 ug/L
Method Blank VBLK07	Methylene Chloride	1.0 ug/kg	MW-2,S8 SB-12,S2 SB-12,S5	10.0 ug/kg
Method Blank VBLK07	Methylene Chloride	2.0 ug/kg	SB-10,S2	20.0 ug/kg
Method Blank VBLK12	Methylene Chloride	0.7 ug/L	EB112806 TRIP BLANK	7.1 ug/L
Method Blank VBLK58	Methylene Chloride	66.0 ug/kg	SB-10,S6 DUP-112806	660.0 ug/kg

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria, with the following exception(s):

Surrogate Percent Recovery Criteria				
Surrogate		Aqueous Matrix (%)	Solid Matrix (%)	
Phenol-d5	S01	low - high	40 - 120	Acid
2-Fluorophenol	S02	low - high	30 - 120	Acid
2,4,6-Tribromophenol	S03	low - high	46 - 129	Acid
Nitrobenzene-d5	S04	low - high	35 - 120	Base/Neutral
2-Fluorobiphenyl	S05	low - high	45 - 120	Base/Neutral
Terphenyl-d14	S06	low - high	54 - 135	Base/Neutral
2-Chlorophenol-d4	S07	low - high	low - high	Acid
1,2-Dichlorobenzene-d4	S08	low - high	low - high	Base/Neutral

										Acid		Base/Neutral	
Project Sample ID	Matrix	S01 %R	S02 %R	S03 %R	S04 %R	S05 %R	S06 %R	S07 %R	S08 %R	Positive Results	Non Detect (ND)	Positive Results	Non Detect (ND)
DUP-112806	Soil	56	45	41	103	80	82						

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

LCS ID / Project Sample MS	Target Analyte(s)	%R Criteria	%R	Affected Sample(s)
SB-10,S2 MS	1,1-Dichloroethene	65 - 146	157	SB-10,S2
	Trichloroethene	74 - 127	132	
	Benzene	74 - 128	150	
	Toluene	74 - 123	129	
SB-10,S2 MSD	Benzene	74 - 128	139	SB-10,S2

Action:

If the LCS %R is greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the LCS %R is less than the lower acceptance limit associated target analyte positive results are qualified "J" and non-detects are qualified "R". If the MS/MSD is from a project sample and the %R greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the MS/MSD %R is >10%, but less than the lower acceptance limit, associated analyte positive results are qualified "J" and non-detects are qualified "UJ". If the MS/MSD %R is less than 10% associated target analyte positive results are qualified "J" and non-detects are qualified "R". MS/MSD qualifiers are only applied to affected samples of the same matrix. If the MS/MSD is a LAB sample do not qualify project samples.

LCS ID / Project Sample MS	Target Analyte(s)	%R Criteria	%R	Affected Sample(s)
SB-10,S2 MSD	Pyrene	41 - 138	26	SB-10,S2

Action:

If the LCS %R is greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the LCS %R is less than the lower acceptance limit associated target analyte positive results are qualified "J" and non-detects are qualified "R". If the MS/MSD is from a project sample and the %R greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the MS/MSD %R is >10%, but less than the lower acceptance limit, associated analyte positive results are qualified "J" and non-detects are qualified "UJ". If the MS/MSD %R is less than 10% associated target analyte positive results are qualified "J" and non-detects are qualified "R". MS/MSD qualifiers are only applied to affected samples of the same matrix. If the MS/MSD is a LAB sample do not qualify project samples.

LCS ID / Project Sample MS	Type	Target Analyte(s)	%R	Affected Sample(s)	Positive Results	Non Detect (ND)
SB-10,S2	MS	Aluminum	176	SB-10,S6	J	
	MS	Arsenic	60	SB-12,S2	J	UJ
	MS	Barium	126	SB-12,S5	J	
	MS	Lead	553	SB-13,S3	J	
	MS			MW-2,S8		
	MS			DUP-112806		
	MS			SB-10,S2		
SB-10,S2	MSD	Aluminum	147	SB-10,S6	J	
	MSD	Arsenic	47	SB-12,S2	J	UJ
	MSD	Copper	64	SB-12,S2	J	UJ
	MSD	Lead	154	SB-13,S3	J	
	MSD	Zinc	63	MW-2,S8	J	UJ
	MSD			MW-2,S8		
	MSD			SB-10,S2		

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard, with the following exception(s):

Sample ID	Non-Compliant IS	UCL Area	LCL Area	Sample Area	Analytes Affected
DUP-112806	Chrysene-d12	902360	225590	1161634	See List Below
SB-13,S3	Chrysene-d12	902360	225590	930796	See List Below
DUP-112806	Perylene-d12	865264	216316	949160	See List Below
SB-13,S3	Perylene-d12	865264	216316	1015023	See List Below

Chrysene-d12

3,3'-Dichlorobenzidine, Benzo(a)anthracene, bis(2-Ethylhexyl)phthalate, Butylbenzylphthalate, Chrysene, Pyrene

Perylene-d12

Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, Di-n-octylphthalate, Indeno(1,2,3-cd)pyrene

Action:

If the internal standard is greater than the upper limit, positive results for the associated target analytes are qualified "J" and non-detects should not be qualified. If the internal standard is less than the lower limit, positive results for the associated target analytes are qualified "J" and non-detects are qualified "UJ". If the internal standard is less than 10% of the lower limit, positive results for the associated target analytes are qualified "J" and non-detects are qualified "R".

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL, with the following exception(s):

Sample ID	Matrix	Target Analyte(s)	RPD	Affected Sample(s)
SB-10,S2	Soil	Barium	21	SB-10,S6
		Calcium	131	SB-12,S2
		Copper	33	SB-12,S5
		Lead	68	SB-13,S3
		Manganese	94	MW-2,S8
				DUP-112806
				SB-10,S2

Action:

Analytes with RPDs greater than 20% should be qualified "J" and non-detects qualified "UJ".

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL, with the following exception(s):

Serial Dilution ID	Target Analyte(s)	%D	Affected Sample(s)
SB-10,S2	Zinc	11	SB-10,S6 SB-12,S2 SB-12,S5 SB-13,S3 MW-2,S8 DUP-112806 SB-10,S2

Action:
For serial dilution %D results >10%, qualify results > the MDL as "J" and non-detects as "UJ".

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E377

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
SB-9,S6
SB-11,S6
SB-14,S4
SB-14,S6
MW-4,S5
EB112906
TB112906

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	VOCs	EPA 8260B/624	14 days
3.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
4.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
5.	ICP Metals	EPA 6010B	180 days
6.	ICP Metals	EPA 6010B/200.7	180 days
7.	Mercury	EPA 7471A	28 days
8.	Mercury	EPA 7470A	28 days
9.	Cyanide, Total	EPA 9010B/9014	14 days
10.	Cyanide, Total	EPA 335.2	14 days
11.	TPH(d)	EPA 8015M	14 days
12.	TPH(g)	EPA 8015M/8021B	14 days
13.	TPH	EPA 310.13	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
F	11/21/06 1016	Methylene Chloride	50.00	0.35	SB-11,S6 SB-14,S6 MW-4,S5 EB112906 TB112906	See Action #1 Below
S	12/12/06 1101	Methylene Chloride	32.10	0.28	SB-14,S4	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
U	12/11/06 1410	2,4-Dinitrophenol	36.60	0.09	SB-9,S6 SB-11,S6 SB-14,S4 MW-4,S5	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
F	12/05/06 0957	Bromomethane	35.60	0.05	SB-11,S6	See Action #2 Below
		Methylene Chloride	32.10	0.24	EB112906	See Action #1 Below
		trans-1,2-Dichloroethene	-43.60	0.35	TB112906	See Action #1 Below
		Carbon tetrachloride	-26.90	0.41		See Action #1 Below
F	12/06/06 1458	Bromomethane	35.60	0.05	SB-14,S6	See Action #2 Below
		Methylene Chloride	35.50	0.23	MW-4,S5	See Action #1 Below
		trans-1,2-Dichloroethene	-45.40	0.35		See Action #1 Below
		Methyl tert-butyl ether	-28.60	0.78		See Action #1 Below
S	12/11/06 1027	Bromomethane	38.80	0.05	SB-9,S6	See Action #2 Below
		Methyl Acetate	26.30	0.27		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.
Action #2
Positive results are qualified "J", estimated and non-detected analytes as "R", rejected.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
EB112906	Methylene Chloride	1.9 ug/L	SB-9,S6	19.0 ug/L
	Toluene	1.6 ug/L	SB-11,S6	8.0 ug/L
			SB-14,S4	
			SB-14,S6	
			MW-4,S5	
TB112906	Methylene Chloride	2.1 ug/L	SB-9,S6	21.0 ug/L
			SB-11,S6	
			SB-14,S4	
			SB-14,S6	
			MW-4,S5	
			EB112906	
VBLK11	Methylene Chloride	2.0 ug/L	EB112906	20.0 ug/L
			TB112906	
VBLK11	Methylene Chloride	2.0 ug/kg	SB-11,S6	20.0 ug/kg
VBLK13	Methylene Chloride	2.0 ug/kg	SB-14,S6	20.0 ug/kg
			MW-4,S5	

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
EB112906	Di-n-octylphthalate	1.0 ug/L	All Project Samples	10.0 ug/L
SBLK50	bis(2-Ethylhexyl)phthalate	490.0 ug/kg	SB-9,S6 SB-11,S6 SB-14,S4 MW-4,S5	4900.0 ug/kg

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
CCB 13:51	Manganese	8.09 ug/L	SB-9,S6 SB-11,S6 SB-14,S4 MW-4,S5	80.9 ug/L
Soil Prep Blank	Iron	19.802 mg/kg	SB-9,S6 SB-11,S6 SB-14,S4 MW-4,S5	198.02 mg/kg

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL, with the following exception(s):

Serial Dilution ID	Target Analyte(s)	%D	Affected Sample(s)
SB-9,S6	Aluminum	14	SB-9,S6
	Barium	13	SB-11,S6
	Calcium	18	SB-14,S4
	Iron	18	MW-4,S5
	Lead	17	
	Manganese	43	
	Zinc	21	

Action:
For serial dilution %D results >10%, qualify results > the MDL as "J" and non-detects as "UJ".

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E425

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-5,S5
MW-5,S7
SB-8,S4
SB-7,S6
EB113006
TB113006

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	VOCs	EPA 8260B/624	14 days
3.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
4.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
5.	ICP/MS Metals	EPA 6020	180 days
6.	ICP Metals	EPA 6010B/200.7	180 days
7.	Mercury	EPA 7471A	28 days
8.	Mercury	EPA 7470A	28 days
9.	Cyanide, Total	EPA 9010B/9014	14 days
10.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
F	11/21/06 1016	Methylene Chloride	50.00	0.35	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
F	12/05/06 0957	Bromomethane	35.60	0.05	EB113006	See Action #2 Below
		Methylene Chloride	32.10	0.24	TB113006	See Action #1 Below
		trans-1,2-Dichloroethene	-43.60	0.35		See Action #1 Below
		Carbon tetrachloride	-26.90	0.41		See Action #1 Below
F	12/06/06 1458	Bromomethane	35.60	0.05	MW-5,S5	See Action #2 Below
		Methylene Chloride	35.50	0.23	MW-5,S7	See Action #1 Below
		trans-1,2-Dichloroethene	-45.40	0.35	SB-8,S4	See Action #1 Below
		Methyl tert-butyl ether	-28.60	0.78	SB-7,S6	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.
Action #2
Positive results are qualified "J", estimated and non-detected analytes as "R", rejected.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
EB113006	Methylene Chloride	2.1 ug/L	MW-5,S5 MW-5,S7 SB-8,S4 SB-7,S6	21.0 ug/L
TB113006	Methylene Chloride	2.0 ug/L	MW-5,S5 MW-5,S7 SB-8,S4 SB-7,S6 EB113006	20.0 ug/L
VBLK11	Methylene Chloride	2.0 ug/L	EB113006 TB113006	20.0 ug/L
VBLK13	Methylene Chloride	2.0 ug/kg	MW-5,S5 MW-5,S7 SB-8,S4 SB-7,S6	20.0 ug/kg

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
SBLK62	bis(2-Ethylhexyl)phthalate	78.0 ug/kg	SB-7,S6	780.0 ug/kg

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria, with the following exception(s):

Surrogate Percent Recovery Criteria				
Surrogate		Aqueous Matrix (%)	Solid Matrix (%)	Vapor Matrix (%)
Dibromofluoromethane	S01	low high	low high	low high
1,2-Dichloroethane-d4	S02	low high	low high	low high
Toluene-d8	S03	low high	low high	low high
4-Bromofluorobenzene	S04	73 - 120	low high	low high

Project Sample ID	Matrix	S01 %R	S02 %R	S03 %R	S04 %R	Positive Results	Non Detect (ND)
TB113006	AQ				70	J	UJ

Affected Analytes

All VOC target analytes in identified project sample(s).

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E535

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-1,S2
SB-1,S2
SB-2,S3
SB-19,S2
SB-19,S5
EB120106
TB120106
MW-7,S4
SB-17,S6
EB120406
TB120406
SB-17,S1

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	VOCs	EPA 8260B/624	14 days
3.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
4.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
5.	ICP Metals	EPA 6010B	180 days
6.	ICP Metals	EPA 6010B/200.7	180 days
7.	Mercury	EPA 7471A	28 days
8.	Mercury	EPA 7470A	28 days
9.	Cyanide, Total	EPA 9010B/9014	14 days
10.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
P	11/16/06 2130	Methylene chloride	34.30	0.40	All Project Samples	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
P	12/05/06 1608	Bromomethane	27.40	0.15	All Project Samples	See Action #1 Below
		Trichlorofluoromethane	27.90	0.41		See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRL less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
V	12/13/06 1117	2,4-Dinitrophenol	25.30	0.12	MW-7,S4 SB-17,S6 SB-17,S1	See Action #1 Below
V	12/15/06 0726	Benzaldehyde	43.40	1.08	MW-1,S2 SB-1,S2 SB-2,S3 SB-19,S2 SB-19,S5	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
TB120106	Methylene chloride	1.2 ug/L	MW-1,S2 SB-1,S2 SB-2,S3 SB-2,S3 SB-19,S5	12.0 ug/L
TB120406	Methylene chloride Toluene	2.0 ug/L 3.1 ug/L	MW-7,S4 SB-17,S6 SB-17,S1	20.0 ug/L 15.5 ug/L
VBLK11	Methylene chloride	2.0 ug/kg	MW-1,S2 SB-1,S2 SB-2,S3 SB-19,S2 SB-19,S5 MW-7,S4 SB-17,S6 SB-17,S1	20.0 ug/kg
VBLK11	Methylene chloride	2.4 ug/L	TB120106 TB120406	24.0 ug/L

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
EB120106	Pyrene	0.2 ug/L	MW-1,S2 SB-1,S2 SB-2,S3 SB-19,S2 SB-19,S5	1.0 ug/L

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

LCS ID / Project Sample MS	Target Analyte(s)	%R Criteria	%R	Affected Sample(s)
SB-17,S1 MS	Chlorobenzene	76 - 124	75	SB-17,S1
SB-17,S1 MSD	Chlorobenzene	76 - 124	72	SB-17,S1

Action:

If the LCS %R is greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the LCS %R is less than the lower acceptance limit associated target analyte positive results are qualified "J" and non-detects are qualified "R". If the MS/MSD is from a project sample and the %R greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the MS/MSD %R is >10%, but less than the lower acceptance limit, associated analyte positive results are qualified "J" and non-detects are qualified "UJ". If the MS/MSD %R is less than 10% associated target analyte positive results are qualified "J" and non-detects are qualified "R". MS/MSD qualifiers are only applied to affected samples of the same matrix. If the MS/MSD is a LAB sample do not qualify project samples.

LCS ID / Project Sample MS	Target Analyte(s)	%R Criteria	%R	Affected Sample(s)
SB-17,S1 MSD	Pyrene	41 - 138	152	SB-17,S1

Action:

If the LCS %R is greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the LCS %R is less than the lower acceptance limit associated target analyte positive results are qualified "J" and non-detects are qualified "R". If the MS/MSD is from a project sample and the %R greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the MS/MSD %R is >10%, but less than the lower acceptance limit, associated analyte positive results are qualified "J" and non-detects are qualified "UJ". If the MS/MSD %R is less than 10% associated target analyte positive results are qualified "J" and non-detects are qualified "R". MS/MSD qualifiers are only applied to affected samples of the same matrix. If the MS/MSD is a LAB sample do not qualify project samples.

LCS ID / Project Sample MS	Type	Target Analyte(s)	%R	Affected Sample(s)	Positive Results	Non Detect (ND)
SB-17,S1	MS	Aluminum	48	MW-1,S2	J	UJ
		Antimony	46	SB-1,S2	J	UJ
		Chromium	134	SB-2,S3	J	
		Copper	157	SB-19,S2	J	
				SB-19,S5		
				MW-7,S4		
				SB-17,S6		
				SB-17,S1		
SB-17,S1	MSD	Aluminum	66	MW-1,S2	J	UJ
		Antimony	45	SB-1,S2	J	UJ
				SB-2,S3		
				SB-19,S2		
				SB-19,S5		
				MW-7,S4		
				SB-17,S6		
				SB-17,S1		

LCS ID / Project Sample MS	Type	Target Analyte(s)	%R	Affected Sample(s)	Positive Results	Non Detect (ND)
SB-17,S1	MS	Mercury	1021	MW-1,S2 SB-1,S2 SB-2,S3 SB-19,S2 SB-19,S5 MW-7,S4 SB-17,S6 SB-17,S1	J	
SB-17,S1	MSD	Mercury	249	MW-1,S2 SB-1,S2 SB-2,S3 SB-19,S2 SB-19,S5 MW-7,S4 SB-17,S6 SB-17,S1	J	

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL, with the following exception(s):

Sample ID	Matrix	Target Analyte(s)	RPD	Affected Sample(s)
SB-17,S1	Soil	Arsenic	22	MW-1,S2
		Chromium	33	SB-1,S2
		Magnesium	26	SB-2,S3
		Manganese	38	SB-19,S2
		Zinc	55	SB-19,S5
				MW-7,S4
				SB-17,S6
				SB-17,S1

Action:
Analytes with RPDs greater than 20% should be qualified "J" and non-detects qualified "UJ".

Sample ID	Matrix	Target Analyte(s)	RPD	Affected Sample(s)
SB-17,S1	Soil	Mercury	80	MW-1,S2
				SB-1,S2
				SB-2,S3
				SB-19,S2
				SB-19,S5
				MW-7,S4
				SB-17,S6
				SB-17,S1

Action:
Analytes with RPDs greater than 20% should be qualified "J" and non-detects qualified "UJ".

Sample ID	Matrix	Target Analyte(s)	RPD	Affected Sample(s)
SB-17,S1	Soil	Total Cyanide	22	MW-1,S2 SB-1,S2 SB-2,S3 SB-19,S2 SB-19,S5 MW-7,S4 SB-17,S6 SB-17,S1

Action:
Analytes with RPDs greater than 20% should be qualified "J" and non-detects qualified "UJ".

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E587

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
SB-6,S3

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
3.	ICP Metals	EPA 6010B	180 days
4.	Mercury	EPA 7471A	28 days
5.	Cyanide, Total	EPA 9010B/9014	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
F	11/21/06 1016	Methylene chloride	50.00	0.35	SB-6,S3	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
F	12/09/06 0911	Bromomethane	47.50	0.04	SB-6,S3	See Action #2 Below
		Methylene chloride	34.30	0.23		See Action #1 Below
		trans-1,2-Dichloroethene	-46.70	0.35		See Action #1 Below
		Carbon tetrachloride	-25.40	0.40		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.
Action #2
Positive results are qualified "J", estimated and non-detected analytes as "R", rejected.

During the analysis of SVOCs (SW846 8270C), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRL less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
	12/12/06 1315	2,4-Dinitrophenol	30.20	0.12	SB-6,S3	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
VBLK16	Methylene chloride	2.0 ug/kg	SB-6,S3	20.0 ug/kg

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

G:\Projects\33879\003 Report w DUSR\DUSRs\[A06E587_DV Notes.xls]Final Report

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E629

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-6,S2
SB-16,S1
SB-16,S7
DUP120506
EB120506
TB1205069

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B	14 days
2.	VOCs	EPA 8260B/624	14 days
3.	SVOCs (BNAs)	EPA 8270C	14 days ext/40 days analysis
4.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
5.	ICP Metals	EPA 6010B	180 days
6.	ICP Metals	EPA 6010B/200.7	180 days
7.	Mercury	EPA 7471A	28 days
8.	Mercury	EPA 7470A	28 days
9.	Cyanide, Total	EPA 9010B/9014	14 days
10.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
F	11/21/06 1016	Methylene chloride	50.00	0.35	MW-6,S2 SB-16,S1 SB-16,S7 DUP120506	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
F	12/08/06 0910	Bromomethane	38.10	0.05	MW-6,S2	See Action #2 Below
		Methylene chloride	30.70	0.24	SB-16,S1	See Action #1 Below
		trans-1,2-Dichloroethene	-50.40	0.36	SB-16,S7	See Action #1 Below
		Carbon tetrachloride	-29.20	0.42	DUP120506	See Action #1 Below
		Methyl acetate	25.40	0.19		See Action #1 Below
N	12/14/06 0833	Acetone	45.50	0.08	EB120506	See Action #1 Below
		2-Butanone	48.70	0.14	TB1205069	See Action #1 Below
		Bromoform	25.10	0.35		See Action #1 Below
		4-Methyl-2-pentanone	43.50	0.33		See Action #1 Below
		2-Hexanone	46.00	0.23		See Action #1 Below
		1,1,2,2-Tetrachloroethane	31.60	0.63		See Action #1 Below
		1,2-Dibromo-3-chloropropane	57.40	0.09		See Action #1 Below
		Methyl acetate	34.80	0.33		See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Action #2

Positive results are qualified "J", estimated and non-detected analytes as "R", rejected.

During the analysis of SVOCs (SW846 8270C), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRL less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
V	12/13/06 1117	2,4-Dinitrophenol	25.30	0.12	EB120506	See Action #1 Below
	12/12/06 1315	2,4-Dinitrophenol	30.20	0.12	MW-6,S2 SB-16,S1 SB-16,S7 DUP120506	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
VBLK15	Methylene chloride	2.0 ug/kg	MW-6,S2 SB-16,S1 SB-16,S7 DUP120506	20.0 ug/kg

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
SBLK82	bis(2-Ethylhexyl)phthalate Di-n-octylphthalate	54.0 ug/kg 10.0 ug/kg	MW-6,S2 SB-16,S1 SB-16,S7 DUP120506	540.0 ug/kg 100.0 ug/kg

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-E730

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
SB-16,S2

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	ICP Metals	EPA 6010B	180 days
2.	Mercury	EPA 7471A	28 days
3.	Cyanide, Total	EPA 9010B/9014	14 days
4.	pH	EPA 9045B	ASAP (24 hours)

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols. No Qualification of the data is recommended.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols. No Qualification of the data is recommended.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target analytes were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-F467

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-1
MW-2
EB122606
TB122606

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B/624	14 days
2.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
3.	ICP Metals	EPA 6010B/200.7	180 days
4.	Mercury	EPA 7470A	28 days
5.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
G	12/20/06 1124	Methylene chloride	33.60	0.58	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
U	12/13/06 0906	2,4-Dinitrophenol	44.60	0.10	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
G	01/02/07 2235	Chloroethane	-36.20	0.38	All Project Samples	See Action #1 Below
		Methyl acetate	-41.20	0.91		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRL less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
U	01/03/07 0853	2-Methylnaphthalene	-31.80	1.00	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
TB122606	Acetone	8.7 ug/L	All Project Samples	87.0 ug/L

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

LCS ID / Project Sample MS	Type	Target Analyte(s)	%R	Affected Sample(s)	Positive Results	Non Detect (ND)
MW-2	MS	Antimony	0	All Project Samples	J	R

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-F495

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-4
MW-5
MW-3
EB-122706
TB-122706

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B/624	14 days
2.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
3.	ICP Metals	EPA 6010B/200.7	180 days
4.	Mercury	EPA 7470A	28 days
5.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
U	12/13/06 0906	2,4-Dinitrophenol	44.60	0.10	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of SVOCs (SW846 8270C), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRL less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
U	01/03/07 0853	2-Methylnaphthalene	-31.80	1.00	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
TB-122706	Acetone	7.5 ug/L	All Project Samples	75.0 ug/L
	Methylene chloride	0.7 ug/L		6.5 ug/L
VBLK48	Methylene chloride	0.6 ug/L	All Project Samples	6.4 ug/L

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

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Data Usability Summary Report (DUSR)
RG&E Canal Street
Analytical Laboratory: Severn Trent Laboratories, Inc. – Buffalo, NY
Sample Delivery Group # A06-F530

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-6
MW-7
MW-4
FD-122806
EB-122806
TB122806

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B/624	14 days
2.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
3.	ICP/MS Metals	EPA 6020/200.8	180 days
4.	Mercury	EPA 7470A	28 days
5.	Cyanide, Total	EPA 335.2	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group. No qualification of the data is recommended.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
G	12/20/06 1124	Methylene chloride	33.60	0.58	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
W	12/18/06 1031	Hexachlorocyclopentadiene	35.40	0.17	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
G	01/03/07 2144	Methyl acetate	-28.80	0.83	All Project Samples	See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
TB122806	Acetone	4.4 ug/L	All Project Samples	44.0 ug/L

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
EB-122806	Di-n-octylphthalate	0.6 ug/L	All Project Samples	6.0 ug/L
SBLK52	Di-n-octylphthalate	0.7 ug/L	All Project Samples	7.0 ug/L

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B, 8270C, and/or 8082 to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria. In a few instances, sample extracts required dilution prior to analysis to either improve instrument performance by minimizing matrix interference or enable quantification of the detected target analytes within the instrument calibration range. Where applicable, the laboratory qualified the reported results indicating the system monitoring compound recovery could not be calculated due to a sample extract dilution. In cases where the instrument resolution appeared to be unaffected by the diluted sample matrix, the sample results were accepted without qualification. No qualification of the data is recommended.

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria. No qualification of the data is recommended.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and/or 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a "B". If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the "B" qualifier was not carried forward for database input; if less than the 10X or 5X rule the "B" qualifier was replaced with a "U". The "J" qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.

MEMORANDUM

15 November 2007
File No. 33879-003

TO: Jon Babcock
Sr. Engineer

FROM: Michael G. Nickelsen
Sr. Scientist

SUBJECT: Canal Street Former MGP Site

Analytical results for environmental samples associated with TestAmerica, Inc. laboratory data package AO7-B814.

Each laboratory data package was reviewed with guidance provided by the United States Environmental Protection Agency (USEPA) **National Functional Guidelines for Organic Data Review** (EPA 540/R-99/008, Oct 1999), and/or **National Functional Guidelines for Inorganic Data Review** (EPA 540-R-04-004, Oct 2004) and **NYSDEC Guidance for the Development of Quality Assurance Plans and Data Usability Summary Reports (DUSR)**, September 1997. Laboratory method specific criteria as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996 were used, where applicable, if the analytical anomaly identified was not addressed by the guidelines referenced above.

Data validation of the analytical results was performed by Ethan G. Lee and reviewed and approved by me.

Data Usability Summary Report (DUSR)
Canal Street Rochester Former MGP Site
Analytical Laboratory: TestAmerica - Buffalo, NY
Sample Delivery Group # A07-B814

Analytical results for the project samples were reviewed to evaluate the data usability. Data was assessed in accordance with guidance from the following Federal and/or State guidance documents:

- USEPA National Functional Guidelines for Inorganic Data Review (EPA 540-R-04-004)
- USEPA National Functional Guidelines for Organic Data Review (EPA 540/R-99/008) and/or
  USEPA National Functional Guidelines for Low Concentration Organic Data Review (EPA 540-R-04-004)
- NYSDEC "Guidance for the Development of Quality Assurance Plans and
  Data Usability Summary Reports (DUSR)", September 1997

and method protocol criteria where applicable as prescribed by "Test Methods for Evaluating Solid Waste", SW846, Update III, 1996.

This DUSR pertains to the following samples:

Sample ID
MW-2
FD
MW-4
MW-1
MW-6
MW-5
MW-3
EB
TRIP BLANK 10-12-07
TB-2
TRIP BLANK 10-11-07

Project Samples were analyzed according to the following analytical methods:

	Parameter	Analytical Method	Holding Time Criteria
1.	VOCs	EPA 8260B/624	14 days
2.	SVOCs (BNAs)	EPA 8270C/625	7 days ext/40 days analysis
3.	ICP Metals	EPA 6010B/200.7	180 days
4.	Mercury	EPA 7470A	28 days
5.	Cyanide, Total	EPA 9012A	14 days

The following items/criteria applicable to the analysis of project samples and associated QA/QC procedures were reviewed.

- Holding Times
- GC/MS Instrument Performance Check
- Initial Calibration Procedures
- Continuing Calibration Procedures
- Blank Sample Analysis
- System Monitoring Compound Recoveries
- Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries
- Internal Standard Recoveries
- Duplicate Sample Analysis
- ICP Interference Check Sample Performance
- ICP Serial Dilution Replicate Percent Difference
- Sample Data Reporting Format
- Data Qualifiers
- Summary

Preservation and Holding Times

Maximum allowable holding times, measured from the time of sample collection to the time of sample preparation or analysis, were met for each project sample analyzed as part of this sample delivery group, with the following exception(s):

During the analysis of VOCs (EPA Method 8260B) preservation and/or technical holding times were exceeded for project samples shown below. Sample results should be qualified according to the actions specified in the following table:

Lab ID	Sample ID	Matrix	Action
A7B81403	MW-4	AQ	See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated reporting limit.

GC/MS Instrument Performance Check

GC/MS instrument performance checks for the instruments used in the analysis of project samples fell within method specific criteria without exception. No qualification of the data is recommended.

Initial Calibration Procedures

Initial instrument calibration procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
HP5	10/16/07 1050	Bromomethane	45.40	0.14	All Project Samples	See Action #1 Below
		Methylene Chloride	53.00	0.65		See Action #1 Below
		1,2,4-Trichlorobenzene	31.30	0.95		See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the initial calibration standards for the following target compound(s) exhibited a percent relative standard deviation (%RSD) greater than the acceptance criteria of 30% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%RSD	RRF	Affected Sample(s)	Corrective Action
HP5	09/24/07 1450	2,4-Dinitrophenol	35.80	0.15	All Project Samples	See Action #1 Below
		Di-n-octylphthalate	31.20	1.20		See Action #1 Below

Action #1

Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Continuing Calibration Procedures

Continuing calibration verification (CCV) procedures for the analysis of project samples were consistent with the guidelines prescribed by EPA protocols, with the following exception(s):

During the analysis of VOCs (SW846 8260B), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRF less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
HP5	10/23/07 2226	Bromomethane	35.60	0.09	All Project Samples	See Action #1 Below
		Chloroethane	-26.60	0.10		See Action #1 Below
		Methylene Chloride	29.10	0.46		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

During the analysis of SVOCs (SW846 8270C), the continuing calibration verification (CCV) standards for the following target compound(s) exhibited a percent drift (%D) greater than the acceptance criteria of 25% and/or a RRL less than 0.05:

Inst.	Date / Time	Target Analyte(s)	%D	RRF	Affected Sample(s)	Corrective Action
HP5	10/18/07	Di-n-octylphthalate	-34.50	1.60	All Project Samples	See Action #1 Below
	2347	Benzo(g,h,i)perylene	-28.80	1.30		See Action #1 Below

Action #1
Positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated detection limit.

Blank Sample Analysis

In accordance with cited USEPA guidelines, positive sample results should be reported unless the concentration of the compound in the project sample is less than or equal to 10 times (10X) the amount in any blank for metals and the common organic laboratory contaminants (methylene chloride, acetone, 2-butanone, cyclohexane, and phthalate esters), or 5 times (5X) the amount for other target compounds. Target compounds were not detected in associated blank samples (trip, equipment, method) prepared and analyzed concurrently with the project samples, with the following exception(s):

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
VBLK08	Bromomethane	0.6 ug/L	All Project Samples	2.8 ug/L
	cis-1,2-Dichloroethene	0.6 ug/L		2.8 ug/L

Blank	Target Analyte(s)	Concn.	Affected Sample(s)	Flag sample results with a "U" if < to this value
EB	Butylbenzylphthalate	2.0 ug/L	All Project Samples	20.0 ug/L
SBLK06	Butylbenzylphthalate	3.0 ug/L	All Project Samples	30.0 ug/L

System Monitoring Compound Recoveries

System monitoring/surrogate compounds are added to each sample prior to analysis of organic parameters by EPA Methods 8260B and 8270C to confirm the efficiency of the sample preparation procedure. The calculated recovery for each surrogate compound was evaluated to confirm the accuracy of the reported results. The calculated recovery of these compounds fell within the laboratory specific quality control criteria, with the following exception(s):

Surrogate Percent Recovery Criteria				
Surrogate		**Aqueous Matrix (%)**	**Solid Matrix (%)**	
Phenol-d5	S01	16 - 120	low - high	Acid
2-Fluorophenol	S02	20 - 120	low - high	Acid
2,4,6-Tribromophenol	S03	52 - 132	low - high	Acid
Nitrobenzene-d5	S04	46 - 112	low - high	Base/Neutral
2-Fluorobiphenyl	S05	48 - 116	low - high	Base/Neutral
Terphenyl-d14	S06	24 - 136	low - high	Base/Neutral
2-Chlorophenol-d4	S07	low - high	low - high	Acid
1,2-Dichlorobenzene-d4	S08	low - high	low - high	Base/Neutral

										Acid		Base/Neutral	
		S01	S02	S03	S04	S05	S06	S07	S08	Positive	Non Detect	Positive	Non Detect
Project Sample ID	Matrix	%R	%R	%R	%R	%R	%R	%R	%R	Results	(ND)	Results	(ND)
MW-3	AQ	13	15		31	38				J	UJ	J	UJ
MW-4	AQ	14	17		37	45				J	UJ	J	UJ

Acid Extractable

2,4,5-Trichlorophenol, 2,4,6-Trichlorophenol, 2,4-Dichlorophenol, 2,4-Dimethylphenol, 2,4-Dinitrophenol, 2-Chlorophenol, 2-Methylphenol, 2-Nitrophenol, 4,6-Dinitro-2-methylphenol, 4-Chloro-3-methylphenol, 4-Methylphenol, 4-Nitrophenol, Pentachlorophenol, Phenol

Base/Neutral Extractable

1,1-Biphenyl, 2,2'-oxybis(1-Chloropropane), 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 2-Chloronaphthalene, 2-Fluorobiphenyl, 2-Methylnaphthalene, 2-Nitroaniline, 3,3'-Dichlorobenzidine, 3-Nitroaniline, 4-Bromophenyl phenyl ether, 4-Chloroanaline, 4-Chlorophenyl phenyl ether, 4-Nitroaniline, Acenaphthene, Acenaphthylene, Acetophenone, Anthracene, Atrazine, Benzaldehyde, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, bis(2-Chloroethoxy)methane, bis(2-Chloroethyl)ether, bis(2-Ethylhexyl)phthalate, Butylbenzylphthalate, Caprolactam, Carbazole, Chrysene, Dibenz(a,h)anthracene, Dibenzofuran, Diethylphthalate, Dimethylphthalate, Di-n-butylphthalate, Di-n-octylphthalate, Fluoranthene, Fluorene, Hexachlorobenzene, Hexachlorobutadiene, Hexachlorocyclopentadiene, Hexachloroethane, Indeno(1,2,3-cd)pyrene, Isophorone, Naphthalene, Nitrobenzene, N-Nitroso-di-n-propylamine, N-Nitrosodiphenylamine, Phenanthrene, Pyrene

Laboratory Control Samples, Matrix Spike/Matrix Spike Duplicate Recoveries

Analytical precision and accuracy was evaluated based on the laboratory control and matrix spike sample analyses performed concurrently with the project samples. For matrix spike samples, after the addition of a known amount of each target analyte to the sample matrix, the sample was analyzed to confirm the ability to identify these compounds within the sample matrix. For LCS analyses, after the addition of a known amount of each target analyte into laboratory reagent water, the sample was analyzed to confirm the ability of the analytical system to accurately quantify the compounds. The reported recovery of MS/MSD and LCS analyses fell within the laboratory QA acceptance criteria, with the following exception(s):

LCS ID / Project Sample MS	Target Analyte(s)	%R Criteria	%R	Affected Sample(s)
MW-3 MS	Phenol	17 - 120	14	All Project Samples
	2-Chlorophenol	47 - 120	33	
	N-Nitroso-di-n-propylamine	55 - 115	36	
	Acenaphthene	60 - 118	58	
MW-3 MSD	Phenol	17 - 120	12	All Project Samples
	2-Chlorophenol	47 - 120	27	
	N-Nitroso-di-n-propylamine	55 - 115	30	
	Acenaphthene	60 - 118	47	

Action:

If the LCS %R is greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the LCS %R is less than the lower acceptance limit associated target analyte positive results are qualified "J" and non-detects are qualified "R". If the MS/MSD is from a project sample and the %R greater than the upper acceptance limit, associated target analyte positive results are qualified "J" and non-detects should not be qualified. If the MS/MSD %R is >10%, but less than the lower acceptance limit, associated analyte positive results are qualified "J" and non-detects are qualified "UJ". If the MS/MSD %R is less than 10% associated target analyte positive results are qualified "J" and non-detects are qualified "R". MS/MSD qualifiers are only applied to affected samples of the same matrix. If the MS/MSD is a LAB sample do not qualify project samples.

Internal Standard Recoveries

Internal Standard compounds were added to each sample matrix prior to the analysis of organic parameters by EPA Methods 8260B and 8270C to quantify the amount of the target compounds detected within each sample. The calculated response of each IS compound fell within the QA/QC criteria of +100% and – 50% of the corresponding CCV standard. No qualification of the data is recommended.

Duplicate Sample Analysis

The replicate percent difference (RPD) was evaluated for each duplicate sample pair to monitor the reproducibility of the data. The RPD for each sample pair was within the QA/QC limit of 30% for aqueous samples and 50% for solid matrices, for those target analytes with sample concentrations >5X the MDL. No qualification of the data is recommended.

ICP Interference Check Sample Performance

The results of the ICP Interference Check Samples analyzed concurrently with the project samples were all within the acceptance criteria +/- 20% of true value as prescribed by USEPA guidance. No qualification of the data is recommended.

ICP Serial Dilution Replicate Percent Difference

The results of the ICP Serial Dilution samples analyzed concurrently with the project samples were in accordance with the EPA QA acceptance criteria of less than 10% RPD for those target analytes with sample concentrations >50X the MDL. No qualification of the data is recommended.

Sample Data Reporting Format

The sample data are presented using USEPA Contract Laboratory Protocol (CLP) format. The data package has been reviewed for completeness and found to contain each required sample result and associated QA/QC report form. The reporting format is complete and compliant with the objectives of the project. No qualification of the data is recommended.

Data Qualifiers

Data qualifiers were assigned by the laboratory to the reported results to identify target analytes detected below the reporting limit but above the method detection limit, and/or when target analytes were detected in the associated method/preparation blank sample. Based on a spot check of the data qualifiers used, these flags appeared to be applied to the reported results in accordance with EPA guidance.

Organic analyses samples that contained concentrations of target analytes at a reportable level in the associated method blanks were flagged by the laboratory with a “B”. If the target analyte concentration was greater than 10 times (10X) the amount in any blank for the common laboratory contaminants or 5 times (5X) the amount for other target compounds, the “B” qualifier was not carried forward for database input; if less than the 10X or 5X rule the “B” qualifier was replaced with a “U”. The “J” qualifier, which indicates an estimated value because the result was between the MDL and RL was carried through to the database.

Summary

The results presented in each report were found to be compliant with the data quality objectives for the project and usable. Based on our review, the usability of the data is 100%, with the few exceptions noted above.