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National Grid

Remedial Investigation Report

Former Manufactured Gas Plant Site
King Street, Ogdensburg, New York

September 2009

ARCADIS

DRAFT
Remedial Investigation Report

Former Manufactured Gas Plant Site, King Street, Ogdensburg, New York

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Executive Summary

This Remedial Investigation (RI) Report presents the findings of environmental investigations conducted at National Grid's King Street former Manufactured Gas Plant (MGP) site (the site) located in Ogdensburg, New York (Figure 1). Between 2003 and 2009, ARCADIS conducted the investigations on National Grid's behalf in order to characterize environmental conditions at the site in compliance with a Voluntary Consent Order between the New York State Department of Environmental Conservation (NYSDEC) and Niagara Mohawk (acquired by and now referred to as National Grid) dated January 25, 2002 (VCO Index Number D0-0001-0011).

The MGP operated for more than 75 years (ca. 1854 to at least 1930) producing gas using the coal carbonization process. Several byproducts from the MGP process, including coal tar, coal slag, cinders, ash, and gas purifier wastes, were produced during the gas manufacturing process and are present locally in the subsurface at the site and in some offsite areas near the site. Coal tar and purifier wastes are principally responsible for the impacts on soil and groundwater quality at and near the site. Coal tar is normally a dense non-aqueous phase liquid (DNAPL). DNAPLs are heavier than water and tend to sink below the water table when present in the subsurface in sufficient quantities. Coal tar contains many organic compounds, a number of which are regulated by the NYSDEC. Chief among these are benzene, toluene, ethylbenzene, and xylenes (BTEX) and a more general class of organic compounds called polycyclic aromatic hydrocarbons (PAHs). Purifier wastes often contain cyanide, which is also regulated by the NYSDEC. BTEX, PAHs, and cyanide are considered the constituents of concern (COCs) at the site.

National Grid completed two investigations in order to characterize the nature and extent of site-related COCs from the former MGP. A Site Characterization (SC) was performed to identify whether environmental conditions existed at the site that might be related to the MGP. The SC determined that the quality of soils and groundwater had been affected by the former MGP; therefore, an RI was conducted. The RI evaluated the nature and extent of site-related COCs, and assessed whether or not the COCs posed risks to human health and the environment.

Over the course of the investigations, 22 monitoring wells were installed, 41 soil borings were drilled, 7 test pits were excavated, soil vapor investigations were conducted, and more than 200 samples of environmental media were analyzed. The primary objectives of this work were to adequately characterize the nature and extent of MGP-related impacts to the environment and to evaluate the risk posed to human health and the environment by those impacts. The objectives were satisfied by the work performed during these investigations, and the information gathered will enable the evaluation of remedial alternatives for the site.

For the purpose of this report, the RI work was divided into three broad categories:

- ***Soil, Bedrock, and Groundwater Investigations***
- ***Soil Vapor Investigations***
- ***Risk Evaluation***

The following paragraphs describe the work performed under these categories and the resulting findings.

Soil, Bedrock, and Groundwater Investigations

These investigations characterized the geologic and hydrogeology setting of the site and site area and the nature and extent of site-related impacts to the subsurface. The results of the investigations identified two units as described below in descending order:

- **Fill** – Uppermost and most permeable unit (when compared to the underlying bedrock) comprised mostly of artificial fill and reworked native deposits that lie on the bedrock surface. The unit is 3 to 9 feet thick and groundwater flow in this unit is primarily toward the confluence of the St. Lawrence and Oswegatchie Rivers.

- **Ogdensburg Dolostone** – This unit underlies the fill at and near the site and was determined to be a minimum of 60 feet thick. This unit carries groundwater flow primarily in horizontal direction along thin, bedding plane fractures toward the St. Lawrence River. Vertical groundwater flow in this unit is limited due to the predominance of horizontal bedding plane fractures and presence of low permeable shale partings and beds of more competent rock. The average permeability of this unit is estimated to be an order of magnitude lower than the permeability of the fill.

Overburden soils that contain site-related COCs in excess of regulatory criteria consist primarily of those soils that contained visible coal tar. Coal tar was present locally in overburden soils near former MGP structures (i.e., tar wells, holders) on site and in an isolated area on the bedrock surface immediately west of the site. Coal tar was also observed in a pipe located west of the site. National Grid conducted a NYSDEC-approved IRM in 2007 to mitigate potential discharge of tar from this pipe to the City sewer system by plugging the end of the pipe. The majority of coal-tar-containing soils occur below the water table.

Coal tar was also locally observed in several of the bedrock investigation locations. Although the migration pathways for coal tar in the bedrock are complex, its extent in bedrock has been reasonably delineated. Coal tar occurs sporadically in the upper 15 feet of bedrock, primarily near the former MGP structures and a short distance (less than 50 feet) to the north and west of the site. Strong upward hydraulic gradients from the deeper bedrock to shallow bedrock, in combination with the physical properties of the coal tar, appear to inhibit further downward migration of coal tar.

Some of the COCs in coal tar and purifier wastes have dissolved and appear to have affected the quality of groundwater. The highest concentrations of site-related COCs in groundwater are observed in and downgradient from areas where these byproducts have been observed. The extent of site-related COCs in overburden groundwater at levels exceeding Standards or Guidance Values appears to be limited primarily to the site property and a short distance (100 feet or less) east, north, and west of the site. The extent of site-related COCs in bedrock groundwater at levels exceeding Standards and Guidance Values roughly mimics the extent of the plume in the overburden, but extends a greater distance (200 feet or more) to the north. Strong upward vertical hydraulic gradients in the bedrock constrain the dissolved-phase COCs to the shallower portions of the bedrock.

Soil Vapor Investigations

Three soil vapor investigations were completed during the RI, two on residential properties immediately east of the site, and one on the St. Lawrence Foods property immediately north of the site. The purpose of these investigations was to evaluate whether or not MGP-related VOCs were present in soil vapor and/or indoor air at the site, and near/within buildings on the properties. The investigations found that several VOCs were present in soil vapor and indoor air samples at low concentrations; however, the VOCs appeared not to be related to the MGP. By letters dated June 13, 2007 and April 2, 2009, the New York State Department of Health (NYSDOH) and NYSDEC have concluded that that no further soil vapor investigations are warranted at the site at this time.

Risk Evaluation

This evaluation assessed the potential risks posed to human health and the environment by site-related constituents. Potential risks posed to wildlife were evaluated by conducting a Fish and Wildlife Resource Impact Analysis (FWRIA). Potential risks posed to human health were evaluated through a Human Heath Exposure Evaluation (HHEE).

The FWRIA found that no threatened or endangered plant or animal species inhabited the site or the immediate surrounding areas, and that use of the site by wildlife is limited. Based on this information, and the analytical results of site soil and groundwater samples, the FWRIA concluded that there were no complete ecological exposure pathways at the site, and thus, no risk to wildlife.

The HHEE found that levels of COCs in some soils and groundwater affected by the site exceeded appropriate screening criteria; therefore, potentially complete exposure pathways for site-related constituents were evaluated. The evaluation found that the greatest potential for exposure is via direct contact with subsurface soils and groundwater that may be encountered during construction/excavation work. This potential exposure could be mitigated by using properly trained personnel and personal protective equipment. The evaluation also found that there is a potential for exposure to COCs in “surface soils”; however, potential exposure to COCs in surface soil is limited because the samples were collected from vegetated areas (i.e., direct exposure to soils is likely mitigated by the presence of groundcover) and the elevated levels of COCs were in samples collected in areas that are most likely not used on a frequent basis (i.e., within or along the site fence line). The evaluation did not identify any imminent threats to human health posed by the site.

Conclusion

National Grid has adequately characterized the nature and extent of the former MGP’s impacts on the environment and fulfilled the requirements of the Voluntary Consent Order. Based on the findings of the RI, no imminent threat to human health or the environment has been identified. Following the NYSDEC’s approval of this report, National Grid will identify Remedial Action Objectives and evaluate appropriate remedial measures for the site.

1. Introduction

This *Remedial Investigation Report* (RI Report) documents the findings of environmental investigations conducted from 2003 to 2009 at the King Street former MGP Site (site) (DEC site number V00479-6) located in Ogdensburg, New York (Figure 1). The RI was performed in accordance with a Voluntary Consent Order (VCO Index Number D0-0001-0011, dated January 25, 2002) (the "VCO")) between the New York State Department of Environmental Conservation (NYSDEC) and Niagara Mohawk (acquired by and now referred to as National Grid). The environmental investigations were conducted by ARCADIS on behalf of National Grid to meet the objectives described in the VCO and NYSDEC-approved work plans for RI work. The scopes of these work plans were presented in the following correspondence between National Grid and the NYSDEC:

- September 29, 2005 letter from National Grid regarding the scope of a Final Remedial Investigation Work Plan
- January 31, 2007 letter from National Grid and relevant correspondence between National Grid and the NYSDEC regarding the scope of a Supplemental Remedial Investigation Work Plan
- February 8, 2007 letter from National Grid and relevant correspondence between National Grid and the NYSDEC regarding the scope of work for Soil Vapor Sampling on the Durham property at 2 King Street
- August 25, 2008 letter which provided the NYSDEC-approved Phase 3 Remedial Investigation Work Plan

In addition to the findings of the RI work detailed in the above-referenced work plans, this RI Report also incorporates the work and findings of environmental investigations completed during a Site Characterization (SC), which was conducted in 2003 and 2004. The findings of the SC were presented to the NYSDEC in the *Initial Site Characterization Data Summary Report* (ISC Report) (BBL, 2004). For ease of presentation and review, the combined SC and RI work and findings are discussed together throughout the remainder of this RI Report. References to the SC and RI-related work plans will hereinafter be referred to as "work plans."

1.1 Report Organization

The RI Report is organized as follows:

- **Section 1: Introduction** — Discusses the site setting and history, including a summary of previous investigations and remedial measures and objectives that state the general purpose of the RI.

- **Section 2: Remedial Investigation Activities** — Describes the tasks performed and general methods followed to meet the investigation's objectives.

- **Section 3: Remedial Investigation Findings** — Presents and interprets field observations and laboratory results relating to the principal components of the field work: investigations of soil, bedrock, groundwater, and soil vapor.

- **Section 4: Risk Evaluation** — Presents the results of a Fish and Wildlife Resource Impact Analysis (FWRIA) and a Human Health Exposure Evaluation (HHEE) completed for the site.

- **Section 5: Summary and Conclusions** — Summarizes the findings of the RI and presents the conclusions drawn.

The text of this RI Report is supported by a variety of attachments, including tables, figures, boring logs and other items. The CD included with this RI Report contains additional documentation, including NYSDEC-approved work plans. A complete list of the items contained on the CD can be found in the table of contents.

1.2 Site Description and History

The site is located at 8 King Street, Ogdensburg, St. Lawrence County, New York on approximately ¾ acres of land (Figure 1). The site property is currently owned by St. Lawrence Gas Company of Massena, NY. As shown on Figure 2, the site elevation ranges from approximately 264 feet to 260 feet above mean sea level (AMSL), with the ground surface generally sloping downward to the north and west. The site consists of a grassy, vacant, fenced lot with residential properties bordering the site to the east and southeast. National Grid owns a vacant lot east of the site on 207/209 Lake St. A narrow strip of heavily vegetated wetland borders the site to the west and a steep vacant grassy slope is located south of the site. Residential properties are located further to the west and south. King Street is present north of the site, and runs generally southwest/northeast. Across King Street to the north, is an industrial/commercial property owned by the City of Ogdensburg.

The City leases this property to St. Lawrence Foods Corporation (a.k.a., Ahava Foods, Primo Foods, or the Cheese Factory). Some of the buildings on this property appear abandoned or are partially demolished. Lake Street is located beyond the residential properties that border the east/northeastern side of the site. Rensselaer Avenue is present south of the site, between the steep grassy slope and residential properties. Canal Street (a.k.a., Lincoln Avenue) is located west of the site, between the narrow wetland and residential properties.

Figure 1.1: Site Setting, from www.bing.com/maps/.

The former MGP operated from 1854 until at least 1930 using the coal carbonization process (Radian Corporation, 1985). The key features associated with the former MGP site through time include:

- a gas house (from c. 1874 through at least 1925) and retorts, purifiers, and condensers.
- gas holders at two locations north/northwest of the gas house (from c. 1865 to at least 1925).
- an electric light plant located south of the gas house (from c. 1892 to at least 1898).

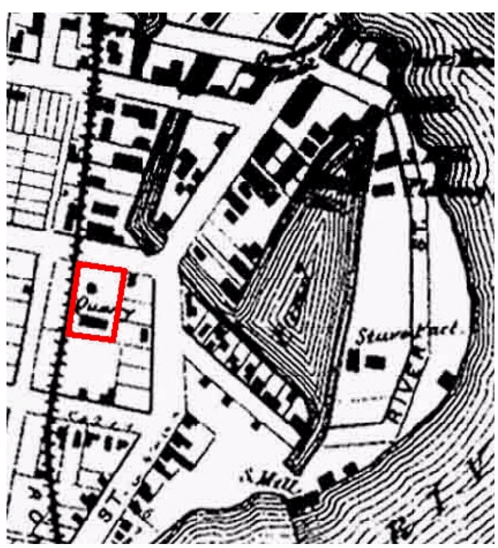

Figure 1.2: 1865 Map of Site Area

- a circular tar well (near northeast corner of site from c. 1904 to at least 1918) and a rectangular tar well (immediately northeast of gas house from c. 1925 until sometime before 1949).

- a regulator, governor house, coke room, and coal shed.

MGP features from the 1909 and 1925 Sanborn maps are shown on Figure 2. By 1949, the MGP features were not shown on the historical maps, with the exception of the governor house. Other historical features at the site or vicinity included the following:

- A quarry, which was present at the site from about 1850 to after 1865

- A power canal, mill pond/basin, and tail races north, northeast, and east of the site prior to 1884 until sometime after 1962

- A railroad track, which ran generally northwest/ southeast immediately west of the site from prior to 1865 until sometime after 1962

- Propane gas storage tanks, which were present at the site from prior to 1945 until sometime prior to 1997

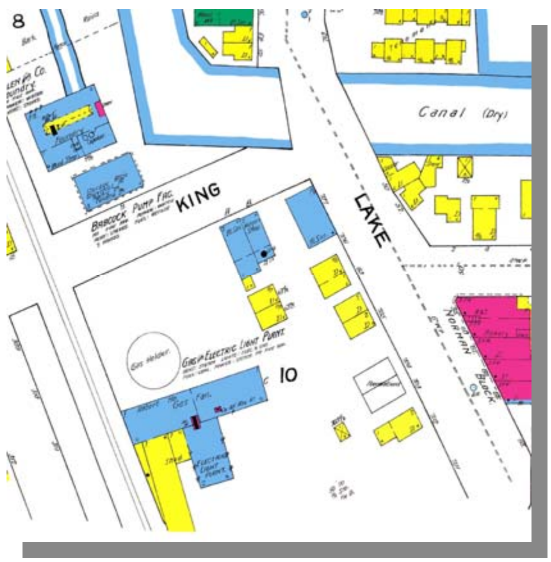

Figure 1.3: 1892 Sanborn Map

1.3 Summary of Previous Investigations and Remedial Measures

This section presents a brief summary of the previous investigations and remedial measures that have been conducted at the site. Detailed discussions of the previous investigation and remedial activities are provided in the respective documents included on the attached CD. The progression of previous investigations and remedial measures is presented in the following subsections in chronological order.

1.3.1 2003 to 2004 - Site Characterization

The SC was conducted pursuant to the VCO. The majority of the SC field activities were completed in December 2003, including test pit excavation, drilling soil borings, and installing and sampling monitoring wells. Surface soil sampling was delayed due to ground conditions and was conducted in April 2004. The objectives of the SC were to:

- evaluate whether MGP-impacted soil or groundwater is present at the site.
- determine the potential presence of MGP-related nonaqueous phase liquid (NAPL) in onsite soil and groundwater.
- evaluate, to the extent practicable, whether groundwater flow may be a pathway for offsite migration of MGP constituents (if present).
- provide sufficient data to evaluate necessary interim remedial measures.

The fieldwork of the SC included:

- conducting a GPR survey to evaluate the location of subsurface MGP structures and to refine the proposed subsurface sampling locations.
- drilling 16 soil borings (B-1, B-1B, B-2, B-3, B-4, B-4B, B-5; multiple borings labeled MW-1A-F from attempts to install monitoring well MW-1; and soil borings MW-1G, MW-2, and MW-3, which were converted to monitoring wells) to refusal at depths ranging from 2 feet below ground surface (feet bgs) in the southern area of the site to 16 feet bgs inside the foundation of the southern former gas holder.
- excavating five test pits (TP-1, TP-2, TP-3, TP-3B, and TP-4) to the depth of the water table (approximately 5 to 6 feet bgs).
- collecting subsurface soil samples from soil borings and test pits for chemical analyses.
- collecting three onsite (SS-01, SS-02, and SS-03) and five off-site (SS-04 through SS-08) surface soil samples for chemical analyses.
- installing and sampling groundwater from three overburden monitoring wells (MW-1 though MW-3).
- measuring a complete round of water levels at the three monitoring wells.

The locations of the SC investigations are shown on Figure 2. The ISC Report was submitted to NYSDEC in August 2004. A copy of this report is provided on the attached CD and the key findings of the ISC Report are summarized below.

The following are key findings of the SC:

- The site currently consists of a vacant lot that is vegetated with grass and weeds. Access to the site is restricted by a perimeter chain-link fence and locked gate.

- MGP-related constituents are present in soil and groundwater onsite.

- The presence of NAPL was identified in onsite soils, but the vertical and horizontal extent of the NAPL was not been defined.

- Subsurface features associated with former MGP-related structures still exist onsite, including two former tar wells, the foundation of the former subgrade holder, the former at-grade holder foundation, the former governor house foundation, and the former valve house foundation. All above grade structures were observed to have been demolished.

- Shallow groundwater flow is generally to the northwest, and the saturated overburden thickness is generally less than 3 feet.

- Total polycyclic aromatic hydrocarbon (PAH) concentrations in the majority of the onsite subsurface soil samples exceed the NYSDEC Technical Administrative Guidance Memorandum (TAGM) 4046 500 parts per million (ppm) total semi-volatile organic compound (SVOC) soil cleanup objective. No pesticides or polychlorinated biphenyls (PCBs) were detected in the onsite subsurface soil sample that was analyzed for these constituents.

- Total PAH and cyanide concentrations in the onsite surface soil samples were slightly elevated compared to the offsite background samples.

- Groundwater samples collected from each monitoring well exceeded the NYSDEC Class GA standards for benzene, toluene, and xylenes. Groundwater samples from MW-1 and MW-2 also exceeded the standard for ethylbenzene and cyanide. Numerous other SVOC standards and guidance values were also exceeded.

The SC concluded that IRM activities are not recommended for this site and potential remedial measures should be evaluated and implemented as per standard timeframes and procedures. The SC further concluded that additional investigations were warranted to evaluate potential offsite migration and to determine the extent of NAPL and dissolved-phase MGP-related constituents.

1.3.2 2007 - Huot Building Demolition

On January 29, 2007, National Grid purchased the property located at 207/209 Lake Street. The property is located adjacent to the former MGP site which is located to the west. The property was owned by Mr. Randy Huot and contained a vacant four family residential structure with a floor space of approximately 4,500 square feet occupying two floors (gross floor area). The building was wood-sided with a metal/asphalt shingle roof and a stone/ masonry foundation and concrete basement floor slab. A two-level wooden porch was located on the back of the building and a single level wooden porch/enclosed entrance was located in the front of the building.

National Grid contracted with Op-Tech Environmental Services, Inc (Op-Tech) to complete a demolition of the building from November 12 through November 19, 2007. ARCADIS provided oversight of the work performed by Op-Tech to confirm that the work was completed in accordance with the Contract Documents (National Grid, 2007). The details regarding the demolition were documented in the *Former Huot Building Demolition Report* (February 2008). A copy of this report is provided on the attached CD.

1.3.3 2007 - Focused Surface Cover

National Grid conducted a NYSDEC-approved IRM consisting of installing a focused surface cover in an area of the former Huot property (207/209 Lake Street). The focused surface cover IRM was conducted in conjunction with the demolition of the house located on the former Huot property. The purpose of this IRM was to mitigate potential exposure to potential MGP-related materials observed at the ground surface in an area of the property.

The IRM surface cover was installed in general conformance with the NYSDEC-approved revised Work Plan for Focused Surface Cover IRM, dated April 12, 2007. The IRM surface cover installation was completed on November 14, November 15 and November 26, 2007 by Op-Tech. The IRM surface cover consisted of two layers of nonwoven geotextile fabric (Geotex 801) over the IRM surface cover limits followed by placement of approximately 6 inches of select fill material on top of the fabric. The select fill material extended beyond the limits of the fabric by approximately 3 feet on the north and east sides. A copy of the letter describing this IRM is provided on the attached CD.

1.3.4 2009 - Sewer Investigation and Pipe Plugging

National Grid completed investigations of a portion of the City of Ogdensburg's (City's) combined sewer system located downstream from the site. The investigation was conducted in March 2009 in accordance with the February 18, 2009 Sewer Investigation Work Plan that was approved by the NYSDEC in a February 27, 2009 letter. The investigations were prompted by the findings of the utility evaluation conducted during the Phase III RI in October 2008. The Phase III RI work identified coal tar in a lateral pipe that extended from the western portion of the site, along the fence line, to one of the manholes in King Street.

The investigations and their objectives included:

- Lateral Pipe Evaluation – Evaluate the limits of the two lateral pipes that tie into the combined sewer system at/near the site to confirm that no other service connections are evident prior to permanently plugging the lateral pipes.

- Sewer System Reconnaissance – Confirm the configuration of the portion of the sewer system located downstream of the lateral pipes.

- Sediment/Debris Inspection – Confirm that MGP related materials are not present in the portion of the sewer system located downstream of the lateral pipes.

The sewer investigations identified the following:

- Two 8-inch diameter laterals extend from the site and terminate in two manholes in King Street. Neither of these laterals was observed to have any additional tie-ins.

- The configuration of the combined sewer system downstream of the site was confirmed to be consistent with mapping previously provided by the City of Ogdensburg.

- There were no visual MGP-related impacts observed in the material within the manholes located downstream from the site.

The result of the sewer investigations were presented in an April 10, 2009 memorandum to the NYSDEC. A copy of this memorandum is provided on the attached CD.

Based on the findings of the Phase II RI work and the subsequent sewer investigation, National Grid conducted a NYSDEC-approved IRM to isolate the two existing lateral pipes (extending from the site) from the existing sewer system located to the north of the site.

Pipe plugging activities were performed in general conformance with the March 10, 2009 letter from ARCADIS to the City. The pipe plugging work was performed by Op-Tech and ARCADIS on March 20, 2009 and April 29, 2009. The plugging essentially consisted of installing a mechanical plug and non-shrink ground at the downstream ends of each of the lateral pipes. The pipe plugging activities were documented in a May 20, 2009 letter to the NYSDEC. A copy of this letter is provided on the attached CD.

1.4 Remedial Investigation Objectives

The VCO outlined a general objective to satisfactorily complete RIs at National Grid's non-owned MGP sites (including the Ogdensburg Site). The general objective states that an RI should include all the appropriate elements set forth in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); the National Contingency Plan (NCP) of March 8, 1990; the United States Environmental Protection Agency (USEPA) guidance document entitled, *Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA* (USEPA, 1988); and appropriate USEPA and NYSDEC technical and administrative guidance documents, so that when completed, the RI and preceding work would meet the regulatory definition of an RI.

In compliance with the VCO, the RI had the following overall objectives:

1) Characterize the site by establishing the nature and extent of on-site and off-site MGP-related impacts.

2) Provide the information needed to evaluate on-site and off-site remedial actions to address MGP-related impacts.

2. Remedial Investigation Activities

2.1 Overview

The RI consisted of three distinct field programs designed to meet the investigation objectives discussed in Section 1:

- Soil and Bedrock Investigation
- Groundwater Investigation
- Soil Vapor Investigation

The work plans outlined the scope of these investigations and the procedures to be used to perform them. In general, the field activities identified in the work plans were performed in accordance with the NYSDEC-approved *Generic Site Characterization/IRM Work Plan for Site Investigations at Non-Owned Former MGP Sites* (dated November 2002) and supporting appendices. This section describes the work completed, including minor, necessary deviations from the work plans that were approved by the NYSDEC during the course of the RI. ARCADIS conducted the field work from 2005 to 2009. Several other firms contributed work integral to the field effort, as follows:

- Drilling services by Parratt-Wolff of East Syracuse, New York

- Analytical services by Test America Laboratories of Edison, New Jersey, Knoxville, Tennessee, and Burlington, Vermont, and Alpha Analytical of Mansfield, Massachusetts

- Forensic evaluation services by NewFields Environmental Forensics Practice, LLC of Rockland, Massachusetts

2.2 Soil and Bedrock Investigation

The soil and bedrock investigation consisted of two forms of field exploration: drilling soil/bedrock borings and excavating test pits. In most cases, this work provided two types of data:

- Visual classification of subsurface materials and site-related impacts
- Analytical samples to identify and quantify site-related impacts to soil

The investigation method, sampling location, and suite of samples collected varied from point to point to meet the objectives of the work task. This section describes the varied tasks included in the soil and bedrock investigation, including the general methods applied and general objectives addressed.

Additional information relating to the soil and bedrock investigation can be found in the following places:

- Figure 2 depicts boring and test-pit sample locations.
- Appendix A contains boring and test-pit logs for all onsite and offsite investigations.
- Table 1 provides a comprehensive list of analytical sample locations and analytes for all site-related investigations, and Table 2 summarizes analytical results. These results are discussed later in Sections 3 and 4.

2.2.1 Borings

The RI included drilling and sampling 54 borings between 2005 and 2008. As a primary method to investigate the geology and the nature and extent of site-related impacts on and near the site, the completed borings provide data to meet a variety of objectives including acquisition of subsurface samples for physical or chemical testing and/or to provide for installation of a monitoring well.

Figure 2.1: Typical Setup for Drilling Borings, monitoring well MW-20R shown, looking north

The 54 borings ranged in depth from approximately 3 to 70 feet bgs and were typically drilled to refusal (assumed to be the top of the bedrock). Exceptions are those borings drilled into the bedrock to install bedrock monitoring wells or the three hand-auger borings (HA-1, HA-2, and HA-3). All bedrock drilling was completed using bedrock coring equipment and the bedrock holes produced are referred to as "coreholes". Of the 54 borings drilled during the RI, 15 were completed as bedrock monitoring wells/well clusters (two wells in a single corehole). The monitoring wells installed in both overburden and bedrock are discussed later in this section. A list of the RI borings and primary rationale for completing the borings is provided in the following table.

Table 2.1 RI Boring Summary

Boring Identification	General Location	Primary Rationale
B-6 and B-7	Northeast of site, across King Street	Drilled in the approximate area of the former canal to evaluate the potential presence of MGP-related impacts in the former canal.
B-8a, B-8b, B-8c, B-8d, and B-8e	East of site, on former Huot property	Drilled in an area exhibiting stressed vegetation and black staining at surface. Information from these borings was evaluated to assess potential presence of MGP-related impacts on this property. National Grid completed a Focused Surface Cover IRM to address MGP-related impacts observed in the surface soil in this area.
B-9 through B-16	South and east of site	Evaluate the potential presence of MGP-related impacts on/near residential properties.
B-17 through B-22	North of King Street, near St. Lawrence Foods facility	Assess the potential extent of NAPL that may be present north of the site on the bedrock surface and to evaluate off-site soil quality.
B-23 through B-29, and B-32	West of site, adjacent to vegetative wetland	Assess the extent of NAPL previously observed on the bedrock surface at MW-7R.
B-30 and B-31	Northeast of site, in front of Boyer garage	Assess the extent of NAPL near the former tar well located adjacent to the Boyer garage.
HA-1, HA-2, and HA-3	West of site, adjacent to vegetative wetland	Assess the potential for historical discharge of MGP-related residuals to a swale in this area.
MW-2R, MW-4R, MW-5R, MW-6R, MW-7R, MW-8R, MW-9, MW-10R, MW-11, MW-12R, MW-13R, MW-14R, MW-15, MW-15RS, MW-15RD, MW-16R, MW-17R, MW-19R, and MW-20R.	Onsite and offsite	Facilitate installation of 16 bedrock monitoring wells and three overburden monitoring wells to define extent of potential MGP-related constituents in groundwater.
SBMW-18	Off-site	Facilitate installation of overburden well MW-18, well could not be installed due to insufficient saturated overburden

2.2.1.1 Drilling Methods

Because of the presence of significant debris in the overburden materials at and around the site, the majority of the overburden borings were drilled using conventional hollow-stemmed augers/split-spoon sampler techniques. Direct-push techniques were used as a few locations, but these locations typically had to be re-drilled using the hollowed-stem auger method. Overburden borings followed a consistent methodology, as follows:

- Soil samples were retrieved continuously from grade to the total boring depth.
- Recovered soil samples were observed and described by the geologist, and screened for VOCs using a photoionization detector (PID).
- Selected samples were submitted for various laboratory analyses, as described below.
- Upon completion, borings were tremie-grouted to grade or a monitoring well installed.
- Boring locations were later surveyed for position and surface elevation.

As previously mentioned, bedrock monitoring wells were installed at a number of locations. The coreholes completed to facilitate the monitoring well installations were drilled using consistent methodology, as follows:

- A 4-inch diameter steel casing was grouted several feet into the top of bedrock to isolate overburden materials and potential NAPL from the corehole.
- Bedrock was continuously cored using HQ-sized coring equipment which resulted in an approximately 3.8-inch diameter corehole.
- Recovered bedrock samples were observed and described by the geologist, and screened for VOCs using a PID.
- Upon completion, monitoring wells were installed in the coreholes as described in Section 2.3.1.

2.2.2 Test Pits

Two test pits were excavated on site during the RI. The trench-like test pits were excavated using a rubber-tired backhoe. A geologist observed the excavations and recorded notes describing the subsurface soil and physical structures encountered. During excavation of the test pits, soil samples were collected, visually described, and screened with a PID for the presence and relative concentration of detectable volatile compounds. Test pit logs are included in Appendix A. Table 2.2 summarizes the location and rationale for the test pits.

Table 2.2 RI Test Pit Summary

Test Pit ID	Location	Rationale
TP-5 and TP-6	On site	These two test pits were excavated at the NYSDEC's request. These test pits were excavated to gather data to evaluate potential remedial options for the site.

2.2.3 Soil Analyses for Soil Boring and Test Pit Samples

Soil samples were collected from borings and test pits to assess the nature and extent of MGP-related constituents in the overburden. The list of collected subsurface soil samples is provided in Table 1. The majority of the samples from the borings were analyzed for TCL VOCs, TCL SVOCs, and total cyanide. Some samples from borings were also analyzed for free cyanide to evaluate whether cyanide is in a form that is biologically available to humans or in a complexed form. Analytical methods, sample-handling procedures, and laboratory protocols were conducted in accordance with Quality Assurance Project Plan (QAPP) included in the NYSDEC-approved *Generic Site Characterization/IRM Work Plan for Site Investigations at Non-Owned Former MGP Sites*, dated November 2002.

As described in the QAPP, soil samples were submitted for laboratory analysis using USEPA SW-846 Methods as referenced in the most recent edition of the NYSDEC Analytical Services Protocol (ASP), with Category B analytical laboratory reports. Free cyanide analyses were performed using the micro-diffusion method (ASTM-4285-95). Data Usability Summary Reports (DUSRs) of the laboratory data packages were prepared and the results of the DUSRs were incorporated into the data tables provided in this RI Report.

Sample intervals were chosen in the field on a case by case basis, depending on the subsurface conditions and data needs. At most locations, a sample was collected from the most impacted interval observed, if present. The field geologist inferred impacts if NAPL, sheens, or staining was observed, or if headspace readings were significantly above background. At selected locations, samples were also submitted from the first visibly unimpacted interval in order to delineate the vertical extent. If no impacts were noted at a particular location, samples were typically collected from the approximate elevation at which impacts were observed in neighboring borings or test pits.

2.3 Groundwater Investigation

The RI groundwater investigation consisted of five primary tasks, as follows:

- Installing 16 bedrock groundwater monitoring wells and three overburden monitoring wells
- Sampling groundwater
- Testing hydraulic conductivity of soil and bedrock
- Gauging fluid levels

These tasks provided two principal types of data needed to meet the RI objectives: water quality data to quantify and delineate the nature and extent of MGP-related constituents in overburden and bedrock groundwater, and hydraulic data to better quantify groundwater flow characteristics.

2.3.1 Monitoring Well Installation

The intent of the monitoring wells installed during the RI varied by type and location. Table 2.3 summarizes the purpose of each.

Table 2.3 Monitoring Well Summary

<table>
<tr><th>ID</th><th>Screen Interval (ft. bgs)</th><th>Location</th><th>Purpose</th></tr>
<tr><td>MW-2R</td><td>40.0 – 50.0</td><td>On site</td><td>Evaluate vertical extent of MGP-related impacts in a heavily impacted area of the site.</td></tr>
<tr><td>MW-4R</td><td>8.0 – 18.0</td><td>South of site</td><td>Monitor groundwater quality upgradient from the site.</td></tr>
<tr><td>MW-5R</td><td>12.4 - 22.4</td><td rowspan="2">On site, at gas holder and tar well</td><td rowspan="2">Evaluate shallow bedrock quality in an area where NAPL was observed on the bedrock surface.</td></tr>
<tr><td>MW-6R</td><td>14.3 - 24.3</td></tr>
<tr><td>MW-7R</td><td>11.0 – 21.0</td><td rowspan="6">West, north, and east of site</td><td rowspan="6">Evaluate whether the site has adversely affected groundwater quality in nearby, off-site areas.</td></tr>
<tr><td>MW-8R</td><td>11.0 – 21.0</td></tr>
<tr><td>MW-9</td><td>3.0 – 7.0</td></tr>
<tr><td>MW-10R</td><td>11.8 – 21.8</td></tr>
<tr><td>MW-11</td><td>3.1 – 7.1</td></tr>
<tr><td>MW-12R</td><td>10.0 – 20.0</td></tr>
<tr><td>MW-13R</td><td>48.0 – 58.0</td><td rowspan="6">North, east and west of site</td><td rowspan="6">Evaluate the lateral extent of impacted groundwater downgradient from monitoring wells MW-7R, MW-8R, MW-10R, and MW-12R. Groundwater from these wells contained elevated levels of MGP-related constituents.</td></tr>
<tr><td>MW-14R</td><td>39.0 – 49.0</td></tr>
<tr><td>MW-15</td><td>4.5 – 9.5</td></tr>
<tr><td>MW-15RS</td><td>14.0 – 24.0</td></tr>
<tr><td>MW-15RD</td><td>41.0 – 51.0</td></tr>
<tr><td>MW-16R</td><td>11.0 – 21.0</td></tr>
</table>

ID	Screen Interval (ft. bgs)	Location	Purpose
MW-17R	14.9 – 24.9	North of site	Delineate the lateral extent of impacted groundwater downgradient from monitoring wells MW-7R, MW-13R, MW-14R, MW-15RS, and MW-15RD. Groundwater from these wells contained elevated levels of MGP-related constituents.
MW-19R	28.5 – 38.5		
MW-20R	18.2 – 28.2		

Notes:
"R" suffix denotes bedrock monitoring wells. No suffix denotes overburden monitoring well.
Note that monitoring well MW-18 was never installed due to insufficient saturated overburden.

Well locations are shown on Figure 2, and subsurface boring and well construction logs are included in Appendix A. Monitoring well specifications are also summarized in Table 3.

The new groundwater monitoring wells provide hydraulic and water-quality data to meet specific objectives (noted in Table 2.3 above). Upon completion of each soil boring to the desired total depth, either an overburden or bedrock monitoring well was installed at each boring location as follows:

Overburden Monitoring Wells

- Soil borings were drilled to their target depths following the practices described in Section 2.2.1.1. Target depths chosen based on observed NAPL and/or depths based on geologic contacts (i.e., soil/bedrock interface).
- 2-inch inside diameter (ID) Schedule 40 PVC material was used.
- 20-slot screens were used with varying lengths, as described in Table 3.
- Appropriately sized silica sand packs were installed in the annular space around the screened interval and generally 2 feet above.
- Above the sand pack, the well annulus was filled with several feet of bentonite chips to provide a seal. A cement/bentonite grout was placed on top of the seal to approximately 2 feet bgs using tremie pipe.
- Each well was protected at the surface with an 8-inch flush-mount curb box. Each well was also fitted with an appropriately-sized locking J-plug cap.

Bedrock Monitoring Wells

- Coreholes were drilled to their target depths following the practices described in Section 2.2.1.1. Target depths chosen based on observed NAPL, packer testing analytical and/or permeability-testing results, and/or depths based observed bedrock structures (e.g., increased frequency of fractures).

- Single wells installed in a corehole were constructed of 2-inch diameter Schedule 40 PVC.

- The micro-well (two wells inside one corehole) at MW-15RS/RD was constructed of 1-inch diameter Schedule 40 PVC.

- 20-slot screens were used with varying lengths, as described in Table 3.

- Appropriately sized silica sand packs were installed in the annular space around the screened interval and generally 2 feet above.

- Above the sand pack, the well annulus was filled with several feet of bentonite chips to provide a seal. A cement/bentonite grout was placed on top of the seal to approximately 2 feet bgs using tremie pipe.

- Wells are protected at the surface with an 8-inch or 12-inch diameter flush-mount curb boxes (larger diameter curb boxes were used for the clustered micro-well). Each well was also fitted with a 1-inch or 2-inch locking J-plug cap.

- The top of the PVC riser of each well was marked, and the elevation of this mark was determined by survey to the nearest 0.01 foot. Ground surface elevation and well location were also determined by survey.

At least 24 hours after installation, the monitoring wells were developed by surging/purging using a Waterra positive displacement pump and dedicated polyethylene tubing. The wells were surged using a surge block and developed until the water removed from the well was reasonably free of visible sediment (50 nephelometric turbidity units [NTUs]), or until the turbidity levels stabilized following the removal of a minimum of 10 well volumes.

2.3.2 Groundwater Sampling

Four types of groundwater samples were collected during the RI, as follows:

- Groundwater samples were collected from monitoring wells using traditional purging and sampling techniques
- Groundwater samples were collected while conducting packer tests at several bedrock drilling locations
- A singe groundwater sample was collected in the basement of the Durham residence (east of the site) using a well point
- Groundwater samples collected from the two production wells located inside the St. Lawrence Foods facility

A description of each of these sampling methods is described below.

2.3.2.1 Monitoring Wells

Groundwater samples were collected from monitoring wells to evaluate on- and off-site groundwater quality. Groundwater sampling from monitoring wells was conducted on several different dates depending on the phase of the RI fieldwork. Table 2.4 summarizes the sampling dates and analyzed compounds.

Table 2.4 Groundwater Sampling Summary

Sampling Date	Wells Sampled	TCL VOCs	TCL SVOCs	Total Cyanide	PIANO*
June 2006	MW-4R, MW-5R, MW-6R, MW-7R, MW-8R, MW-9, MW-10R, MW-11, MW-12R	X	X	X	
March 2007	MW-11, MW-12R				X
July 2007	MW-3	X	X	X	X
November 2007	MW-1, MW-2, MW-2R, MW-4R, MW-5R, MW-6R, MW-7R, MW-8R, MW-9, MW-10R, MW-12R, MW-13R, MW-14R, MW-15RS, MW-15RD, MW-16R	X	X	X	
March 2008	MW-2R, MW-13R, MW-14R, MW-15RS, MW-15RD, MW-16R	X	X	X	

Sampling Date	Wells Sampled	TCL VOCs	TCL SVOCs	Total Cyanide	PIANO*
November 2008	MW-15RS, MW-15RD, MW-17R, MW-19R, MW-20R	X	X	X	
February 2009	MW-17R, MW-19R, and MW-20R	X	X	X	

*The PIANO analysis consists of analyzing the samples for paraffin (P), isoparaffin (I), aromatic (A), naphthene (N), and olefin (O) compounds by a modified Method 8240.

Prior to groundwater sampling, groundwater elevations were measured at each monitoring well using a water level probe. The presence of DNAPL was also measured at wells suspected to have DNAPL using an oil-water interface meter or weighted tape. After groundwater elevations were measured and DNAPL was determined not to be present, the wells were purged and sampled. Groundwater samples were obtained using low-flow purging and sampling procedures described in the work plans. Sample analyses followed the most recent NYSDEC ASP analytical protocol and included QA/QC samples as required by the QAPP included with the work plans.

2.3.2.2 Packer Tests

Packer testing was performed while drilling several bedrock monitoring wells in order to evaluate the hydraulic conductivity of the test intervals, and in order to collect screening-level groundwater quality data. Screening-level samples were collected at the following locations/intervals (all intervals reported in feet bgs):

Table 2.5 Summary of Packer Test Intervals

Well ID	Interval Tested/Sampled
MW-2R	12 to19 19 to 29 29-39
MW-13R	19-29 29-39 39-49 49-60
MW-14R	9-19 29-39 39-49 49-60

Well ID	Interval Tested/Sampled
MW-15RD	13-19.5 19.5-29.5 29.5-39.5 39.5-49.5 49.5-59.5
MW-16R	9-19 39-49 49-55
MW-19R	11.2-19.1 19.1-28.7 28.7-38.8 38.8-48 49-58.8 58.8-68.8
MW-20R	9-18.9 18.9-29 29-38.5 38.5-48.9 48.9-58.9 58.9-63.5

Each screening-level sample was shipped to a laboratory for expedited analysis. Samples were analyzed for BTEX, PAHs, and total cyanide following the most recent NYSDEC ASP analytical protocols. The results of the analyses were evaluated in conjunction with the hydraulic conductivity data and observations made during coring to determine where to screen each bedrock well. Table 4 presents the screening-level analytical results.

2.3.2.3 Durham Residence Well Point

A shallow grab groundwater sample was collected beneath the building at 2 King Street (i.e., Durham residence) on March 28, 2007. The sample was collected using a temporary well point installed approximately 2 feet below the earthen floor. The well point was constructed using approximately 1-inch diameter steel pipe with an approximate 2-foot well screen. The well point groundwater sample was collected using a dedicated polyethylene bailer. Approximately 0.5 gallons of water was removed from the well point prior to collecting the sample. The sample was submitted to Alpha Wood Hole Group Laboratory (AWHGL) in Raynham, Massachusetts, which is a NYSDOH ELAP-certified laboratory, for a PIANO analysis. The PIANO analysis consists of analyzing the samples for paraffin (P), isoparaffin (I), aromatic (A), naphthene (N), and olefin (O) compounds by a modified Method 8240. The purpose for the sampling was to assess whether groundwater beneath the Durham residence contained dissolved-phase MGP-related constituents. The results of the sampling were presented in a June 29, 2007 letter to the NYSDEC. The results are also discussed in Section 3 of this report.

2.3.2.4 St. Lawrence Foods Production Wells

The two production wells (PW-1 and PW-2) located inside the St. Lawrence Foods facility were sampled on September 24, 2007 and November 30, 2007. Sampling at PW-1 was conducted by opening a valve at the well head, purging the well piping, and measuring the flow rate under natural artesian conditions (i.e., the well naturally purged itself without the need for a pump). The flow rate at PW-1 was measured to be approximately 1 gallon per minute. Approximately five gallons of water was removed from the well during each sampling event prior to collecting samples.

Sampling at PW-2 was performed by removing the piping attached the top of the well and measuring the depth to water and total well depth. The depth to water during the September 24, 2007 round of sampling was 2.5 feet below grade and the total well depth was approximately 86 feet below grade. No odors, sheen or staining was observed on the water level probe when retrieved from the well. A peristaltic pump with new dedicated tubing was used to purge the well and collect groundwater samples. The pumping flow rate was approximately 100 milliliters per minute (mL/min). During each sampling event, approximately 2 gallons of water were removed from the well prior to sampling.

Groundwater samples collected during each event were submitted for TCL VOCs, TCL SVOCs, and total cyanide analyses. No odors or sheens were observed during purging and sampling at either well.

2.3.3 Hydraulic Conductivity Testing

Two types of hydraulic conductivity testing were performed during the RI. Hydraulic testing was conducted on open bedrock coreholes during packer testing and at installed monitoring wells during groundwater sampling. The purpose of the testing was to provide a gross estimate of the bulk hydraulic conductivity of the test interval. This section summarizes how the different testing was performed.

2.3.3.1 Packer Testing

Packer testing of bedrock was performed at monitoring wells MW-2R, MW-13R, MW-14R, MW-15RD, MW-16R, MW-17R, and MW-20R during drilling. The purposes of this testing were to estimate the hydraulic conductivity of the interval tested and to collect screening-level groundwater samples.

Packer testing was performed continuously every approximately 10 feet using a single packer system. The general procedure for this packer testing method involves coring 10 feet of bedrock, inserting the packer assembly and isolating the test interval[1], conducting the test of that interval, and repeating the procedure until the boring is completed. Packer testing was conducted using a submersible pump to purge water from the packer interval. Specific-capacity test data were collected throughout the purging process so that the hydraulic conductivity of the bedrock interval could be estimated. These data were evaluated according to the method described by Walton (1962). The estimated hydraulic conductivity values based on the packer testing data are presented in Appendix B.

2.3.3.2 Monitoring Well Specific-Capacity Testing

Specific-capacity test data were collected at each monitoring well during at least one sampling event. These data were used to estimate the hydraulic conductivity of the material screened by each well according to the method described by Walton (1962). The estimated hydraulic conductivity values are summarized in Appendix B.

2.3.4 Water-Level and NAPL Measurements

Numerous rounds of groundwater levels have been measured since National Grid began investigating the site in 2003. Depending on the gauging event, the gauging rounds sometimes included Oswegatchie River levels measured at a staff gauge on the Lake Street bridge and levels reported by Algonquin Power for their dam located approximately 500 feet east of the site. The round measured on November 26, 2007 was used as the basis for water level information provided on several of the figures presented in Section 3. During the gauging events, the field staff measured the depth to water, depth to NAPL (if present), and total depth at each monitoring well. The water-level measurements are summarized in Table 5.

DNAPL was observed to accumulate in one monitoring well (MW-8R) during the RI. DNAPL was first observed in MW-8R on November 20, 2008 at a thickness of 0.60 feet, approximately two years after the well was installed. Given the highly viscous nature of the DNAPL observed at MW-8R, the DNAPL thickness was measured using a steel rod attached to a measuring tape. The rod was lowered into the well to the bottom of the well, and then was retrieved from the well. The DNAPL thickness was then measured on the surface of the rod. The DNAPL at MW-8R was removed on November 20, 2008 by continually lowering the steel rod into the well, retrieving the rod, then wiping it off until only trace amounts of DNAPL were observed on the rod. DNAPL has not been removed from

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[1] The packer assembly consists of an inflatable packer that is used to isolate the test section, a submersible pump mounted below the packer (i.e., in the test section), and discharge piping to route the water pumped from the test section to the surface. The assembly is designed so that the depths to water above the packer and also within the test interval can be monitored.

MW-8R since the November 20 round of measurements, but the DNAPL thickness has been measured at the well on several occasions since the November 20 round. The results of the DNAPL monitoring are discussed in Section 3.

2.4 Soil Vapor Investigation

Three rounds of soil vapor investigation were conducted during the RI. Two rounds were conducted on the properties east of the site (Durham and/or former Huot properties) and one round was conducted on the St. Lawrence Foods property north of King Street. These sampling rounds are discussed below. The soil vapor investigation reports for each of the sampling round are provided on the attached CD. The locations of the sampling points for all sampling rounds are shown on figures provided in the reports and on Figure 2.

2.4.1 Durham and Huot Properties

Two soil vapor samples (VP-1 and VP-2) were collected immediately east of the site on January 24, 2006. Sampling point VP-1 was collected adjacent to the west side of the Durham residence and sampling point VP-2 was collected adjacent to the west side of the former Huot building (now demolished). The soil vapor sampling program was conducted prior to finalization of *National Grid's Standard Operating Procedures for Soil Vapor Intrusion Evaluation at National Grid MGP Sites in New York State*, dated September 2006 (National Grid's SVI SOP). As such, the procedures used during this sampling event were developed by ARCADIS and approved by the NYSDEC as documented in the work plans.

As discussed in the work plans, soil vapor samples VP-1 and VP-2 were collected at depths of approximately 1-foot above the water table. To determine the approximate depth to groundwater a pilot soil boring was advanced near the two buildings prior to installing soil vapor sampling probes. The visual observations of the saturated soil conditions were used to establish the approximate water table depth and, hence, the sample collection depth. The groundwater was determined to be approximately 3 feet below grade in the area of VP-1 and 2 feet below grade in the area of VP-2, therefore the samples were collected at depths of approximately 2.5 to 3 feet below grade and 1.5 to 2 feet below grade, respectively.

Each sampling point was installed to the sampling depth using direct-push techniques to advance an assembly consisting of interconnected lengths of decontaminated 1.25-inch diameter stainless-steel drive rods, fitted with an expendable point holder and expendable point at the downhole end. A length of Teflon® tubing was attached to a twist-to-lock connector and the connector and tubing was inserted down the drive rods. The twist-to-lock connector was then threaded onto the expendable point holder to provide an air-tight seal. The entire assembly was then retracted approximately 6-inches to allow the expendable point to fall off, creating a void below the assembly for soil vapor collection. Hydrated bentonite was then applied to the ground surface around the probe rods to prevent potential short-circuiting of air from above grade. Tracer gas was used during purging and sampling activities by flooding the area at ground surface and above the bentonite seal with helium and using a helium detector to test the purge vapor for helium prior to sample collection.

A portable vacuum pump was used to purge the sample tubing of approximately 1-liter of air prior to collecting the vapor samples. The purge vapor was also measured for VOCs and helium using a PID and helium detector, respectively, prior to collecting the vapor sample. Once it was determined that helium gas was not detected in the purge vapor (hence, no short-circuiting from above grade), a 6-liter passivated stainless steel SUMMA® canister was used to collect the vapor sample. SUMMA® canisters were equipped with flow controllers that regulated the sampling flow rate at approximately 100 milliliters per minute. Each vapor sample was collected over an approximate 1-hour period. A duplicate sample was collected from vapor sampling point VP-1 using a stainless steel “Tee” fitting.

The collected soil vapor samples were sent to Severn Trent Laboratories located in Burlington, Vermont (now Test America Labs) for analysis of a total of 64 analytes identified in the work plans. Samples were analyzed using USEPA Compendium Method TO-15, titled “*Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)*”.

The results of the January 24, 2006 SVI sampling were presented in a June 13, 2006 letter to the NYSDEC. A copy of this report is provided on the attached CD

2.4.2 Durham Property

Additional SVI sampling was performed at the Durham residence on March 28, 2007 in accordance with a NYSDEC-approved letter work plan dated February 8, 2007. The additional SVI work included the collection of the following samples:

- Three ambient air samples, one upwind of the Durham residence, one downwind of the garage/shed located at Durham residence, and one downwind of the Boyer garage located at 4 King Street (locations AA-1 through AA-3, respectively)

- Two indoor air samples from the lowest level of the building at 2 King Street, one from the basement area and one from the crawlspace area (locations IA-1 and IA-2, respectively)

- An additional soil vapor sample near previous sampling location VP-1 (location VP-1A)

- One subsurface soil vapor sample and a blind duplicate sample at a location on the site where previous RI soil sample results indicate the presence of shallow coal tar in/near a former tar well (location VP-3)

Soil vapor, indoor air, and ambient air sample collection was performed in accordance with the procedures contained in the NYSDOH document entitled *Guidance for Evaluating Soil Vapor Intrusion in the State of New York, Final*, October 2006 (Guidance), and National Grid's SVI SOP. A tracer gas (helium) was used in connection with the soil vapor sampling to evaluate the integrity of the seals around the soil vapor probe (provide a means to evaluate whether the samples are diluted by surface air). The tracer gas was administered in accordance with National Grid's SVI SOP. Each sample was collected using a passivated 6-liter stainless-steel canister with an attached pre-set flow regulator. The laboratory provided batch-certified clean canisters and flow regulators pre-set to provide uniform sample collection over an approximate 8-hour sampling period (e.g., flow rate of approximately 12.5 mL/min).

A NYSDOH Indoor Air Quality Questionnaire was completed in connection with the basement/crawlspace sampling at the Durham residence. As noted on the questionnaire, no VOC containing products were observed in the basement at the time of sample collection. Per discussions with the homeowner, a large number of miscellaneous stored items (e.g., old tires, window air conditioning unit) were removed from the backyard and the basement and disposed of prior to the arrival of sampling personnel.

Samples were submitted to Alpha Analytical in Raynham, Massachusetts, which is a NYSDOH ELAP-certified laboratory. Samples were submitted for *Forensic United States Environmental Protection Agency (USEPA) Compendium Method TO-15* analysis. Data validation was performed by NewFields Environmental Forensics Practice, LLC (NewFields).

The results of the March 28, 2007 SVI sampling were presented in a June 29, 2007 letter to the NYSDEC. A copy of this report is provided on the attached CD.

2.4.3 St. Lawrence Foods Property

A soil vapor investigation was conducted on the St. Lawrence Foods property (north of King Street) on December 16, 2008. The purpose of

Figure 2.2: Typical Setup for Soil Vapor Sampling, SV-1 (St. Lawrence Foods) shown

the investigation was to evaluate the potential for soil vapor from the former MGP site to exist on the St. Lawrence Foods property. The investigation consisted of collecting soil vapor samples from three locations (SV-1, SV-2, and SV-3) adjacent to the southern wall of the buildings located on the other side of King Street from the site. An ambient air sample (Ambient-1) was collected upwind (west) of the soil vapor sampling points.

Soil vapor and ambient air samples were collected in accordance with the procedures contained in the NYSDOH Guidance and National Grid's SVI SOP. A tracer gas (helium) was used in connection with the soil vapor sampling to evaluate the integrity of the seals around the soil vapor probe (provide a means to evaluate whether the samples are diluted by surface air). The tracer gas was administered in accordance with National Grid's SVI SOP. Each sample was collected using a passivated 6-liter stainless-steel canister with an attached pre-set flow regulator. The laboratory provided batch-certified clean canisters and flow regulators pre-set to provide uniform sample collection over an approximate 8-hour sampling period.

Samples will be submitted for laboratory analysis to TestAmerica Laboratories of Knoxville, Tennessee. Samples were analyzed in accordance with the USEPA Compendium Method TO-15, titled *Determination of VOCs in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)*. Samples were analyzed for the standard TO-15 Target Analyte List, including n-alkanes.

Preliminary results of the December 16, 2008 SVI sampling were provided to the NYSDEC and NYSDOH via e-mail on December 30, 2008. Validated sampling results were presented in a June 10, 2009 letter to the NYSDEC. A copy of this letter is provided on the attached CD.

2.5 Fish and Wildlife Resources Impact Analysis

A FWRIA was conducted in accordance with NYSDEC guidance documents including *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC, 1994) and *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2002a). The objectives of the FWRIA were to identify the fish and wildlife resources that exist on and in the vicinity of the site, and to evaluate the potential for exposure of these resources to site-related constituents in environmental media. Results of the FWRIA are generally used to aid in remedial decision-making.

In accordance with NYSDEC (1994; 2002a) guidance, FWRIAs are conducted in a step-wise manner. Specifically, this FWRIA consisted of Part 1 (Resource Characterization). The resource characterization consisted of the following five steps: 1) identification of fish and wildlife resources; 2) identification of contaminant migration pathways and fish and wildlife exposure pathways; 3) description of resources on site and within 0.5-mile radius of the site; 4) identification of contaminants of ecological concern (i.e., comparison of environmental data to Standards, Criteria, and Guidance [SCGs]); and 5) conclusions regarding the actual or potential adverse impacts to fish and wildlife resources. If no resources or exposure pathways are present, impact to resources are considered minimal and no additional analyses are required.

Details of the FWRIA are presented in Section 4.

2.6 Human Health Exposure Evaluation

A qualitative HHEE was conducted at the site to evaluate the potential for human exposure to potentially site-related constituents. The HHEE was conducted consistent with the NYSDOH guidance as presented in *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDOH, 2002). The HHEE uses information regarding current and foreseeable land uses and available site data to evaluate the potential for exposure of human receptors. The HHEE includes a characterization of the environmental setting of the site, identification of constituents of interest and complete exposure pathways, and an evaluation of contaminant fate and transport. The results of this qualitative HHEE will be used, in part, to help evaluate proposed remedial actions for the site. Details of the HHEE are presented in Section 4.

2.7 Decontamination

All equipment was decontaminated following the procedures outlined in the Field Sampling Plan (FSP) included in the NYSDEC-approved *Generic Site Characterization/IRM Work Plan for Site Investigations at Non-Owned Former MGP Sites* (dated November 2002). In general, all nondisposable equipment (including all drilling tools, groundwater sampling equipment and soil vapor sampling equipment) was decontaminated prior to first use on site, between each investigation location and prior to demobilization. The integrity of the decontamination procedures was checked periodically with equipment rinse blanks, as required by the work plans. The results of the rinse blank samples are incorporated into the analytical results presented in the analytical summary tables.

2.8 Waste Handling

All investigation-derived waste (IDW) was contained on site in a secure area for appropriate characterization and disposal. Soil cuttings, PPE and spent disposable sampling materials were segregated by waste type and placed in New York State Department of

Transportation- (NYSDOT-) approved steel 55-gallon drums. All decontamination water and purged groundwater water was stored in polyethylene tanks. All storage vessels were labeled with the contents, generator, location and date. IDW was characterized and properly disposed off site by National Grid.

2.9 Survey

A surveyor licensed in New York State completed a detailed survey of all investigation locations, including position, surface elevation, and, in the case of monitoring wells, measuring-point elevations. Surface coordinates are referenced to the New York State Plane Central (3102) coordinate system (North American Datum [NAD] 83) and elevations are referenced to North American Vertical Datum (NAVD) 88.

2.10 Data Usability Summary Report

ARCADIS prepared DUSRs of the soil, groundwater, and soil vapor analytical results following the RI field activities. QA/QC information is contained and examined in the DUSR. Based on the results of the completed DUSRs, the data collected during the RI is determined generally usable for the purposes of the RI. The analytical summary tables include the data qualifiers identified in the DUSRs.

3. Remedial Investigation Findings

3.1 Overview

This discussion of the Remedial Investigation findings is divided into the following sections:

- Geology and physical setting (Section 3.2)
- Groundwater flow (Section 3.3)
- NAPL evaluation (Section 3.4)
- Soil-quality evaluation (Section 3.5)
- Soil vapor evaluation (Section 3.6)
- Groundwater-quality evaluation (Section 3.7)

Findings of the FWRIA and HHEE are reported in Section 4.

3.2 Geology and Physical Setting

The following discussion of the geology and hydrogeology of the site and surroundings is divided into three subsections. The first two subsections (3.2.1 and 3.2.2) provide an overview of the regional and site-specific geologic settings. The third subsection (3.2.3) identifies and describes the site stratigraphy in terms of hydrostratigraphic units.

3.2.1 Regional Geologic Setting

The site is located in the St. Lawrence Lowlands physiographic province, which is generally characterized by glacial lake clays over low bedrock ridges of limestone or sandstone. During the Pleistocene, glacial recession (approximately 12,000 years ago) led to the formation of pro-glacial Lake Iroquois (the predecessor of Lake Ontario) and the deposition of fine grained lake (lacustrine) deposits. Following the continued retreat of the ice sheet, Lake Iroquois expanded into the St. Lawrence Lowlands and eventually into the Lake Champlain Valley. When the ice had retreated to the Quebec City area, brackish and marine waters replaced the fresh water in Lake Iroquois. Marine clay and marine fossils have been found on the northeast side of Ogdensburg, near the International Bridge and the State Hospital.

The bedrock beneath the Ogdensburg area is the Lower Ordovician (formed approximately 450 million years ago) Ogdensburg Dolostone Formation of the Beekmantown Group (New York State Museum and Science Service, 1970). Dolostone is a sedimentary rock similar to limestone, but contains more magnesium and is more resistant to weathering than limestone. The Ogdensburg Dolostone consists of thick to thin-bedded, dark grey, blue to brown, coarse to finely crystalline dolostones, with some quartz sandstone and calcareous shales beds. Fossiliferous layers are also evident in the formation, abundant with gastropods and cryptozoans. The sandy dolostone of the Theresa Formation underlies the Ogdensburg Dolostone which, in turn, is underlain by the Potsdam Sandstone. The bedding in the rock has a gentle dip to the north of less than 5 degrees (Cushing, 1916) in the Ogdensburg area. Superimposed upon this general northward dip of bedding planes are several sets of nearly vertical fractures, or joints. Joints and bedding plane fractures provide the primary pathways for groundwater flow within bedrock.


Figure 3.1: Quarry Face in Ogdensburg Dolostone

The Ogdensburg Formation is present at or near the ground surface from Ogdensburg southwest toward Morristown and northeast beyond Hogansburg and into Canada. Bedrock exposures are sparse in the vicinity of Ogdensburg due to the generally low topographic relief and veneer of till and marine/lacustrine clay overburden. At Hogansburg, located northeast of Ogdensburg, the St. Regis River Valley provides excellent exposures of the Ogdensburg Dolostone. In the riverbed, the thick-bedded dolostone contains hard chert lenses that weather in relief.

Several quarries were or are located in the vicinity of the site, including a former quarry at the site itself (shown on 1850 and 1865 maps of the region) and a former quarry northwest of the site along the St. Lawrence River (see photo from Cushing, 1916, Figure 3.1). Documentation regarding the extent of quarrying at the site is not available, but historical information suggests that the quarry was present for at least 15 years (1850 to 1865). Currently, Hanson Aggregates East (Hanson) operates a quarry in the Ogdensburg Dolostone on the south side of Ogdensburg, approximately 4,000 feet southwest from the site. National Grid and ARCADIS visited the Hanson quarry in April 2006 to better understand the characteristics of the Ogdensburg Formation. The Hanson quarry operations have excised approximately 130 feet of Ogdensburg Dolostone, so the formation is at least 130 feet thick in the Ogdensburg area.

3.2.2 Site Geologic Setting

This section describes the characteristics of the two generalized stratigraphic unit encountered beneath the site: fill and the Ogdensburg Dolostone. The cross sections on Figures 3 and 4 show the vertical distribution of these units in the site area. The locations of the cross sections are shown on Figure 2.

3.2.2.1 Fill

Given the relatively shallow depth to bedrock in the site area and the extensive historical disturbance of the land surface, little, if any, native overburden remains in the site area. In fact, since the site was the former location of a quarry, any native unconsolidated materials in the area of the former quarry would have been removed as part of the quarry operations. The majority of the overburden material observed on and around the site is comprised of fill consisting of re-worked alluvial deposits (sands, gravels, silts) and anthropogenic materials (e.g., slag, coal, wood, metal, piping, ash, concrete, brick and foundations from former MGP structures). The thickness of the fill on the site is generally 3 to 9 feet; however, the fill thickness in the area of the large gas holder (furthest south) is approximately 17 feet, presumably because the bedrock was quarried to facilitate construction of the holder. Outside the limits of the former holder, the fill thickens to about 10 feet to the north of the site, in the direction of the Oswegatchie and St. Lawrence River confluence.

3.2.2.2 Ogdensburg Dolostone

The Ogdensburg Dolostone is exposed approximately 70 feet west of the site, along the eastern edge of Canal Street. This bedrock exposure is believed to be the western face of the quarry that once existed at the site. The rock face is approximate 15 feet high and contains beds of relatively flat-lying dolostone. ARCADIS measured the bedding plane orientation at this outcrop to have a N20°E strike with a 5° dip to the north-northeast.

Figure 3.2: Ogdensburg Dolostone at Former Quarry Face 70 Feet West of Site

Figure 3.3: Bedrock Core Retrieved from MW-19R (24.3 to 38.8 feet below grade)

Up to approximately 60 feet of Ogdensburg Dolostone was drilled during the RI. Recovered bedrock core samples consist of a light- to medium-gray, fine-grained, thin to massively bedded dolostone. The dolostone contains small shale partings (several millimeters thick), fossils, calcite inclusions, and some vuggy horizons. Fractures in the dolostone consist of abundant, near-horizontal bedding-plane fractures and sparse near vertical to vertical joints. The horizontal fracturing is inferred to propagate along weaker bedding planes and was observed to often coincide with shale partings. As shown on the logs contained in Appendix A, the spacing of the bedding-plane fractures generally ranged from a few inches to 2 to 3 feet. Rock Quality Designations (RQDs) for the formation were generally higher than 80; however, RQDs ranging from approximately 30 to 70 were observed in the upper portion of the rock at several of the off-site drilling locations. Since the upper 10 to 15 feet of bedrock was likely removed during the quarry operations at the site, the upper portion of the bedrock beneath the site is not very weathered - this results in a relatively competent bedrock surface beneath the site.

Very few vertical bedrock fractures (joints) were observed in the rock cores collected during the RI; however, based on outcrop observations, vertical jointing is prevalent in the Ogdensburg Formation. Observations made in the nearby Hanson Quarry, indicate that the joints in the Ogdensburg formation are near vertical and are generally spaced 5 to 10 feet apart. Joints observed in the quarry were usually confined vertically to a particular section of bedrock – that is, a joint could extend through 10 to 20 feet of rock, and then terminate above or below a more competent section of rock.

Figure 3.4: Hanson Quarry; notice near vertical joint sets.

As shown on Figure 5, the bedrock surface beneath the site is moderately irregular. Discounting the rock elevation beneath Canal Street (located on top of the quarry face), the observed bedrock surface relief is approximately 14 feet in the investigated area. One notable feature on the figure is evident in the area of the largest former gas holder. Based on the depth of the gas holder determined by B-2 and PZ-1, it appears that the floor of the holder is approximately 5 to 8 feet lower than the surrounding bedrock. This suggests that the rock may have been quarried to facilitate construction of the holder. Although the bedrock surface is irregular, the overall surface generally dips north, toward the confluence of the Oswegatchie and St. Lawrence Rivers. A few small troughs and bowls are also evident through the investigated area.

3.2.3 Hydrostratigraphic Units

Hydrostratigraphic units comprise geologic units of similar hydrogeologic properties (e.g., hydraulic conductivity); therefore, several geologic units can be grouped together as one hydrostratigraphic unit. The use of hydrostratigraphic units aids interpretation and simplifies the discussion of groundwater flow. The hydrostratigraphic units at the site are discussed individually below, and the relationship of these units to one another is depicted in cross-sections on Figures 3 and 4.

3.2.3.1 Fill Unit

The fill comprises the uppermost hydrostratigraphic unit at the site. This unit contains anthropogenic materials, imported natural materials, and re-worked native deposits that lie on top of the Ogdensburg Dolostone. The top of this unit is bounded by the water table which is encountered approximately 3 to 8 feet below grade; however, the water table is encountered less than one-foot below grade in the low-lying wetland area to the west of the site. The thickness of the fill hydrostratigraphic unit ranges from less than 1 foot to 5 feet on the site, and is thickest in the area of MW-7R, west of the site. This unit pinches out against a rising bedrock surface to the west, south, and east of the site, and is relatively thin downgradient

Table 3.1 Estimated Hydraulic Conductivity of the Fill

Location	Screened Interval (ft. bgs)	Hydraulic Conductivity (ft/day)
MW-1	4.7- 6.7	0.78
MW-2	3.0 – 6.0	1.90
MW-3	3.0 – 5.0	1.86
MW-9	3.0 – 7.0	3.49
MW-11	3.1 – 7.1	41.9
MW-15	4.5 – 9.5	3.1
Geometric Mean:		3.28

Note: Hydraulic conductivity based on specific-capacity tests performed by ARCADIS during the RI.

(north) of the site. The hydraulic conductivity of the unit, based on specific-capacity test results, ranges from 0.78 to 41.9 feet/day with a geometric mean of 3.28 feet/day.

Beneath the site, this unit derives its water from:

- direct recharge of infiltrating rain water or snow-melt.
- surface water drainage from the wet area west of the site.
- horizontal flow through the overburden from upgradient sources.
- upward or horizontal flow from the Ogdensburg Dolostone.

3.2.3.2 Ogdensburg Dolostone Unit

The Ogdensburg Dolostone is the lowest hydrostratigraphic unit encountered during the RI. This unit is fully saturated onsite and downgradient from the site, but is not saturated in areas where the bedrock surface rises up (west, south and east of the site). Groundwater in the unit is derived primarily from:

- Direct recharge of infiltrating rain water or snow-melt.
- Horizontal flow within the unit itself, from upgradient sources.
- Downward flow from the overburden.
- Upward flow from the Theresa Formation (sandy dolostone) below.

Given its low expected primary intergranular porosity, groundwater flow in the unit occurs primarily through an interconnected network of fractures in the rock (i.e., the joints and bedding planes). The hydraulic conductivity tests performed during packer testing and specific-capacity testing provided gross estimates of the bulk hydraulic conductivity of the unit. These hydraulic conductivity values ranged from 3.18×10^{-4} to 93 feet/day, with a geometric mean of 0.36 feet/day (Appendix B).

3.3 Groundwater Flow

3.3.1 Regional Groundwater Flow

The regional aquifer system is represented by relatively flat-lying sandstone and carbonate rocks (limestone and dolostone), irregularly overlain by thin deposits of glacial sediments. Groundwater flow in the type of sedimentary rocks found in the Ogdensburg area is primarily through fractures, joints and bedding planes. While the density and the degree of interconnection of fractures are highly variable, the most permeable units are generally found at the top of the rock sequence (Nastev et al., 2004), where fracturing and weathering is more prevalent. Groundwater in all water-bearing units eventually flows to the St.

Lawrence River, which is as a regional discharge boundary. The St. Lawrence dominates the surface and groundwater flow systems of much of northern New York, receiving all tributary flow and groundwater flow (from both overburden and bedrock) and then transporting it to the Atlantic Ocean hundreds of miles east of the site.

3.3.2 Site Groundwater Flow

This section describes groundwater flow in the two hydrostratigraphic unit discussed above: fill and Ogdensburg Dolostone. The water table contour map on Figure 6 was prepared to aid interpretation of groundwater flow in the fill. A summary the measured groundwater elevations is provided in Table 5. It should be noted that water levels observed in piezometer PZ-1, installed within the limits of the former holder, appear to be slightly higher than levels measured in nearby wells. Water levels in the area of this piezometer could be influenced by the former holder. The material inside of the holder may not be hydraulically connected to the surrounding soils, suggesting that the holder walls are relatively impermeable to groundwater. For this reason, the water level at PZ-1 was not used in developing the water table contour map.

3.3.2.1 Groundwater Flow in Fill Unit

Water-level and bedrock surface elevation data indicates that the water table resides in the fill across most of the investigated area, with saturated thicknesses ranging from less than 1 to approximately 6 feet. The water table does intersect the bedrock surface west, south, and east of the site where the bedrock surface rises. Given the low permeability of the underlying bedrock, groundwater in the fill is interpreted to flow horizontally toward the north/northwest and eventually discharge to the Oswegatchie/ St. Lawrence Rivers.

Table 3.2 provides vertical head data for overburden/bedrock well pairs on and near the site. These calculations were used to help evaluate the potential for vertical groundwater flow between the overburden and shallow bedrock at the site. To assess temporal changes, the differentials were calculated for the November 26, 2007 and

Table 3.2 Vertical Head Differential – Fill to Shallow Bedrock

Well ID	Screened Unit	11/26/07	2/3/09
MW-2	Fill	2.93	3.58
MW-2R	Dolostone		
MW-3	Fill	-4.46	-4.08
MW-12R	Dolostone		
MW-11	Fill	0.58	1.69
MW-6R	Dolostone		
MW-9	Fill	4.26	2.97
MW-8R	Dolostone		
MW-15	Fill	1.15	1.75
MW-15RS	Dolostone		

Notes:
Positive value = upward gradient.
Negative value = downward gradient.

February 3, 2009 measurement rounds. As shown in Table 3.2, a small amount of groundwater in the fill moves vertically down into the bedrock; however the predominant vertical flow direction appears to be from the shallow bedrock into the fill.

The average linear groundwater flow velocity in the fill is calculated to be approximately 0.50 feet/day using the geometric mean hydraulic conductivity of 3.28 feet/day, a horizontal hydraulic gradient of 0.03 and an assumed effective porosity of 20 percent.

3.3.2.2 Groundwater Flow in the Ogdensburg Dolostone

Groundwater flow in the Ogdensburg Dolostone occurs almost exclusively through a fracture network formed by intersecting vertical joints and horizontal bedding-plane fractures. Information on the nature of fractures in the bedrock shows that bedrock contains much more horizontal than vertical fractures. As such, groundwater flow in the bedrock unit is expected to be predominantly horizontal. Despite this, rather strong upward vertical hydraulic gradients exist across the unit. These upward gradients are interpreted to result from the hydraulic influence exerted by the St. Lawrence River located about 1,000 feet north of the site (i.e., a regional groundwater flow boundary). The hydraulic heads in deep bedrock wells are much higher than the heads in the shallow bedrock wells and fill, and some of the deep wells exhibit artesian conditions (i.e., hydraulic head higher than grade elevation). The strong gradient between the shallow and deep bedrock units provides further evidence that the degree of vertical hydraulic communication in the rock is poor. If the degree of hydraulic communication were good, the magnitude of vertical gradients would be expected to be less.

The hydraulic head in shallow bedrock monitoring wells MW-4R and MW-12R is noticeably lower than the other nearby shallow bedrock monitoring wells and overburden wells. One explanation for this is that the fractures screened by these two wells are not well connected to the fractures screened by the other bedrock wells. Instead, the fractures in these wells may be connected to a flow system having a lower hydraulic head, such as the Oswegatchie or St. Lawrence River.

Table 3.3 Vertical Head Differential – Shallow to Deep Bedrock

Well ID	Screened Bedrock Zone	11/26/07	2/3/09
MW-5R	Shallow	2.06	1.70
MW-2R	Deep		
MW-7R	Shallow	1.31	1.92*
MW-13R	Deep		
MW-15RS	Shallow	7.32	8.20
MW-15RD	Deep		

Notes:
Positive value = upward gradient.
Negative value = downward gradient.
*November 20, 2008 measurements used for calculation.

Although it is difficult to determine the local-scale bedrock groundwater flow direction, it is reasonable to assume that all site groundwater eventually flows northward, to the St. Lawrence River. As discussed above, the St. Lawrence is the regional discharge point for groundwater in Northern New York. The head of the St. Lawrence (approximately 242 feet AMSL) near Ogdensburg is 7 to 18 feet lower than the heads of any wells gauged during the RI.

St. Lawrence Foods Production Wells

The St. Lawrence Foods facility located north of the site has historically operated at least three production wells that are installed in the bedrock. According to the plant personnel, these wells apparently have not been operated since the early 1990s, but water from them may recently have been used for washing equipment/floors. National Grid has requested that the facility provide information on the operational history and construction of the wells, but the personnel associated with St. Lawrence Foods have indicated that no records are available. National Grid, however, was able to determine the following information based on communications with plant personnel and observations made of two of the wells:

PW-1 (identifiers of these wells developed for this investigation)

- This well is located inside the northern portion of the plant (Figure 2).
- The well casing sticks up approximately 2-feet above the concrete floor.
- The well casing appears to be steel and approximately 10 to 12–inches diameter.
- The well casing is rusted and is connected to a pump located on the floor adjacent to the well.
- The electricity to the pump has apparently been disconnected and the pump is no longer connected to the process piping.
- An approximately 2-inch diameter galvanized steel pipe is connected to the well head; the pipe extends approximately 10 to 15 feet straight up toward the ceiling, then takes a 90-degree bend; it is unknown where the pipe leads.

Figure 3.5: PW-1

- Water flows from the well under artesian pressure.
- The inside of the well cannot be accessed and the depth of the well is unknown.

PW-2

- This well is located near the southwestern corner of the facility, approximately 100 feet northwest of the site.
- The well casing sticks up approximately 4-inches above the concrete floor.
- The well casing appears to be steel and approximately 8 to 10-inches diameter.
- The well casing is rusted and is capped with a bolted-on cover.

Figure 3.6: PW-2

- No pump was observed near this well.
- No large diameter piping was observed near this well.
- A small steel pipe (about 1-inch diameter) was connected to the cover and an approximately 3-foot long garden hose was connected to the pipe; the end of the garden hose was folded over and duct taped to apparently stop water from coming out of the hose.
- The well is sometimes artesian.
- The well depth is approximately 86 feet below grade, based on a measurement made using a water-level probe.

PW-3

- Located on the west side of the plant, but is buried and can't be accessed.
- Plant personnel indicate that the well was installed in the bedrock and was abandoned because groundwater would flow constantly from the well under artesian pressure, causing ice to form at the surface in the winter.
- No information is available on the construction or abandonment of the well.

Given the limited information available regarding the operational history of the production wells, it is difficult to evaluate their influence on groundwater flow near and at the site. However, it is reasonable to assume that any pumping from these wells would have lowered the hydraulic head in the bedrock during the period of pumping. Depending on the amount of pumping, the resulting head in the deeper bedrock could have resulted in a reversal of the vertical gradients in the bedrock (downward gradients instead of upward gradients).

3.4 NAPL Evaluation

This section discusses the characteristics and distribution of NAPL observed during the RI, and a conceptual model for NAPL migration.

3.4.1 NAPL Characterization

The NAPL identified in site soil and bedrock appears to be predominantly coal-tar DNAPL. This is based on the following information:

- The NAPL observed at most investigation locations is dark brown to black in color, highly viscous and exhibits a distinct naphthalene-like odor. These characteristics are typical for coal tar.

- The majority of NAPL-containing soil/bedrock occurs below the water table, indicating that the NAPL is denser than water.

- Of the wells that screen across NAPL-containing soils or bedrock fractures (MW-1, MW-6R, MW-7R, MW-8R), NAPL has accumulated in one well (MW-8R). The NAPL in this well accumulates in the bottom of the well, indicating that the NAPL is a DNAPL.

Figure 3.7: Tar recovered from MW-8R

Approximately 0.6 feet of coal tar was measured in monitoring well MW-8R on November 20, 2008, approximately two years after the well was installed. An attempt was made to remove the accumulated coal tar using different types of bailers and pumps; but the tar proved too viscous for removal. Coal tar was eventually removed from MW-8R by lowering a metal rod into the well, removing the rod, and then wiping the tar off the rod and into a container.

3.4.2 NAPL Extent

The locations where coal tar DNAPL has been observed in soil and bedrock samples are shown on Figure 7. NAPL-containing soil or bedrock was observed at fifteen investigation locations: B-1B, B-3, B-4B, B-5, TP-2, TP-4, TP-5, MW-1G, MW-5R, MW-6R, MW-7R, MW-8R, MW-10R, PZ-1, and the sewer lateral just outside the western fence line. As mentioned in Section 1, an IRM was conducted to plug the end of the sewer lateral that terminates in King Street. As shown in Figure 7, coal tar DNAPL has been observed in the following general areas:

Overburden: At the base of the overburden (at/near the bedrock surface) particularly near the two former tar tanks and gas holders. NAPL has been observed in the overburden in two off-site locations: MW-7R (west of site) where NAPL was observed in the 1-foot interval just above the rock surface; and in the sewer lateral that runs from the site along the western fence line, terminating in a manhole in King Street. The tar in the lateral pipe was observed approximately 27 feet upstream (south) of the manhole in King Street.

Bedrock: NAPL has been observed in trace quantities on fracture surfaces the upper approximately 15 feet of bedrock at on-site and off-site wells locations. As with the NAPL observed in overburden, the NAPL observed in bedrock on-site seems to correspond to the location of the tar wells and holders. NAPL appears to have migrated a short distance off-site in the north, northwest, and west directions in the bedrock. It has been observed in bedrock core retrieved from MW-8R and MW-10R to the north, across King Street. NAPL has also been observed in bedrock core retrieved at MW-7R to the west of the site.

The balance of this section describes the conceptual model for DNAPL migration that resulted in the observed DNAPL distribution.

3.4.3 Conceptual Model for DNAPL Migration

Many factors govern DNAPL movement. At the site, DNAPL has moved downward through the fill until it reaches the bedrock surface. Migration of DNAPL in the fill is primarily influenced by the heterogeneous nature of the fill, the north-northwest horizontal hydraulic gradients, and the general northward tilt of the bedrock surface. Upon reaching the bedrock surface, DNAPL spreads and move down-slope on the uneven bedrock surface, given the very low primary porosity of the rock. Given the observed joint spacing (approximately 5 to 10 feet), it is likely that DNAPL moving laterally along the bedrock surface would encounter a joint. Whether or not the DNAPL would enter any particular joint depends on:

- the height of the DNAPL pool above the joint.
- the width of the joint aperture (opening).
- the hydraulic gradient.
- the properties of the DNAPL.

As is the case with groundwater, the movement and distribution of DNAPL in the bedrock fracture network is complex. The bedrock beneath the site is a highly crystalline, competent dolostone with low storage capacity (as compared to unconsolidated fill materials) and low primary porosity. As such, DNAPL movement is primarily along the complex network of joints and bedding plane fractures.

In the dolostone, DNAPL movement could occur in both joints and bedding-plane fractures, with movement in bedding plane fractures favored given the higher frequency of bedding plane fractures when compared to vertical joints. The overall direction of DNAPL movement in the unit is expected to be slightly downward and to the north (which is the orientation of the bedding plane dip and hydraulic gradient direction).

Based on the observed depth of DNAPL (Figures 3, 4, and 7), it appears that DNAPL has not migrated below the upper approximately 15 feet of bedrock. This is further supported by the lack of detectable MGP-related constituents in groundwater from wells screened below zones containing DNAPL (as discussed in a later section). The lack of observed DNAPL below the upper 15 feet of rock can be explained by the:

- strong upward hydraulic gradients between shallow and deep bedrock which slows down of and possibly prevents downward migration of the relatively light DNAPL.

- competent nature of the shallow bedrock at the site due to quarrying prior to construction of the MGP (i.e., weathered bedrock zone was likely excised).

- presence of shale beds and competent sandy dolostone horizons throughout the Ogdensburg Dolostone which could impeded downward DNAPL movement.

- likely decrease in fracture aperture due to lithostatic pressure.

- lack of abundant vertical fracturing.

- extremely viscous nature of the coal tar.

3.5 Soil-Quality Evaluation

3.5.1 Overview

The following two sets of criteria were used to evaluate the distribution of BTEX, PAHs, and/or cyanide (constituents of concern [COC]) in soil samples collected and observed during the RI:

- Soil samples having concentrations of COCs (BTEX, PAHs, and/or cyanide) exceeding the SCGs contained in NYSDEC's Part 375 Restricted Use Soil Cleanup Objectives (SCOs) for Protection of Public Health – Commercial Use as shown in Table 2. This criteria was chosen given the site setting (i.e., mixed industrial/commercial/ residential). Note that Table 2 also provides a comparison to Restricted Use Residential SCOs presented in the NYSDEC's Part 375 regulations.

- Soil samples observed to contain NAPL.

The following subsections describe the distribution of COCs in soil using these two criteria. Figure 8 shows the distribution of soil samples that meet the two criteria discussed above.

Section 4 – Risk Evaluation evaluates the subsurface soil data with respect to potential risks posed to human health and the environment.

3.5.2 BTEX and PAHs in Subsurface Soil

During the various investigations conducted at and near the site, 61 subsurface soil samples (deeper than 2 feet below grade) were collected from 57 boring/test pit locations and analyzed for BTEX and PAHs. Fifteen of these samples were collected from on-site locations and 40 were collected from off-site locations. Of the 61 total samples, 8 exceeded the SCOs for BTEX compound(s) and 45 samples exceeded for PAHs. All of the samples that exceeded SCOs for BTEX compound(s) also exceeded SCOs for PAH compound(s) – that is, they were collocated. This is not surprising since coal tar typically contains both BTEX and PAHs.

Figure 8 shows the distribution of subsurface soil samples containing levels of BTEX and PAHs above SCOs. Table 2 presents the analytical results for the subsurface soil samples. Review of Figure 8 in combination with Figure 7 shows that the region of subsurface soil containing concentrations of BTEX and/or PAHs in excess of the SCOs is larger than the region containing NAPL. The highest concentrations of BTEX and PAHs were detected in on-site soil samples that contain NAPL (B-1B, B-5, MW-5R, MW-6R, MW-7R, TP-4, and

TP-5). Based on a review of Figures 7 and 8, and as discussed in the NAPL Evaluation (Section 3.4), NAPL in the overburden is present near potential source areas (e.g., former tar wells and holders). In addition, it appears that most of the soils containing NAPL and associated high BTEX and PAH concentrations are found near the bedrock surface and below the water table.

Further review of Figure 8 shows that 22 of the 45 samples exceeding SCOs are located off-site. All of these off-site samples exceeded the SCOs for PAHs, while only the sample collected at B-29 (4 to 5 feet bgs) contained concentrations of BTEX compound(s) exceeding SCOs. The highest off-site PAH concentrations (> 500 ppm total PAHs) were detected at the following locations:

- B-9 (2-2.3 feet): 2,900 ppm – southeast of site
- B-16 (4-6 feet): 3,700 ppm – southeast of site
- B-29 (1.5-2.7 feet): 3,700 ppm – west of site
- B-29 (4-5 feet): 1,200 ppm – west of site
- B-32 (4.5-5 feet) – 1,300 ppm – west of site
- MW-7R(6-6.5 feet) – 4,800 ppm – west of site

3.5.3 Cyanide in Subsurface Soil

A total of 51 subsurface soil samples were analyzed for total cyanide during the various investigations conducted at and near the site. Of these, 13 samples exceeded the SCO for total cyanide. Six of the 13 samples were collected in off-site areas to the east of the site. Figure 8 shows the distribution of subsurface soil samples containing levels of total cyanide above the SCO. Samples containing the highest concentrations (above 100 ppm) were detected in the following on-site and off-site samples:

Onsite: TP-4: 8,210 ppm; B-5: 348 ppm; MW-6R: 168 ppm; and TP-5: 101 ppm – all samples contained tar and were located near former MGP structures.

Off-site: B-11: 102 ppm; B-8d: 491 ppm; and B-8c: 251 ppm – all located east of the site; National Grid completed a surface cover IRM in the area of the B-8 borings.

A total of 17 soil samples were submitted for free cyanide and total cyanide analyses during the Phase III RI investigation to evaluate whether cyanide at the site is in a form that is biologically available to humans or in a complexed form. Total cyanide was detected in 12 of the 17 samples at concentrations ranging from 0.073 to 89.7 ppm and only 5 of the 12 samples contained concentrations of free cyanide. The free cyanide concentrations ranged from 0.019 to 0.0480 ppm. These results indicate that the majority of total cyanide detected in the 12 samples is in a complexed form and not biologically available to humans.

3.5.4 Surface Soil

Surface soils are often considered separately from other soils because surface soils pose a greater potential exposure risk to human health and the environment because they are more-readily accessible. For this reason, surface soil quality is discussed in Section 4 – *Risk Evaluation*.

3.6 Soil Vapor Evaluation

As discussed in Section 2, the following three soil vapor investigations were completed during the RI:

- January 24, 2006 – Durham and Former Huot properties east of the site
- March 28, 2007 – Durham property east of site
- December 16, 2008 – St. Lawrence Foods property north of the site

The results and conclusions of these investigations are presented in the reports provided in Appendix C. Table 6 summarizes the analytical results. As discussed in those reports, the NYSDEC and NYSDOH have concluded that the MGP is not affecting indoor air quality at the Durham residence or soil vapor quality on St. Lawrence Foods properties. The NYSDEC and NYSDOH have further concluded that no additional soil vapor investigations by National Grid are warranted at this time on these properties.

3.7 Groundwater-Quality Evaluation

This section discusses groundwater quality at and near the site, based on analytical results of groundwater samples collected at monitoring wells. This evaluation also focuses on the nature and extent of BTEX, PAHs, and cyanide, the COCs at this site. Analytical results are discussed in two groups, based on the screened intervals of the monitoring wells sampled:

1. Wells screened in the overburden (fill).

2. Wells screened in the bedrock.

The analytical results presented in Table 7 are compared with NYSDEC TOGS 1.1.1 (June 1998) Class GA groundwater Standards and Guidance Values (referred to hereafter as "Class GA Standards or Guidance Values").

Section 4 – Risk Evaluation evaluates the groundwater data with respect to potential risks posed to human health and the environment.

3.7.1 Overburden Groundwater

This section describes the nature and extent of dissolved phase COCs in the overburden groundwater based on the analytical results of samples collected from the six overburden groundwater monitoring wells (MW-1, MW-2, MW-3, MW-9, MW-11, and MW-15) and observations made during subsurface investigations (i.e., soil borings and test pits). The locations of the wells are shown on Figure 2 and 9.

As shown in Table 7 and on Figure 9, groundwater sampled from all but one (MW-15) of the six overburden wells contained concentrations of BTEX, PAHs, and/or cyanide at levels above Class GA Groundwater Standards or Guidance Values. As shown on Figure 7 and as discussed in Section 3.4, NAPL was encountered below the water table in numerous soil borings and test pits completed on site and west of the site (near MW-7R). As expected, and as also observed in soil samples, overburden groundwater appears to contain the highest levels of BTEX, PAHs, and cyanide on site and near the areas observed to be most heavily impacted by NAPL (e.g., near MW-1, MW-2, and MW-3). MGP-related constituents were also detected in off-site overburden groundwater to the north (MW-9) and east (MW-11) of the site. Given the presence of NAPL observed in the overburden at MW-7R, overburden groundwater is expected to also exceed groundwater Standards or Guidance Values in the area to the west of the site.

Further downgradient (north) from the site, beneath and around the St. Lawrence Foods facility, the saturated overburden thins to about 3 feet or less and appears to pinch out against a rising bedrock surface in several areas. As such, saturated overburden does not exist in some areas north of the site. Saturated overburden was not observed on the west side of the St. Lawrence Foods facility (near MW-14R); however, a thin layer of saturated overburden does exist on the east side of the facility at MW-15. BTEX and cyanide were not detected in either of the two samples collected from MW-15, and only a trace amount of PAHs were detected. Based on this information, the extent of groundwater containing levels of MGP-related BTEX, PAHs, and/or cyanide above Standards and Guidance Values has been sufficiently delineated in the downgradient direction within the overburden.

3.7.2 Bedrock Groundwater

This section describes the nature and extent of dissolved phase COCs in the bedrock groundwater at and near the site based on the analytical results of samples collected from the 16 bedrock groundwater monitoring wells and from packer test intervals at selected bedrock well locations. The locations of the wells are shown on Figures 2 and 9.

As shown in Table 7 and on Figures 9 and 10, groundwater sampled from 10 of the 16 bedrock monitoring wells contained concentrations of COCs at levels above Standards or Guidance Values. The following observations can be made based on review of Figures 9 and 10:

- Bedrock groundwater appears to be unaffected to the south of the site (MW-4R).

- On-site shallow bedrock groundwater contains elevated dissolved-phase COCs at levels well above Standards or Guidance Values. As shown by the groundwater sampling results at MW-2R, deep on-site bedrock (deeper than at least 40 feet bgs) groundwater appears not to be affected by the MGP.

- Off-site shallow bedrock appears to contain dissolved-phase COCs as follows:

  – Immediately east of the site at MW-12R, but not further to the east at Lake Street (MW-16R).

  – North - along King Street (MW-8R and MW-10R) and approximately 200 feet north of King Street (MW-14R and MW-15R).

  – West – along Canal Street at MW-13R and MW-17R.

- Deep bedrock also contains dissolved-phase COCs at MW-14R and MW-15RD, approximately 200 feet north of King Street. Packer test results show elevated concentrations of BTEX (130 parts per billion [ppb] total BTEX at MW-14R and 1,500 ppb total BTEX at MW-15R) in the shallow bedrock at these locations. The concentrations decrease with depth to 2 ppb at MW-15RD (50 to 60 feet bgs) and 59 ppb at MW-14R (50 to 60 feet bgs).

- Trace amounts of the chlorinated compound 1,2-dichloroethane were detected in production well PW-2 located in the St. Lawrence Foods facility. MGP-related compounds were not detected in PW-1 or PW-2.

- The downgradient extent of dissolved-phase COCs in bedrock is defined by non-detect concentrations in monitoring well groundwater samples at MW-19R and MW-20R and trace concentrations in packer test samples at these locations.

Given the information presented in Section 3.3 (Groundwater Flow) and the observations discussed above, the following conclusions can be made regarding the distribution of dissolved-phase COCs in bedrock:

- The northern, eastern, and southern extent of dissolved-phase COCs has been delineated. Groundwater flow in the fractured bedrock is more complex, thus the extent of groundwater that contains COCs above Standards or Guidance Values is not as thoroughly quantified.

- Although elevated levels of COCs were detected in the packer test samples at MW-13R and the groundwater sample collected from MW-17R, given the assumed northerly groundwater flow direction, MW-13R and MW-17R are likely near the western edge of the dissolved-phase plume.

- The vertical extent of dissolved-phase COCs is defined by the lack of detectable COCs in groundwater at MW-2R (i.e., MW-2R is screened below a heavily impacted area of the site).

- Given the strong upward gradients in bedrock, combined with the lack of observed NAPL in the deeper bedrock (i.e., not deeper than 15 feet below the bedrock surface), the elevated concentrations of dissolved-phase COCs in off-site deeper bedrock at MW-14R and MW-15RD is not expected. The elevated dissolved-phase COCs in deeper bedrock at MW-14R and MW-15RD can be explained by the historical operations of the St. Lawrence Foods production wells. Pumping from these wells could have lowered the hydraulic head in the deeper bedrock, causing a reversal in the otherwise upward hydraulic gradients.

- Groundwater from the production wells inside the St. Lawrence Foods facility is not affected by the MGP.

4. Risk Evaluation

4.1 Fish and Wildlife Resource Impact Analysis

This section presents the FWRIA that was conducted as part of the RI. This FWRIA was conducted in accordance with NYSDEC guidance documents entitled *Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites* (NYSDEC, 1994) and *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2002a). The objectives of the FWRIA were to identify the fish and wildlife resources that exist on and in the vicinity of the site, and to evaluate the potential for exposure of these resources to site-related constituents in environmental media. Results of the FWRIA are generally used to aid in remedial decision-making.

In accordance with NYSDEC (1994; 2002a) guidance, FWRIAs are conducted in a step-wise manner. Specifically, this FWRIA includes Part 1 (Resource Characterization), which consists of the following five steps:

1) identification of fish and wildlife resources

2) identification of contaminant migration pathways and fish and wildlife exposure pathways

3) description of resources on site and within 0.5-mile radius of the site

4) identification of contaminants of ecological concern (i.e., comparison of environmental data to screening benchmarks)

5) conclusions regarding the actual or potential adverse impacts to fish and wildlife resources

If no resources or exposure pathways are present, impact to resources are considered minimal and no additional analyses are required.

4.1.1 Ecological Characterization

Topographic maps and aerial photographs were reviewed to identify the general physical and ecological features of the site and surrounding areas. A site visit was conducted in July 2009 to aid in the development of a covertype map for the site and surrounding areas within a 0.5-mile radius of the site. The covertype map (Figure 11) classifies these areas into ecological communities based on physical characteristics and vegetation (e.g., industrial/

commercial/residential, mowed field). As part of the ecological characterization, natural resources (i.e., rivers, lakes, wetlands) located within a 2-mile radius of the site were also identified. This information assisted in evaluating wildlife habitat value and human resource value for the site and surrounding areas.

4.1.1.1 Vegetative Covertypes

Land use in the site vicinity is primarily a mixture of residential, commercial, and industrial properties. Ecological communities within a 0.5-mile radius of the site were generally classified according to the NYSDEC (2002b) document entitled *Ecological Communities of New York State, Second Edition*. The four major covertypes identified within a 0.5-mile radius of the site are: 1) residential/commercial/industrial; 2) mowed field; 3) drainage ditch/swale; and 4) upland scrub/shrub. A map depicting the spatial distribution of these covertypes is presented on Figure 11. Individual covertypes are described below. Table 8 presents a list of dominant vegetation observed within each covertype.

Residential/Commercial/Industrial Covertype – The surrounding areas to the north, south, east and west are characterized as a mixture of residential, commercial, and industrial properties. This covertype generally consists of industrial buildings, commercial businesses, single-family dwellings, apartment buildings, paved and gravel lots, public roads, and limited amounts of cultivated vegetation (i.e., lawns, ornamental trees and shrubs).

Mowed Field Covertype – The site itself is characterized as a mowed field covertype. The majority of this covertype consists of maintained herbaceous vegetation. Dominant vegetation includes grasses (*Poa* spp.), clover (*Trefolium* spp.), dandelion (*Taraxacum officinale*), bedstraw (*Galium* spp.), chicory (*Cichorium intybus*), and daisy fleabane (*Erigeron annus*). The entire perimeter of the site is fenced.

Drainage Ditch/Swale Covertype – The drainage ditch/swale covertype is located along the west of the site, outside the fenced area. This covertype was characterized by a mixture of woody and herbaceous vegetation. Dominant vegetation included box elder (*Acer negundo*), sugar maple (*Acer saccharum*), Japanese knotweed (*Polygonum cuspidatum*), jewelweed (*Impatiens* spp.) and river grape (*Vitis riparia*). To the southwest of the site (hydrologically upgradient), a small seep was observed flowing into the swale area. In the area surrounding the seep itself, purple loosestrife (*Lythrum salicaria*), horsetail (*Equisetum* spp.), and cattails (*Typha* spp.), were present in addition to the species listed above. Based on the surrounding elevation, surface water run-off likely feeds this swale in addition to the groundwater seep. Just to the north of the seep, there was an area of shallow standing water, which flowed into a drainage channel flowing north towards King St. At the time of the site visit this drainage channel had areas of intermittent, very shallow water in between areas of moist earth.

Upland Scrub/Shrub Covertype – The upland scrub-shrub covertype is comprised of a thin margin on either side of the fence which surrounds all sides of the site, and is also present in another larger area northeast of the site. This covertype is characterized by a mixture of woody and herbaceous vegetation. Dominant woody species include box elder, sugar maple, eastern white cedar (*Thuja occidentalis*), tartarian honeysuckle (*Lonicera tatarica*), and crab apple (*Malus* spp.). Dominant herbaceous vegetation includes Virginia creeper (*Parthenocissus quinquefolia*), Queen Anne's lace (*Daucus carota*), goldenrod (*Solidago* spp.), clover, grasses, black raspberry (*Rubus* spp.), Japanese knotweed (Polygonum cuspidatum), bedstraw, chicory, daisy fleabane and burdock (*Arctium* spp.).

4.1.1.2 Surface Waters

The main surface water bodies in the site vicinity are the Oswegatchie River (to the east) and the St. Lawrence River (to the north). The NYSDEC best usage classifications for these stretches of the Oswegatchie River and St. Lawrence River are Class B and Class C, respectively. According to New York Regulations Title 6 §701.7, the best usage of Class B waters are primary and secondary contact recreation and fishing. These waters are suitable for fish propagation and survival. According to New York Regulations Title 6 §701.8, the best usage of Class C waters is fishing. Class B and C waters shall be suitable for fish, shellfish and wildlife propagation and survival.

4.1.1.3 Wetlands

According to the NYSDEC Freshwater Wetlands Map for St. Lawrence County, there are five state wetlands within a 2-mile radius of the site (Figure 12). State wetland OE-17 is located approximately 1 mile south of the site; state wetland OE-12 is located approximately 1.2 miles southeast of the site; state wetland OE-7 is located approximately 2 miles northeast of the site; state wetland OE-18 is located approximately 1.5 miles south of the site; and OW-4 is located approximately 1.8 miles southwest of the site. None of these wetlands appear to be hydraulically connected to the site.

The National Wetlands Inventory (NWI) Map for St. Lawrence County identifies numerous wetlands within a 2-mile radius of the site (Figure 13), including palustrine open water, emergent, scrub-shrub and forested wetlands. The NWI wetland maps are generated by the U.S. Fish and Wildlife Service (USFWS) using stereoscopic analysis of high-altitude aerial photographs, and the majority of the mapped wetlands are not field verified. None of the mapped wetlands are located in close proximity to the site, and as such, are expected to be hydraulically isolated from the site.

4.1.2 Fish and Wildlife Resources

Due to the surrounding residential/commercial/residential land use within the city of Ogdensburg, wildlife usage of the site is expected to be limited to common species typical of urban environments (e.g., small mammals, passerine birds). Table 9 presents a list of biota that were observed in the vicinity of the site, as well as typical fish and wildlife species that may utilize the site and/or surrounding areas based on the ecological communities present.

Residential/Commercial/Industrial Covertype – Surrounding land use consists of a mixture of residential, commercial, and industrial properties. Wildlife species that may use these covertypes generally consist of species that are adapted to urban environments. Typical wildlife species that may use these urban areas include, but are not limited to, avian insectivores, avian granivores, mammalian herbivores, and mammalian omnivores. The residential/commercial/industrial covertype may offer some limited habitat to these species for foraging, nesting, and/or shelter, but regionally this covertype is likely of low value to wildlife.

Mowed Field Covertype – The mowed field covertype is present within the fenced boundary of the site, and is characterized by maintained (mowed) herbaceous vegetation (e.g., grasses and common weeds). Maintained (i.e., shorter) grasses generally preclude wildlife use due to the lack of foraging, nesting, and cover habitat. As such, the mowed field covertype most likely does not provide valuable habitat to local fauna.

Drainage Ditch/Swale Covertype – The drainage ditch/swale covertype is located west of the site. The swale is connected to an upgradient groundwater seep. Although, based on surrounding elevations, the swale also most likely receives surface water runoff during precipitation events. This covertype contains mature trees, shrubs, and herbaceous vegetation, and portions of the swale had standing water at the time of the site visit in July 2009. No fish were observed in the swale as this area is most likely only inundated periodically, and observed standing water in this area was very shallow and apparently isolated from other aquatic habitats. Although this covertype most likely does not support local fish populations, it is most likely used by local terrestrial and semi-aquatic fauna for foraging and/or shelter.

Upland Scrub/Shrub Covertype – The upland scrub/shrub covertype is characterized by a mixture of mature hardwood trees, shrubs, and herbaceous vegetation. This covertype exists along the fenceline that surrounds the site as well as in another rather large area northeast of the site. The upland scrub/shrub covertype most likely provides some limited habitat for birds and small mammals. Larger mammals such as whitetail deer and red fox most likely use this covertype only to a limited extent due to the surrounding residential/ commercial/industrial land use.

4.1.2.1 Threatened/Endangered Species and Significant Habitat

Information requests for threatened/endangered species information were submitted to the USFWS and the NYSDEC Natural Heritage Program (NHP) to inquire about the potential presence of sensitive species or habitats in the vicinity of the site. According to the NYSDEC NHP (NYSDEC, 2009a), the bald eagle (*Haliaeetus leucocephalus*; status - threatened) is the only recently recorded state-listed threatened/endangered species near the project site (i.e., City of Ogdensburg). There are also several historical (pre-1979) records in the project vicinity (e.g., City of Ogdensburg) including two state-listed fish species (lake sturgeon [*Acipenser fulvescens*; status – threatened] and mooneye [*Hiodon tergisus*; status – threatened] and two plant species (sheathed pondweed [*Stuckenia filiformis* ssp. *occidentalis*; status – endangered] and Clinton’s bulrush [*Trichophorum clintonii*; status – endangered]). These historical records date back from 1836 to 1973. No evidence of these species was observed during the July 2009 site visit and the site lacks appropriate habitat for these species. The NYSDEC NHP response is included on the attached CD.

Information on federally-listed threatened/endangered species for St. Lawrence County was obtained on-line through the USFWS website (specifically the USFWS Northeast Field Office). Based on available information for St. Lawrence County, the bald eagle and Indiana bat (*Myotis sodalis*) are known to occur within this county. In such cases, the USFWS recommends an evaluation of site habitat and consultation with the NYSDEC NHP to evaluate the potential presence of threatened/endangered species in the vicinity of the site. The habitat requirements of the bald eagle are undisturbed areas near large lakes and reservoirs, marshes and swamps, or stretches along rivers where they can find open water with suitable fisheries (NYSDEC, 2009b). The habitat requirements of the Indiana bat are wintering locations such as caves and mines in which they hibernate, and summer locations consisting of surrounding areas for breeding and feeding on flying insects. There are eight hibernacula currently known in New York State in Albany, Essex, Warren, Jefferson, Onondaga and Ulster Counties (NYSDEC, 2009c). Based on the observations made during the site visit in July 2009, suitable habitat for the bald eagle and Indiana bat do not exist onsite or in the immediate vicinity of the site.

4.1.2.2 Observations of Stress

During the site visit in July 2009, no evidence of stressed vegetation or negative impacts on wildlife was observed for the site or surrounding areas.

4.1.3 Fish and Wildlife Resources Values

As part of the FWRIA, a qualitative assessment was conducted to determine the general ability of the area to support fish and wildlife. The following subsections provide a qualitative evaluation of the value of the identified covertypes to wildlife and the value of these wildlife resources to humans.

4.1.3.1 Value of Habitat to Associated Fauna

The qualitative assessment of habitat value is based on field observations, research and professional judgment.

The site is described as a mowed field covertype and is surrounded by a chain-link fence. Wildlife use of the site itself is most likely limited due to its relatively small size and the surrounding residential/commercial/industrial land use. The maintained vegetation (e.g., short grasses) within the site also likely limits its use for foraging, nesting, and/or cover by local fauna. Therefore, the mowed field covertype is likely a low value habitat.

The majority of the surrounding land use in the vicinity of the site consists of residential, commercial, and industrial properties. These urban landscapes generally do not provide high wildlife value due to the limited vegetation and presence of impervious surfaces (e.g., roads, parking lots). However, common species such as small mammals and passerine birds that are typically adapted to urban environments may use this mixed covertype, although wildlife value is expected to be low.

Portions of the drainage ditch/swale adjacent to the site contain standing water and are heavily vegetated. The swale is connected to an upgradient groundwater seep, although based on surrounding elevations, the swale also most likely receives surface water runoff during precipitation events. No fish were observed within the swale during the July 2009 visit. Since this swale is intermittently inundated throughout the year, it may serve as a resource to local terrestrial and semi-aquatic fauna. Therefore, the swale is concluded to have moderate wildlife value.

The upland scrub/shrub covertype is characterized by a mixture of mature hardwood trees, shrubs, and herbaceous vegetation, which most likely offer wildlife habitat to passerine birds and small mammals. This covertype exists along the fenceline that surrounds the site as well as in another rather large area northeast of the site. The surrounding industrial/ commercial/residential land use most likely limits wildlife use of this covertype, but because it does provide some limited habitat, the upland scrub/shrub covertype is concluded to provide moderate habitat to local fauna. However, larger mammals such as whitetail deer and red fox most likely use this covertype only to a limited extent due to the surrounding residential/commercial/industrial land use.

4.1.3.2 Value of Resources to Humans

The site itself is relatively small and does not offer any natural resources that would encourage recreational use of the site. The upland scrub/shrub covertype is located within the City of Ogdensburg and is most likely only used (if at all) for activities such as walking and/or wildlife observation. As mentioned previously, the drainage ditch/swale area does not contain fish and is most likely not used as a recreational resource by local residents. Due to the location of the site within city limits, hunting is prohibited in the vicinity of the site. Uses of the areas outside the site are likely to remain consistent in the future, and are not likely to be affected by activities or conditions at the site.

4.1.4 Fish and Wildlife Regulatory Criteria

The following New York State laws, rules, regulations and criteria are relevant to this FWRIA:

- Title 6 of the New York Codes, Rules and Regulations (6 NYCRR)
  - Part 608, Use and Protection of Waters
  - Part 664, Freshwater Wetlands Maps and Classifications
  - Part 701, Classifications — Surface Waters and Groundwaters
- Environmental Conservation Law — Chapter 43-B of the Consolidated Laws
  - Article 11, Fish and Wildlife:
    - §11-0503, Polluting Streams Prohibited
    - §11-0535, Endangered and Threatened Species

- Article 15, Water Resources: Title 5, Protection of Water
- Article 24, Freshwater Wetlands

- Criteria and Guidelines
  - Draft 6 NYCRR Part 375 Soil Cleanup Objectives for the protection of ecological resources (NYSDEC, 2006b)

4.1.5 Impact Assessment

The FWRIA includes an impact assessment to determine the impacts, if any, on fish and wildlife resources. This impact assessment includes a pathway analysis, which determines if there are complete or potentially complete ecological exposure pathways to site-related constituents, and a criteria-specific analysis, which compares site data to applicable SCGs.

4.1.5.1 Pathway Analysis

The objective of the pathway analysis is to evaluate potential pathways by which fish and wildlife receptors may be exposed to site-related constituents in environmental media. A complete exposure pathway consists of the following five elements: 1) contaminant source; 2) contaminant release and transport mechanisms; 3) potential point of exposure; 4) viable route of exposure; and 5) receptor population. If any one of these elements is missing, then the pathway is not considered to be complete and exposure cannot occur, irrespective of chemical concentrations in environmental media. Potential media of interest associated with the site include surface soils, subsurface soils, and groundwater. Potential exposure pathways associated with these media are discussed below.

Surface Soils

Surface soils were collected from within the site boundary and also from areas surrounding the site (e.g., residential and commercial properties). Soil samples were collected from vegetated soils within maintained (mowed) areas. The site itself and the surrounding residential/commercial/industrial areas provide low wildlife value, but these areas may be used by common wildlife species such as passerine birds and small mammals. Therefore, direct contact with surface soils (both within the site and in nearby, off-site areas) is a potentially complete ecological exposure pathway.

Subsurface Soils

The NYSDEC (2002a) DER-10 guidance states that surface soil is defined as a depth of 0 to 6 inches below ground for a FWRIA. Although most wildlife are generally not exposed to subsurface soils (soils deeper than 0.5 feet bgs) during normal activities such as foraging and nesting, subsurface soils may be accessible to burrowing mammals and invertebrates. Therefore, direct contact with subsurface soils is a potentially complete ecological exposure pathway.

Groundwater

Groundwater investigations indicate that depth to groundwater ranges from approximately 2 to 7 feet bgs. Exposure of wildlife to groundwater would only occur if an animal were to burrow down to the water table, which is unlikely given the depth to groundwater. A groundwater seep was observed along the drainage ditch/swale area to the west of the site, but this seep is hydraulically upgradient of the site. Further, the swale area had only minimal amounts of standing water in it during the July 2009 site visit. Based on this information, exposure to groundwater is not considered to be a significant ecological exposure pathway.

4.1.5.2 Criteria-Specific Analysis

The objective of the criteria-specific analysis is to evaluate potential ecological impacts for those media that represent potentially complete ecological exposure pathways. Specifically, the criteria-specific analysis compares available site data to SCGs to identify constituents of potential concern. The locations of samples discussed in this section are found on Figure 2.

Surface Soils

Sixteen surface soil samples (0 to 1.1 feet) were collected and analyzed for SVOCs, VOCs and inorganics (samples SS-01 through SS-12 and B-8D, B-9, B-10, and B-17). These surface soil samples were collected on-site (i.e., within the site boundary) and in the immediate site vicinity (e.g., surrounding properties or lots). Specifically, samples SS-4 through SS-12 and B-8D, B-9, B-10, B-17 were collected off-site (i.e., outside of the fenced site boundary) and samples SS-1 through SS-3 were collected on-site (i.e., within the fenced site boundary). Surface soil data were compared to 6 NYCRR Part 375 SCOs for the Protection of Ecological Resources (NYSDEC, 2006). Table 10 presents the comparison of surface soil data to ecological SCOs.

No VOCs were detected in the on-site surface soil samples. Several VOCs were detected in off-site samples B-9, B-10, SS-04, SS-05, and SS-06, but none had exceedances of their respective ecological SCOs. Several PAHs were detected in the on-site surface soil samples. Specifically, benzo(a)pyrene was found to slightly exceed the associated ecological SCO in the three on-site surface soil samples and in off-site surface soil sample location B-9. Additionally, acenaphthene and fluorene were found to exceed their associated ecological SCO at off-site surface soil location B-9. Surface soil location B-9 was collected along the eastern site boundary, to the east of the former gas house foundation. Several pesticides were detected in the on-site surface soil sample locations. Specifically, 4,4'-DDD, 4,4'-DDT, dieldrin, and endrin were found to exceed their associated ecological SCOs in the three on-site surface soil samples. Lead, mercury and zinc exceeded their associated ecological SCOs at surface soil samples collected both on- and off-site. Specifically, on-site surface soil sample location (SS-03) had SCO exceedances for lead, mercury, and zinc. Three of the off-site surface soil sample locations (SS-05, SS-06, and SS-07) had SCO exceedances for lead, mercury, and zinc; these samples are located to the north of the site. Exceedances of PAHs, pesticide, and metals SCOs were generally less than one order of magnitude above the benchmarks.

Subsurface Soils

Subsurface soil samples were collected and analyzed for VOCs, SVOCs/PAHs, PCBs, pesticides, and inorganics. Samples collected on-site include all test pits (TP-1 through TP-6); soil borings B-1B, B-2, B-3, B-4, B-4B, and B-5; monitoring wells MW-1, MW-2, MW-5R, and MW-6R; and piezometer PZ-1. All other subsurface samples were collected off-site, i.e., outside the site boundary. Although subsurface soils are not anticipated to be a source of significant exposure, subsurface soils data were compared to NYSDEC (2006) Part 375 SCOs for the Protection of Ecological Resources (Table 11). However, it should be noted that these samples were collected at depths that would not likely be accessible to ecological receptors (i.e., these soils are deeper than typical burrowing depths and in most instances, below the groundwater table, which ranges from 2 to 7 feet across the site).

Four VOCs were detected in on-site subsurface soils. Benzene, toluene, and xylene were the only VOCs detected in on-site subsurface soils at concentrations greater than their respective ecological SCOs. Benzene exceeded its SCO in five samples (B-5, MW-5R, MW-6R, and TP-5). Toluene exceeded its SCO at four sampling locations (B-5, MW-5R, MW-6R, and TP-5). Xylene exceeded its SCO in 12 samples (B-1B, B-5, B-16, B-19A, B-29, B-32, MW-5R, MW-6R, MW-7R, TP-2, TP-4, and TP-5). Samples with exceedances of VOC SCOs were primarily located on-site near the footprints of the former gas holders and tar wells.

Several PAHs were detected in on-site subsurface soils. Of these, only three PAHs (acenaphthene, benzo(a)pyrene, and fluorene) exceeded their respective ecological SCOs.

Specifically, acenaphthene exceeded its SCO in 13 samples, most of which were located near the footprints of the former gas holders and tar wells. Benzo(a)pyrene exceeded its SCO in numerous on-site samples, but most off-site samples, i.e., outside the fenced area, had concentrations below the SCO. Sixteen samples exceeded the SCO for fluorene. Aside from benzo(a)pyrene, the majority of the PAH exceedances were observed in the same on-site samples. Phenol was the only other SVOC with exceedances of its SCO; these exceedances were observed in on-site samples MW-6R and TP-5.

Only one sample (B-1B, 4-6’) was analyzed for metals. Arsenic, chromium, and mercury slightly exceeded their respective SCOs in sample B-1B; all other inorganics were below SCOs.

4.1.6 Summary and Conclusions

The FWRIA for the site was conducted in accordance with NYSDEC (1994; 2002a) guidance. The site is a former MGP site characterized by a fenced plot of land that is maintained by regular mowing. There are no structures currently on the site. A narrow swath of upland scrub/shrub habitat exists along the fence line of the site, and in larger areas to the west and northeast of the site. In addition, a drainage ditch/swale is located immediately west of the site. Surrounding land use is predominately a mixture of residential, commercial, and industrial properties. The site itself and surrounding areas (e.g., residential/commercial/industrial and upland scrub/shrub covertypes) provide limited wildlife habitat for foraging, nesting, and/or cover and as such, are concluded to have low to moderate wildlife values. Exposures to on- and off-site surface and subsurface soils are identified as potentially complete ecological exposure pathways.

Several PAHs, pesticides, and metals were detected in surface soils above their respective screening benchmarks (i.e., ecological SCOs). Benzo(a)pyrene exceeded its SCO in off-site sample B-9 and the three on-site samples (SS-01, -02, and -03). Acenaphthene and fluorene also exceeded their SCOs in sample B-9. Off-site sample B-9 contains the highest concentration of PAHs in surface soil; this sample was collected along the eastern site boundary, to the east of the former gas house foundation. All remaining PAH concentrations in surface soils were below SCOs. Pesticides (i.e., DDD, DDT, dieldrin, and endrin) slightly exceeded their SCOs in the three on-site surface soil samples. Lead, mercury, and zinc exceeded their SCOs in on-site sample SS-03 and off-site samples SS-05, 0-6, and -07. Exceedances of SCOs in surface soil were generally less than an order of magnitude above the conservative benchmarks. These soil sampling locations are located within areas that are most likely not utilized heavily by local wildlife either due to their lack of natural resources and/or their proximity to anthropogenic activity (e.g., roads). Therefore, constituents in surface soils are not expected to pose a significant ecological risk to local fauna.

A few VOCs (benzene, toluene, and xylene), SVOCs (acenaphthene, benzo(a)pyrene, fluorene, and phenol), and metals (arsenic, chromium, and mercury) exceeded their respective SCOs in subsurface soil samples. However, the majority of the subsurface soils data were from samples collected deeper than would be considered accessible to ecological receptors. Further, the majority of the subsurface soil samples are deeper than the groundwater table, which ranges from 2 to 7 feet across the site, i.e., fauna would not be expected to burrow past the water table. Based on this information, subsurface soils most likely do not present a significant ecological exposure pathway.

4.2 Human Health Exposure Evaluation

This section presents a qualitative HHEA that describes the potential for human exposure to site-related constituents. This HHEA is conducted consistent with the NYSDOH guidance as presented in *Draft DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC/NYSDOH, 2002) and uses information regarding current and foreseeable land uses and available site data to evaluate the potential for exposure of human receptors. The HHEA characterizes the environmental setting of the site, identifies constituents of interest and complete exposure pathways, and evaluates contaminant fate and transport. The results of this qualitative HHEA will be used, in part, to help evaluate remedial actions for the site.

The site is currently undeveloped and consists of a maintained (mowed) field surrounded by a chain link fence. There is a drainage ditch/swale and upland scrub/ shrub area west of the site. The remaining areas outside the fence consist of residential, commercial, and industrial properties. The site is currently owned by St. Lawrence Gas Company.

4.2.1 Constituents of Potential Concern

Analytical data for the site are available for surface soil, subsurface soil, and groundwater. Data used in this evaluation were collected in 2003, 2006, 2007, and 2008. The majority of the samples were analyzed for TCL VOCs, TCL SVOCs, and total cyanide. A subset of samples was also analyzed for TAL inorganics as part of the SC. The following subsections briefly discuss the analytical data for each medium and the comparison of these data to cleanup objectives and/or screening criteria to identify constituents of potential concern (COPCs). Section X presents a more detailed discussion of the distribution of site-related constituents in the various media. As discussed in Section 3, the primary COCs identified for the site are BTEX, PAHs, and total cyanide; however, for completeness, this section evaluates all detected compounds, including site-related COCs and other constituents that may not be site-related (e.g., metals). Combined, these compounds are referred to in this section as COPCs. Although total cyanide is considered a COPC, analysis of a subset of subsurface soil samples indicates that little to no free cyanide is present in subsurface soils at the site. As such, the total cyanide detected in soils samples is in a complexed form and not biologically available to humans.

Surface Soil

Sixteen surface soil samples (0 to 1.1 feet) were collected and analyzed for VOCs, SVOCs, TAL inorganics and cyanide. Surface soil samples consist of SS-01 through SS-12, B-8D, B-9, B-10, and B-17. Surface soil samples are shown on Figure 2. Samples SS- 01, -02, and -03 were collected on-site (i.e., within the fenced area) and the remaining samples were collected off-site. Surface soil data were compared to 6 NYCRR Part 375 SCOs for restricted residential and commercial land use (NYSDEC, 2006). The restricted residential SCOs were developed to represent exposure of adult and child residents to soils via ingestion, dermal contact, and inhalation. The commercial SCOs were developed to represent an adult worker and a child visitor to soils via ingestion, inhalation and dermal contact. Because some of these soil samples were collected on or in the vicinity of residential and commercial/industrial properties, these SCOs were deemed to be the most appropriate based on current and potential future land use. Table 12 compares surface soil data to SCOs.

VOC concentrations were below SCOs in all surface soil samples. PAHs were detected at concentrations exceeding their associated restricted residential and commercial SCOs in the three on-site samples (SS-1, SS-2, and SS-3) as well as several off-site samples (B-9, B-10, B-17, SS-06, and SS-07). Samples B-9 and B-10 were collected immediately outside the fenced area along the southern portion of the site. Sample B-17 was collected north of King Street, near the St. Lawrence Foods facility. Sample SS-06 was collected from a commercial property and sample SS-07 was collected at the corner of King Street and Canal Street on the corner of a residential lot. The highest concentrations of PAHs were observed in sample B-9; concentrations in this sample exceeded both the restricted residential and commercial SCOs. PAH concentrations in the remainder of the samples with SCO exceedances were not significantly higher than SCOs. Dibenzofuran exceeded its restricted residential SCO in one sample (B-9), but was below its commercial SCO. Likewise, dieldrin exceeded its restricted residential SCO in on-site sample SS-03, but was below its commercial SCO in this sample. Samples B-9 and SS-03 were collected from non-residential areas. Concentrations of TAL inorganics were below SCOs, except for cyanide which exceeded restricted residential and commercial SCOs in sample B-8D; this sample is located on the former Huot property (now owned by National Grid) where

National Grid completed a Focused Surface Cover IRM. Cyanide concentrations in all remaining samples were below the SCOs. Based on SCO exceedances, the primary surface soil COPCs are PAHs and cyanide.

Subsurface Soil

Sixty-one subsurface soil samples were collected between the depths of 2 to 7 feet bgs and analyzed for TCL VOCs, TCL SVOCs, PCBs, pesticides, TAL metals and cyanide. For the purposes of the HHEA, subsurface soil generally consists of soils from 2 to 7 feet bgs because it is assumed that future development would not be expected to occur below the water table. The majority of the subsurface soil samples were collected on-site or in the immediate vicinity of the site (e.g., just outside the fenced area and along the north side of King Street near the St. Lawrence Foods facility). Subsurface soil data were compared to 6 NYCRR Part 375 SCOs for restricted residential and commercial land use (NYSDEC, 2006). Table 2 presents the comparison of subsurface soils data to SCOs. Figure 8 presents the soil sampling locations in comparison to these SCOs.

BTEX, several SVOCs (primarily PAHs), and two inorganics (arsenic and cyanide) were detected in subsurface soil samples at concentrations that exceeded their respective SCOs. BTEX exceeded the restricted residential SCOs in samples B-1B, B-5, MW-5R, MW-6R, and TP-5. Benzene also exceeded its commercial SCO in samples B-5, MW-5R, MW-6R,and TP-5. Toluene and xylene only exceeded their commercial SCOs in one sample (MW-6R). These samples are located in the vicinity of the former tar well in the northeast corner of the site. PAHs exceeded their associated residential and commercial SCOs in multiple on-site samples. The highest PAH concentrations were observed in samples B-1B, MW-5R, MW-6R, TP-4, and TP-5, which are located in the vicinity of the former gas holders and tar wells. A few other SVOCs (2-methylphenol, 4-methylphenol, and dibenzofuran) also exceeded their SCOs in the samples located near these former structures. Arsenic slightly exceeded its restricted residential and commercial SCOs in sample B-1B. Cyanide exceeded its residential and/or commercial SCOs in 13 of the 61 samples. The highest cyanide concentrations were observed in sample TP-4 at a depth of 5 feet bgs. The primary COPCs for subsurface soil are BTEX, PAHs, arsenic, and cyanide.

Groundwater

Fifty-two groundwater samples were collected from the 22 site monitoring wells and two St. Lawrence Foods production wells. Samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals and total cyanide. Analytical results were compared to criteria presented in the NYSDEC Division of Water TOGS 1.1.1 document entitled *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (NYSDEC, 1998).

Several VOCs, SVOCs (PAHs) and metals exceeded the NYSDEC standards and/or guidance values. The groundwater samples with exceedances of NYSDEC BTEX and PAH standards were primarily collected on-site, in the vicinity of the former gas holders/tar wells and downgradient of these structures (i.e., along King Street). Antimony, cyanide, magnesium, and manganese were the only inorganics to exceed their associated NYSDEC standards. Specifically, antimony, magnesium, and manganese exceeded their associated standards in only one of the 52 groundwater samples (MW-2). Cyanide exceeded its standard in only 5 of the 24 sampled wells, with the highest concentration reported in sample MW-3. Table 7 compares groundwater data to NYSDEC standards and/or guidance values. Figure 9 shows the groundwater sampling locations. The primary COPCs for groundwater are BTEX, PAHs, and several inorganics (antimony, cyanide, and manganese). Although magnesium exceeded its standard in one sample (MW-2), this constituent is generally considered to be an essential nutrient and as such, is not considered to be a primary COPC.

4.2.2 Contaminant Fate and Transport

This section discusses the environmental fate and transport for identified COPCs based on toxicological profiles from the Agency for Toxic Substances and Disease Registry (ATSDR).

Benzene

The environmental fate and transport of benzene is primarily attributed to its high volatility (ATSDR, 1997). In soil, benzene partitions to the atmosphere through volatilization, to surface water through runoff and to groundwater through leaching. Bioaccumulation of benzene in the aquatic food chain generally does not occur, and there is no scientific evidence of biomagnification. Aerobic biodegradation is the primary mechanism for degradation of BTEX in soils, surface water and groundwater.

Toluene

The majority of toluene released to the environment partitions to air, although rates of volatilization from soils depends on temperature, humidity and soil type (ATSDR, 2000a). Transport of toluene from soil to groundwater depends on the degree of adsorption to soil, which is mediated by the presence of organic matter. Toluene will be readily leached from soils with low organic content. The metabolism of toluene limits its biomagnification in the food chain. Degradation of toluene in surface water, soil and sediment occurs primarily by microbial action.

Ethylbenzene

Ethylbenzene has a high vapor pressure and will partition into the atmosphere from surface soils and surface water; subsurface soil infiltration will also occur (ATSDR, 1999). This chemical has a relatively high mobility in soils because sorption is not significant enough to prevent migration. Ethylbenzene will leach into groundwater, particularly in soils with low organic carbon content. Significant bioaccumulation does not occur in aquatic food chains. In surface water, ethylbenzene can be transformed via photo oxidation and biodegradation. In soils, aerobic soil microbes are responsible for biodegradation.

Xylenes

Xylenes are highly volatile and readily partition into the atmosphere from surface water (ATSDR, 1995a). In soils, xylenes tend to adsorb to organic matter, and will leach into groundwater from subsurface soils with low organic carbon content. Volatilization and photo oxidation are the primary removal mechanisms in surface soil and surface water. Biodegradation is the primary removal mechanism in subsurface soils.

PAHs

In surface waters, PAHs can volatilize, photolyze, oxidize, biodegrade, bind to particulate matter or sediments, or accumulate in aquatic organisms, although biomagnification of PAHs generally does not occur because many aquatic organisms are able to metabolize (and eliminate) these compounds readily (ATSDR, 1995b). Biodegradation is the primary mechanism for removal in sediments. In soils, PAHs can volatilize, undergo abiotic degradation, biodegrade, or bioaccumulate in plants. Some PAHs may leach into groundwater from subsurface soils. The transport and partitioning of PAHs in the environment are dependent on several chemical factors, such as water solubility, vapor pressure, Henry's law constant, octanol-water partition coefficient and organic carbon partition coefficient. Due to their low solubility and high affinity for organic carbon, PAHs in aquatic systems are generally sorbed to bottom sediments or particulate matter suspended in the water column.

Antimony

In general, antimony is released to the environment in the form of particulate matter. In air, it is dispersed by wind and removed by gravitational settling, and dry and wet deposition. Antimony is a natural constituent of soil and is transported via water in runoff to streams and waterways, or dispersed by wind, either due to natural weathering or disturbed soil. Antimony released into waterways is typically adsorbed to particulate matter it is transported to and settles out in areas of active sedimentation. Little is known of the adsorptive behavior, and chemical and biochemical reactions of antimony, its compounds, and ions (ASTDR, 1992). Antimony does not appear to bioconcentrate or bioaccumulate appreciably in fish and aquatic organisms. Uptake of antimony by plants is minor and appears to be correlated with the amount of available antimony; antimony occurring in plants results from surface deposition (ASTDR, 1992). Biomagnification in mammals in the food chain is not significant (ASTDR, 1992).

Arsenic

Arsenic in soil may be transported by wind and runoff, and may leach into subsurface soil (ATSDR, 2000b). In sediments, arsenic may be sorbed to iron and manganese oxides and may be released under reducing conditions. Transport and partitioning of arsenic in water depends upon its chemical form (i.e., oxidation state) and other materials present (ATSDR, 2000b). Arsenic may be present in soluble form in the water column, or adsorbed onto sediments or soils. Groundwater arsenic concentrations are generally controlled by adsorption rather than mineral precipitation (ATSDR, 2000b). Bioconcentration of arsenic does occur in aquatic organisms, primarily in algae and lower invertebrates, although biomagnification in aquatic food chains does not appear to be significant (ATSDR, 2000b).

Cyanide

Most cyanide in the atmosphere exists almost entirely as hydrogen cyanide gas, although small amounts of metal cyanides may be present as particulate matter in the air. Removal of hydrogen cyanide from air by precipitation or by dry deposition is negligible (ATSDR, 2006). Metal cyanide particles are expected to be removed from the air by both wet and dry deposition. Cyanide occurs most commonly as hydrogen cyanide in water, although it can also occur as the cyanide ion or other forms such as alkali metal cyanides. Oxidation, hydrolysis, and photolysis are the three predominant chemical processes that may cause loss of simple cyanides in aquatic media (ATSDR, 2006). Biodegradation is an important transformation process for cyanide in natural surface waters, and is dependent on such factors as cyanide concentrations, pH, temperature, availability of nutrients, and acclimation of microbes. Analogous to the fate of cyanides in water, it is predicted that the fate of cyanides in soil would be dependent on cyanide concentrations, pH, temperature, metal content, concentration of microbes, availability of nutrients, and acclimation of microbes (ATSDR, 2006). In soil, cyanide present at low concentrations biodegrades under aerobic conditions. Cyanides are adsorbed toy various natural media, including clays, biological solids, and sediments. Hydrogen cyanide and the alkali metal cyanides are not likely to be strongly sorbed onto sediments and suspended solids. Studies do not indicate that simple metal cyanides and hydrogen cyanide bioconcentrate in aquatic organisms. Accumulation of cyanide in food webs is not expected, considering the rapid detoxification of cyanide by most species and the lethal effects of large doses of cyanide (ATSDR, 2006).

Manganese

The transport and partitioning of manganese in water is controlled by the solubility of the specific chemical form present, which is in turn determined by pH, redox potential and characteristics of the available anions. Manganese is generally transported in rivers as suspended sediments (ATSDR, 2000c). Manganese in water may be significantly bioconcentrated at lower trophic levels. The ability of soluble manganese compounds to adsorb to soils and sediments depends largely on the cation exchange capacity and organic composition of the soil (ATSDR, 2000c).

4.2.3 Potential Exposure Points, Receptors and Route of Exposure

An initial step in evaluating potential human exposure is the identification of potentially complete exposure pathways. For an exposure pathway to be complete, the following five elements must exist: 1) contaminant source; 2) contaminant release and transport mechanisms; 3) point of exposure; 4) route of exposure; and 5) receptor population. If all five elements exist, then that exposure pathway is considered to be complete (NYSDEC/NYSDOH, 2002).

This section evaluates the potential exposure points, receptors and routes of exposure. The magnitude of exposure to COPCs is dependent upon the type of activity, specific areas of the site used in daily activities and frequency and length of time spent at each area.

As previously described, BTEX, PAHs, antimony, arsenic, manganese, and cyanide were identified as the primary COPCs in environmental media (i.e., surface soil, subsurface soil, and/or groundwater). The most likely current and future receptors at the site are on-site personnel, including maintenance workers and construction workers. Because the site is fenced, it limits the accessibility of the site to the general public. However, trespassers may breach the fence and as such, represent another potential exposure group for the site. The surrounding areas of the site, i.e., outside the fence, include a drainage ditch/swale and an upland scrub/shrub area west of the site. Although these areas don’t offer much recreational potential (e.g., lack of attractive resources), trespassers and off-site residents may have intermittent access to these areas.

Potentially complete human exposure pathways for the site are evaluated below.

Potential Direct Contact with Soils – Based on current land use, the site itself is only expected to be used by on-site workers (e.g., maintenance workers) that are responsible for mowing the grass, although trespassers represent another potential receptor group. Potential exposure of trespassers and maintenance workers to COPCs in on-site surface soils could occur via incidental ingestion and dermal contact. Trespassers and off-site residents could be exposed to surface soils outside the fenced area via incidental ingestion and dermal contact, although use of these areas is expected to be limited to their general lack of attractive resources. Exposure of trespassers, maintenance workers, and off-site residents to subsurface soils (both on-site and in the vicinity of the site) is unlikely because these receptors are not expected to be involved in intrusive activities. However, construction workers may be exposed to surface and subsurface soils during possible future construction/excavation activities.

Potential Inhalation of Vapors and/or Particulates – Surface soil COPCs are primarily nonvolatile constituents (i.e., PAHs, inorganics). Workers, trespassers, and off-site residents may be exposed to COPCs in surface soils via inhalation of particulates from areas of exposed soil. However, there are only a few small areas of exposed soils within the site itself. The majority of the soils within the site and in the immediate vicinity of the site are vegetated, which likely mitigates the generation of fugitive dust. Further, because there are limited ongoing activities at the site (i.e., only occasional mowing), there is likely little potential for dust generation. Because VOCs (i.e., BTEX) were detected in subsurface soils at the site, there is potential for exposure of construction workers to COPCs via inhalation of vapors during construction/excavation activities, but potential exposures could be mitigated by use of PPE. Based on the results of soil vapor investigations (Section 3.6) and as concluded by the NYSDEC and NYSDOH, the site does not appear to be affecting soil vapor or indoor air quality on neighboring properties. As such, potential exposure to VOCs in soil vapor or indoor air is not likely.

Direct Contact with Groundwater – The groundwater table beneath the site ranges from approximately 2 to 7 feet bgs, and generally flows in a northern direction. Groundwater is not used as a potable source in the City of Ogdensburg, and depth to groundwater precludes potential direct exposures of trespassers, maintenance workers, and off-site residents to this medium. Construction workers may be exposed to site groundwater during intrusive activities, but potential exposures could be mitigated by use of PPE.

4.2.4 Summary

Analytical data indicate that BTEX, PAHs, arsenic, and cyanide are present in subsurface soils at concentrations exceeding NYSDEC SCOs. Because maintenance workers, trespassers, and off-site residents are not expected to be involved in intrusive activities, subsurface soil does not present a complete exposure pathway for these receptors. The potential for exposure to COPCs in subsurface soils is most likely limited to construction workers that may be engaged in future intrusive activities, although potential exposures could be mitigated through the use of PPE.

Surface soils represent the greatest potential for exposure (via all pathways). Surface soils represent a complete exposure pathway for maintenance workers, construction workers, off-site residents, and trespassers. However, potential exposures to COPCs in surface soil are most likely limited because surface soil samples were collected from vegetated areas (i.e., direct exposure to soils is likely mitigated by the presence of groundcover). Further, surface samples with the greatest exceedances of SCOs (samples SS-01, SS-02, SS-03, B-9, B-10, and B-17) are located in areas that are most likely not used on a frequent basis (e.g., within or along the site fence line).

Groundwater in the City of Ogdensburg is not used as a potable source, and therefore exposure via ingestion of groundwater is unlikely. Likewise, there is relatively little potential for direct contact to groundwater for maintenance workers, off-site residents, and trespassers because these receptors would not be involved in intrusive activities. Construction workers may be exposed to shallow groundwater during future intrusive activities, although these exposures could be mitigated with the use of PPE.

Although low levels of numerous VOCs were detected in soil vapor and indoor air samples collected during the three rounds of soil vapor investigation, the VOCs do not appear to be related to the former MGP. Furthermore, the NYSDEC and NYSDOH have concluded that additional soil vapor investigations are not warranted at the site at this time.

5. Summary and Conclusions

The site has been the subject of two investigations, starting in 2003 with the Site Characterization and culminating with the RI described in this RI Report. During these investigations, 22 monitoring wells were installed, 41 soil borings were drilled, 7 test pits were excavated, three soil vapor investigations were conducted, and more than 200 samples of environmental media were analyzed. The primary objectives of this work were to characterize the nature and extent of site-related impacts to the environment and to evaluate the risk posed to human health and the environment by those impacts. These objectives have been satisfied by the work performed during these investigations, and the information gathered will enable an evaluation of remedial alternatives for the site.

This section summarizes the findings of the RI and presents relevant conclusions.

5.1.1 Site Setting

The site is located at 8 King Street, Ogdensburg, St. Lawrence County, New York on approximately ¾ acres of land (Figure 1). The site property is currently owned by St. Lawrence Gas Company of Massena, NY. The site consists of a grassy, vacant, fenced lot with residential properties bordering the site to the east and southeast. National Grid owns a vacant lot east of the site on 207/209 Lake St. A narrow strip of heavily vegetated wetland borders the site to the west and a steep vacant grassy slope is located south of the site. Residential properties are also located further to the west and south. King Street is present north of the site, and runs generally southwest/northeast. Across King Street to the north, is a kosher dairy operated by St. Lawrence Foods Corporation. Lake Street is located beyond the residential properties that border the east/northeastern side of the site. Rensselaer Avenue is present south of the site, between the steep grassy slope and residential properties. Canal Street is located west of the site, between the narrow wetland and residential properties.

There is no localized groundwater usage in the immediate area of the site; all businesses and residences near the site are supplied by city water. The city receives potable water from the St. Lawrence River, which is located approximately 1,000 feet north of the site. The Oswegatchie River is located approximately 500 feet east of the site and joins the St. Lawrence approximately 1,000 feet north of the site.

The former MGP operated from 1854 until at least 1930 using the coal carbonization process (Radian Corporation, 1985). A small quarry existed at the site for approximately 15 years prior to construction of the MGP. The key features associated with the former MGP through time include a gas house, regulator, retorts, purifiers, condensers, two gas holders, two tar wells, regulator, governor house, coke room, and coal shed. A railroad track ran generally northwest/southeast immediately west of the site from prior to 1865 until sometime after 1962. The site was the location of a bulk petroleum storage facility after the MGP was dismantled.

5.2 Hydrogeology

The regional and site hydrogeology was evaluated by reviewing available literature sources, observing bedrock exposures in Ogdensburg, and analyzing hydraulic and geologic data collected during the RI and Site Characterization at and near the site. This section summarizes the major findings of the evaluation and presents relevant conclusions regarding groundwater movement at and around the site.

Hydrostratigraphic Units

The site elevation ranges from approximately 264 feet to 260 feet above mean sea level, with the ground surface generally sloping downward to the north and west. Investigations have identified three two hydrostratigraphic units in the investigated area. These units include:

- ***Fill*** – The fill unit comprises the uppermost hydrostratigraphic unit. This unit consists of re-worked alluvial deposits (sands, gravels, silts) and anthropogenic materials (e.g., slag, coal, wood, metal, piping, ash, concrete, brick and foundations from former MGP structures). The top of this unit is bounded by the water table which lies approximately 3 to 8 feet below grade, depending on location. The thickness of the fill on the site is generally 3 to 9 feet, but thickens to about 10 feet north of the site. This unit does not exist where the water table lies below the top of the Ogdensburg Dolostone. The hydraulic conductivity of the unit was found to range from 0.78 to 41.9 feet/day, with a geometric mean of 3.28 feet/day.

- ***Ogdensburg Dolostone*** – The Ogdensburg Dolostone is the lowest hydrostratigraphic unit encountered during the RI. This unit is fully saturated in most of the investigation area. The exception is in areas where its surface is encountered only a few feet below grade or rises relative to the water table. Given its low primary porosity, groundwater flow in the unit occurs primarily through a network of intersecting horizontal bedding plane fractures and vertical fractures (i.e., joints). Given the increased frequency of horizontal bedding plane fractures relative to joints, groundwater flow is preferentially through the bedding plane fractures. Field tests provided hydraulic conductivity values for this unit that range from 3.18×10^{-4} to 93 feet/day, with a geometric mean of 0.36 feet/day.

Groundwater Flow

The St. Lawrence River is a major regional groundwater discharge location for northern New York. Given the site's proximity to the river, groundwater on and near the site in either hydrostratigraphic unit will eventually flow to the river. In the Ogdensburg Dolostone, the routes of flow can be considerably more tortuous, depending on the degree of fracturing and fracture characteristics. The following conclusions regarding groundwater flow can be made based on the results of the RI and SC field activities conducted on and adjacent to the site:

- Groundwater in the fill is interpreted to move predominantly horizontally toward the north and discharge to the St. Lawrence and/or Oswegatchie Rivers.

- Strong upward gradients observed between the shallow bedrock and fill indicates that groundwater in the shallow bedrock discharges upward through vertical joint fractures and into the fill before discharging to either river. Downward gradients observed in a few localized areas suggest that a fraction of groundwater in the fill unit also moves downward into the shallow bedrock.

- Because the spacing of horizontal bedding plane fractures is greater than the spacing of joints, groundwater movement in the Ogdensburg Dolostone is predominantly horizontal in the direction of the St. Lawrence River.

- The ability of groundwater to move vertically within the Ogdensburg Dolostone is impeded by the lack of abundant vertical jointing in the unit and the presence of flat lying, unfractured beds of more competent rock and thin shale beds. This is demonstrated by the much higher hydraulic head in the deeper portion of the Ogdensburg as compared to the shallower regions of this unit.

5.3 NAPL Evaluation

5.3.1 NAPL Extents

The geologic and analytical data generated by numerous subsurface investigations at the site are sufficient to characterize the extent of MGP coal tar DNAPL for this RI. The locations where DNAPL has been observed in soil and bedrock samples collected on site and off site are shown on Figure 7. The following conclusions can be made based on the results of the geologic and analytical data collected and DNAPL distribution shown on Figure 7:

- At the locations where NAPL-containing soil is observed at and near the site, the NAPL typically occurs below the water table, indicating that the NAPL is a predominantly DNAPL.

- DNAPL is locally present at and just above the bedrock surface. The majority of the DNAPL was observed beneath, within, and near several onsite MGP-related structures (two tar wells and two gas holders). Observed DNAPL thickness range from a few inches to several feet.

- DNAPL has been observed in the sewer lateral that extends from the site, along the western fence-line, to a manhole in King Street. National Grid plugged this sewer lateral during an IRM.

- DNAPL has been observed in trace quantities on fracture surfaces the upper approximately 15 feet of bedrock at on-site and off-site wells locations. As with the NAPL observed in overburden, the NAPL observed in bedrock on-site seems to correspond to the location of the tar wells and holders.

- DNAPL appears to have migrated a short distance off-site in the north, northwest, and west directions in the bedrock.

- The distribution of DNAPL in bedrock is a function of the DNAPL physical characteristics, hydraulic influences, and the complex bedrock fracture network of jointing and horizontal bedding plane fractures in the bedrock.

5.4 Soil-Quality Evaluation

The soil evaluation delineated the region of soils that contain concentrations of constituents of concern (COCs) exceeding SCOs. The COCs include BTEX, PAHs, and total cyanide. The distribution of soils exceeding SCOs is shown on Figure 8. The following general conclusions were made as a result of the soil evaluation:

- Of the 61 collected subsurface soil samples, 8 exceeded the SCOs for BTEX compound(s) and 45 samples exceeded for PAHs. All of the samples that exceeded SCOs for BTEX compound(s) also exceeded SCOs for PAH compound(s). Twenty-two of the 45 samples exceeding SCOs are located off-site.

- The region of subsurface soil containing concentrations of BTEX and/or PAHs in excess of the SCOs is larger than the region containing NAPL. The primary reason for this relates to the heterogeneous nature of the fill material and the locations of potential NAPL sources/transport mechanisms for NAPL.

- As expected, the highest concentrations of BTEX and PAHs were detected in on-site soil samples that contain NAPL (i.e., near the former tar wells and holders).

- Most of the soils containing NAPL and associated high BTEX and PAH concentrations are found near the bedrock surface and below the water table.

- Thirteen of 51 subsurface samples exceeded the SCO for total cyanide. Six of the 13 samples were collected in off-site areas to the east of the site.

- Free cyanide analysis of 17 subsurface soil samples suggests that the majority of total cyanide detected in the subsurface soil samples is in a complexed form and not biologically available to humans.

5.5 Soil Vapor Evaluation

Three soil vapor investigations were completed during the RI:

- January 24, 2006 – Durham and Former Huot properties east of the site
- March 28, 2007 – Durham property east of site
- December 16, 2008 – St. Lawrence Foods property north of the site

The purpose of these investigations was to evaluate whether VOCs from the MGP were present in soil vapor and/or indoor air at the site and near/within buildings on the referenced properties. The investigations found that several VOCs were present in soil vapor and indoor air samples at low concentrations; however, the VOCs appeared not to be related to the MGP. The NYSDOH and NYSDEC concluded that that no further soil vapor investigations are warranted at the site at this time.

5.6 Groundwater-Quality Evaluation

Groundwater quality was evaluated by comparing analytical results from data collected during the RI to NYSDEC TOGS 1.1.1 Class GA Standards and Guidance Values. BTEX, PAHs, and total cyanide were identified as the COCs for groundwater because these compounds were detected in groundwater above the Class GA Standards or Guidance Values. The approximate extent of groundwater exceeding Standards or Guidance Values is shown on Figure 9. Results of the groundwater evaluation have concluded that:

- The distribution of COCs in overburden and bedrock groundwater appears to be directly related to the presence of NAPL.

- The extent of COCs in overburden groundwater at levels exceeding Standards or Guidance Values has been delineated. The COC plume in overburden appears to be constrained primarily to the site property and short distance to the east, north, and west of the site.

- Bedrock groundwater appears to be unaffected to the south of the site (MW-4R).

- The extent of COCs in bedrock groundwater at levels exceeding Standards and Guidance Values has been delineated. The COC plume in bedrock is largely controlled by the characteristics of bedrock fractures (i.e., orientation, frequency) and hydraulic gradients.

- On-site shallow bedrock groundwater contains dissolved-phase COCs at levels well above Standards or Guidance Values. Deep on-site bedrock (deeper than at least 40 feet bgs) groundwater appears not to be affected by the MGP.

- Off-site shallow bedrock appears to contain dissolved-phase COCs a short distance (less than 100 feet) east and west of the site, but the dissolved-phase plume in the shallow and deeper bedrock appears to extend a greater distance (at least 200 feet) north of the site.

- The production wells in the St. Lawrence Foods facility appear unaffected by the MGP.

5.7 Risk Evaluation

A risk evaluation was performed by reviewing data collected during the RI. The risk evaluation included performing a FWRIA (through Part 1: Resource Characterization) and a qualitative HHEE. The summary and conclusions of the FWRIA and HHEE are discussed below.

5.7.1 Fish and Wildlife Resource Impact Analysis

The properties around the site are characterized as a mixture of residential, commercial, and industrial. The FWRIA found that the site itself and surrounding areas provide limited wildlife habitat and as such, have low to moderate wildlife values. No threatened or endangered plant or animal species were found to inhabit the site or the immediate surrounding areas.

The pathway analysis identified potentially complete exposure pathways for on- and off-site surface and subsurface soils. For an exposure pathway to be complete, you must have the following five elements:

1) contaminant source

2) contaminant release and transport mechanisms

3) potential point of exposure

4) viable route of exposure

5) receptor population

Several PAHs, pesticides, and metals were detected in surface soils above their respective screening benchmarks (i.e., ecological SCOs). All three on-site surface soil samples and one off-site sample (B-9, near southeast corner of site) contained concentrations of benzo(a)pyrene above its SCO. Acenaphthene and fluorene also exceeded their SCOs in sample B-9. The sample at B-9 contains the highest concentration of PAHs in surface soil. All remaining PAH concentrations in surface soils were below SCOs. Three pesticides slightly exceeded their SCOs in the three on-site surface soil samples. Lead, mercury, and zinc exceeded their SCOs in one on-site sample and three off-site samples located several hundred feet north-northwest from the site. Surface soil samples having exceedances were collected within areas that are most likely not utilized heavily by local wildlife. Therefore, constituents in surface soils are not expected to pose a significant ecological risk to local fauna.

A few VOCs (benzene, toluene, and xylene), SVOCs (acenaphthene, benzo(a)pyrene, fluorene, and phenol), and metals (arsenic, chromium, and mercury) exceeded their respective SCOs in subsurface soil samples. However, the majority of the subsurface soils data were from samples collected deeper than would be considered accessible to ecological receptors. Further, the majority of the subsurface soil samples are deeper than the groundwater table, which ranges from 2 to 7 feet across the site (fauna would not be expected to burrow past the water table). Based on this information, subsurface soils most likely do not present a significant ecological exposure pathway.

5.7.2 Human Health Exposure Evaluation

HHEE was conducted to assess the potential for human exposure to MGP-related constituents in soil, groundwater and soil gas at and near the site. Analytical data indicate that BTEX, PAHs, arsenic, and cyanide are present in subsurface soils at concentrations exceeding NYSDEC SCOs. As such, these compounds are considered as constituents of potential concern (COPCs) for the purposes of the HHEE. Although total cyanide is considered a COPC, analysis of a subset of subsurface soil samples indicates that little to no free cyanide is present in subsurface soils. As such, the total cyanide detected in soils samples is in a complexed form and not biologically available to humans.

Because maintenance workers, trespassers, and off-site residents are not expected to be involved in intrusive activities, subsurface soil does not present a complete exposure pathway for these receptors. The potential for exposure to COPCs in subsurface soils is most likely limited to construction workers that may be engaged in future intrusive activities, although potential exposures could be mitigated through the use of PPE.

Surface soils represent the greatest potential for exposure (via all pathways). Surface soils represent a complete exposure pathway for maintenance workers, construction workers, off-site residents, and trespassers. However, potential exposures to COPCs in surface soil are most likely limited because surface soil samples were collected from vegetated areas (i.e., direct exposure to soils is likely mitigated by the presence of groundcover). Further, surface samples with the greatest exceedances of SCOs are located in areas that are most likely not used on a frequent basis (e.g., within or along the site fence line).

Groundwater in the City of Ogdensburg is not used as a potable source, and therefore exposure via ingestion of groundwater is unlikely. Likewise, there is relatively little potential for direct contact to groundwater for maintenance workers, off-site residents, and trespassers because these receptors would not be involved in intrusive activities. Construction workers may be exposed to shallow groundwater during future intrusive activities, although these exposures could be mitigated with the use of PPE.

Although low levels of numerous VOCs were detected in soil vapor and indoor air samples collected during the three rounds of soil vapor investigation, the VOCs do not appear to be related to the former MGP. Furthermore, the NYSDEC and NYSDOH have concluded that additional soil vapor investigations are not warranted at the site at this time.

5.8 Conclusion

National Grid has adequately characterized the nature and extent of the former MGP’s impacts on the environment and fulfilled the requirements of the Voluntary Consent Order. Based on the findings of the RI, no imminent threat to human health or the environment has been identified. Following approval of this RI Report by the NYSDEC, National Grid will develop Remedial Action Objectives and evaluate appropriate remedial measures for the site.

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Tables

TABLE 1
SAMPLE SUMMARY

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Matrix	Location ID	Depth Range	Date Collected	VOCs	SVOCs	Cyanide	PIANO
Air	AA-1	NA	3/28/2007	X	--	--	--
	AA-2	NA	3/28/2007	X	--	--	--
	AA-3	NA	3/28/2007	X	--	--	--
	AMBIENT-1	NA	12/16/2008	X	--	--	--
	IA-1	NA	3/28/2007	X	--	--	--
	IA-2	NA	3/28/2007	X	--	--	--
	SV-1	NA	12/16/2008	X	--	--	--
	SV-2	NA	12/16/2008	X	--	--	--
	SV-3	NA	12/16/2008	X	--	--	--
	SV-3- (DUP)	NA	12/16/2008	X	--	--	--
	VP-1	NA	1/24/2006	X	--	--	--
	VP-1- (DUP)	NA	1/24/2006	X	--	--	--
	VP-1A	NA	3/28/2007	X	--	--	--
	VP-2	NA	1/24/2006	X	--	--	--
	VP-3	NA	3/28/2007	X	--	--	--
	VP-3- (DUP)	NA	3/28/2007	X	--	--	--
Groundwater	GW-1 (Durham)	NA	3/28/2007	--	--	--	X
	MW-1	4.7-6.7	11/29/2007	X	X	X	--
	MW-2	3.0-6.0	11/27/2007	X	X	X	--
	MW-2R	40-50	11/27/2007	X	X	X	--
	MW-2R	40-50	3/21/2008	X	X	X	--
	MW-2R	12-19	10/9/2007	X	X	X	--
	MW-2R- (DUP)	12-19	10/9/2007	X	X	X	--
	MW-2R	19-29	10/9/2007	X	X	X	--
	MW-2R	29-39	10/9/2007	X	X	X	--
	MW-3	3.0-5.0	7/25/2007	X	X	X	X
	MW-4R	8-18	6/12/2006	X	X	X	--
	MW-4R	8-18	11/27/2007	X	X	X	--
	MW-5R	12.4-22.4	6/13/2006	X	X	X	--
	MW-5R	12.4-22.4	11/27/2007	X	X	X	--
	MW-6R	14.3-24.3	6/13/2006	X	X	X	--
	MW-6R	14.3-24.3	11/28/2007	X	X	X	--
	MW-7R	11-21	6/14/2006	X	X	X	--
	MW-7R	11-21	11/27/2007	X	X	X	--
	MW-7R- (DUP)	11-21	11/27/2007	X	X	X	--
	MW-8R	11-21	6/13/2006	X	X	X	--
	MW-8R	11-21	11/29/2007	X	X	X	--
	MW-8R- (DUP)	11-21	6/13/2006	X	X	X	--
	MW-9	3-7	6/12/2006	X	X	X	--
	MW-9	3-7	11/28/2007	X	X	X	--
	MW-10R	11.8-21.8	6/13/2006	X	X	X	--
	MW-10R	11.8-21.8	11/28/2007	X	X	X	--
	MW-11	3.1-7.1	6/12/2006	X	X	X	--
	MW-11	3.1-7.1	3/28/2007	--	--	--	X
	MW-12R	10-20	6/13/2006	X	X	X	--
	MW-12R	10-20	3/28/2007	--	--	--	X
	MW-12R- (DUP)	10-20	3/28/2007	--	--	--	X
	MW-13R	48-58	11/28/2007	X	X	X	--
	MW-13R	48-58	3/20/2008	X	X	X	--
	MW-13R- (DUP)	48-58	3/20/2008	X	X	X	--
	MW-13R	19-29	10/22/2007	X	X	X	--
	MW-13R	29-39	10/22/2007	X	X	X	--
	MW-13R	39-49	10/23/2007	X	X	X	--
	MW-13R	49-60	10/23/2007	X	X	X	--
	MW-14R	39-49	11/29/2007	X	X	X	--
	MW-14R	39-49	3/21/2008	X	X	X	--
	MW-14R	39-49	11/21/2008	X	X	X	--
	MW-14R	9-19	10/17/2007	X	X	X	--
	MW-14R	29-39	10/17/2007	X	--	--	--
	MW-14R- (DUP)	29-39	10/17/2007	X	X	X	--

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Matrix	Location ID	Depth Range	Date Collected	VOCs	SVOCs	Cyanide	PIANO
Groundwater	MW-14R	39-49	10/17/2007	X	X	X	--
(continued)	MW-14R	49-60	10/18/2007	X	X	X	--
	MW-15	4.5-9.5	11/29/2007	X	X	X	--
	MW-15	4.5-9.5	3/20/2008	X	X	X	--
	MW-15RS	14-24	11/29/2007	X	X	X	--
	MW-15RS	14-24	3/20/2008	X	X	X	--
	MW-15RS	14-24	11/21/2008	X	X	X	--
	MW-15RD	41-51	11/29/2007	X	X	X	--
	MW-15RD	41-51	3/20/2008	X	X	X	--
	MW-15RD	41-51	11/21/2008	X	X	X	--
	MW-15RD- (DUP)	41-51	11/21/2008	X	X	X	--
	MW-15RD	13-19.5	10/12/2007	X	X	X	--
	MW-15RD	19.5-29.5	10/12/2007	X	X	X	--
	MW-15RD	29.5-39.5	10/15/2007	X	X	X	--
	MW-15RD	39.5-49.5	10/15/2007	X	X	X	--
	MW-15RD	49.5-59.5	10/16/2007	X	X	X	--
	MW-16R	11-21	11/28/2007	X	X	X	--
	MW-16R	11-21	3/21/2008	X	X	X	--
	MW-16R	9-19	10/25/2007	X	X	X	--
	MW-16R	39-49	10/25/2007	X	X	X	--
	MW-16R	49-55	10/26/2007	X	X	X	--
	MW-17R	14.9-24.9	11/21/2008	X	X	X	--
	MW-17R	14.9-24.9	2/4/2009	X	X	X	--
	MW-19R	28.5-38.5	11/21/2008	X	X	X	--
	MW-19R	28.5-38.5	2/4/2009	X	X	X	--
	MW-19R	11.2-19.1	10/1/2008	X	X	X	--
	MW-19R	19.1-28.7	10/2/2008	X	X	X	--
	MW-19R	28.7-38.8	10/2/2008	X	X	X	--
	MW-19R	38.8-48	10/3/2008	X	--	X	--
	MW-19R	49-58.8	10/6/2008	X	X	X	--
	MW-19R	58.8-68.8	10/7/2008	X	X	X	--
	MW-20R	18.2-28.2	11/21/2008	X	X	X	--
	MW-20R	18.2-28.2	2/4/2009	X	X	X	--
	MW-20R- (DUP)	18.2-28.2	2/4/2009	X	X	X	--
	MW-20R	9-18.9	10/7/2008	X	X	X	--
	MW-20R	18.9-29	10/8/2008	X	X	X	--
	MW-20R	29-38.5	10/8/2008	X	X	X	--
	MW-20R	38.5-48.9	10/8/2008	X	X	X	--
	MW-20R	48.9-58.9	10/9/2008	X	X	X	--
	MW-20R	58.9-63.5	10/9/2008	X	X	X	--
	PW-1	NA	9/24/2007	X	X	X	--
	PW-1	NA	11/30/2007	X	X	X	--
	PW-1- (DUP)	NA	9/24/2007	X	X	X	--
	PW-2	NA	9/24/2007	X	X	X	--
	PW-2	NA	11/30/2007	X	X	X	--
Soil	B-6	2-2.9	5/9/2006	X	X	X	--
	B-7	4-4.6	5/9/2006	X	X	X	--
	B-8B	2-2.9	5/12/2006	--	--	X	--
	B-8C	2-2.6	5/12/2006	X	X	X	--
	B-8D	0.2-1.1	5/12/2006	--	--	X	--
	B-9	0-0.9	5/11/2006	X	X	X	--
	B-9- (DUP)	0-0.9	5/11/2006	X	X	X	--
	B-9	2-2.3	5/11/2006	X	X	X	--
	B-10	0-0.5	5/11/2006	X	X	X	--
	B-11	2-4	10/18/2007	X	X	X	--
	B-11	4-4.9	10/18/2007	X	X	X	--
	B-12	4-6	10/11/2007	X	X	X	--
	B-12	6-6.9	10/11/2007	X	X	X	--
	B-13	0-4	10/11/2007	X	X	X	--
	B-13	4-7.3	10/11/2007	X	X	X	--
	B-14	2-4	10/18/2007	X	X	X	--

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OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Matrix	Location ID	Depth Range	Date Collected	VOCs	SVOCs	Cyanide	PIANO
Soil	B-14	4-5.7	10/18/2007	X	X	X	--
(continued)	B-15	4-6	10/11/2007	X	X	X	--
	B-15	6-7.7	10/11/2007	X	X	X	--
	B-16	2-4	10/11/2007	X	X	X	--
	B-16	4-6	10/11/2007	X	X	X	--
	B-17	0-1	10/14/2008	X	X	--	--
	B-18	2-3.5	10/14/2008	X	X	--	--
	B-19A	5-6	10/15/2008	X	X	--	--
	B-20	4-5	10/14/2008	X	X	--	--
	B-21	4-5.5	10/14/2008	X	X	--	--
	B-22	3-4.4	10/14/2008	X	X	--	--
	B-23	4-5.5	10/13/2008	X	X	--	--
	B-24	4-6	10/13/2008	X	X	--	--
	B-25	4-6	10/13/2008	X	X	--	--
	B-26	2-3.8	10/13/2008	X	X	--	--
	B-27	1.5-3.7	10/13/2008	X	X	--	--
	B-28	2-3.5	10/13/2008	X	X	--	--
	B-29	1.5-2.7	10/13/2008	X	X	--	--
	B-29	4-5	10/14/2008	X	X	--	--
	B-30	2-3.5	10/14/2008	X	X	--	--
	B-31	3-4.7	10/14/2008	X	X	--	--
	B-32	4.5-5	10/14/2008	X	X	--	--
	MW-4R	2-2.5	5/11/2006	X	X	X	--
	MW-5R	5-6.1	5/9/2006	X	X	X	--
	MW-5R	7-7.2	5/9/2006	X	X	X	--
	MW-6R	6-7.1	5/10/2006	X	X	X	--
	MW-6R	8-8.3	5/10/2006	X	X	X	--
	MW-7R	2-2.4	5/11/2006	X	X	X	--
	MW-7R	6-6.5	5/11/2006	X	X	X	--
	MW-8R	2-2.9	5/17/2006	X	X	X	--
	MW-9	4-4.5	5/12/2006	X	X	X	--
	MW-9	6-6.4	5/12/2006	X	X	X	--
	MW-10R	0-1.5	5/17/2006	X	X	X	--
	MW-10R- (DUP)	0-1.5	5/17/2006	X	X	X	--
	MW-10R	4-5	5/17/2006	X	X	X	--
	MW-11	4-4.6	5/12/2006	X	X	X	--
	MW-12R	2-2.8	5/12/2006	X	X	X	--
	PZ-1	14-15.6	5/8/2006	X	X	X	--
	PZ-1	16-16.4	5/8/2006	X	X	X	--
	SS-09	0-0.17	10/26/2007	X	X	X	--
	SS-09- (DUP)	0-0.17	10/26/2007	X	X	X	--
	SS-10	0-0.17	10/26/2007	X	X	X	--
	SS-11	0-0.17	10/26/2007	X	X	X	--
	SS-12	0-0.17	10/26/2007	X	X	X	--
	TP-5	1-3	5/22/2006	--	--	X	--
	TP-5	4.7-6.5	5/22/2006	X	X	X	--
	TP-6	0-2	5/22/2006	X	X	X	--
	TP-6	5-7	5/22/2006	X	X	X	--

Notes:
*Packer test groundwater sample.
NA = Not Available.
-- = Not Analyzed.
VOCs = Volatile Organic Compounds.
SVOCs = Semi-Volatile Organic Compounds.
PIANO = Paraffins, Isoparaffins, Aromatics, Naphthenes and Olefins.
Cyanide = Total Cyanide.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	B-1B 4 - 6 12/10/03	B-3 4 - 6 12/10/03	B-4B 4 - 6 12/11/03	B-5 6 - 8 12/10/03	B-6 2 - 2.9 05/09/06	B-7 4 - 4.6 05/09/06	B-8B 2 - 2.9 05/12/06	B-8C 2 - 2.6 05/12/06	B-9 2 - 2.3 05/11/06	B-11 2 - 4 10/18/07	B-11 4 - 4.9 10/18/07	B-12 4 - 6 10/11/07	B-12 6 - 6.9 10/11/07
Detected VOCs																
1,1-Dichloroethane	26	240	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	0.0062 U	0.0057 U	0.0056 U	0.0057 U
1,2-Dichloropropane	- -	- -	mg/kg	5.0	NA	NA	NA	0.013 UJ	0.0070 UJ	NA	0.0089 UJ	0.0063 UJ	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Acetone	100	500	mg/kg	1.2 U	NA	NA	NA	1.2	0.43	NA	0.022 U	0.016 U	0.067	0.064	0.0056 U	0.0057 U
Benzene	4.8	44	mg/kg	**8.2**	0.048	0.0030 J	**320 D [540]**	0.013 U	0.00095 J	NA	0.0026 J	0.0038 J	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Carbon Disulfide	- -	- -	mg/kg	0.48 U	NA	NA	NA	0.029	0.0072	NA	0.0089 U	0.0063 U	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Chloroform	49	350	mg/kg	0.48 U	NA	NA	NA	0.013 UJ	0.0070 UJ	NA	0.0089 UJ	0.0063 UJ	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Ethylbenzene	41	390	mg/kg	1.8	0.034	0.0020 J	19 [22]	0.013 U	0.0070 U	NA	0.0089 U	0.0033 J	0.0050 U	0.0046 U	0.0044 UJ	0.0046 U
Isopropylbenzene	- -	- -	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	NA	NA	NA	NA
Methyl Acetate	- -	- -	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	NA	NA	NA	NA
Methyl Ethyl Ketone	100	500	mg/kg	1.2 UJ	NA	NA	NA	0.16	0.042	NA	0.022 U	0.016 U	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Methylcyclohexane	- -	- -	mg/kg	0.15 J	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.010	NA	NA	NA	NA
Methylene Chloride	100	500	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	0.0037 U	0.0034 U	0.0033 U	0.0034 U
Styrene	- -	- -	mg/kg	6.5	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0014 J	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Toluene	100	500	mg/kg	10	0.026	0.0070 U	**240 D [350]**	0.0058 J	0.0029 J	NA	0.0011 J	0.0057 J	0.0062 U	0.0057 U	0.0056 UJ	0.0057 U
Xylene (total)	100	500	mg/kg	31	0.12	0.0030 J	**340 [400]**	0.039 UJ	0.021 UJ	NA	0.027 U	0.023	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Total BTEX	- -	- -	mg/kg	51	0.23	0.0080 J	920 [1,300]	0.0058 J	0.0039 J	NA	0.0037 J	0.036 J	ND	ND	ND	ND
Total VOCs	- -	- -	mg/kg	63 J	0.23	0.0080 J	920 [1,300]	1.4 J	0.48 J	NA	0.0037 J	0.047 J	0.067	0.064	ND	ND
Detected SVOCs																
1,1'-Biphenyl	- -	- -	mg/kg	390	NA	NA	NA	0.24 J	2.4 U	NA	0.19 J	13 J	NA	NA	NA	NA
2,4-Dimethylphenol	- -	- -	mg/kg	120 U	NA	NA	NA	0.31 J	2.4 U	NA	0.30 J	120 U	0.42 U	0.38 U	0.39 U	0.39 U
2-Methylnaphthalene	- -	- -	mg/kg	1,300	9.1 J	17 U	480 [240]	1.5 J	2.4 U	NA	0.77 J	53 J	0.011 J	0.38 U	0.39 U	0.39 U
2-Methylphenol	100	500	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	0.42 U	0.38 U	0.39 U	0.39 U
4-Methylphenol	34	500	mg/kg	120 U	NA	NA	NA	0.45 J	0.38 J	NA	0.46 J	240 U	0.42 U	0.38 U	0.39 U	0.39 U
Acenaphthene	100	500	mg/kg	**390**	22	2.6 J	92 [55 J]	1.7 J	2.4 U	NA	0.46 J	86 J	0.42 U	0.38 U	0.39 U	0.39 U
Acenaphthylene	100	500	mg/kg	**1,800**	46	11 J	**120 [82 J]**	4.4	2.4 U	NA	4.0	22 J	0.054 J	0.38 U	0.39 U	0.014 J
Acetophenone	- -	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	0.35 J	120 U	NA	NA	NA	NA
Anthracene	100	500	mg/kg	**4,000 D**	82	22	**380 [260]**	16	2.4 U	NA	5.6	**160**	0.074 J	0.020 J	0.39 U	0.017 J
Benzaldehyde	- -	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	NA	NA	NA	NA
Benzo(a)anthracene	1	5.6	mg/kg	**2,400 D**	**44**	**53**	**270 [170]**	**20**	0.42 J	NA	**34**	**200**	0.44 J	0.091 J	0.028 J	0.056 J
Benzo(a)pyrene	1	1	mg/kg	**1,500**	**31**	**50**	**260 [150]**	**27**	0.52 J	NA	**25**	**160**	0.50 J	0.092 J	0.024 J	0.054 J
Benzo(b)fluoranthene	1	5.6	mg/kg	**1,400**	**24**	**46**	**190 [120]**	**32**	0.46 J	NA	**54 EJ**	**120**	0.53 J	0.081 J	0.018 J	0.045 J
Benzo(g,h,i)perylene	100	500	mg/kg	**950 J**	10 J	24	**210 J [91 J]**	7.6	0.24 J	NA	15	65 J	0.28 J	0.042 J	0.020 J	0.038 J
Benzo(k)fluoranthene	3.9	56	mg/kg	**860**	**26**	**38**	**200 [120]**	**17**	0.55 J	NA	**19**	**150 J**	0.57 J	0.084 J	0.026 J	0.054 J
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	120 U	NA	NA	NA	2.7 UJ	2.4 UJ	NA	2.2 UJ	120 U	0.13 J	0.15 J	0.39 U	0.19 J
Butylbenzyl phthalate	- -	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	0.42 U	0.38 U	0.39 U	0.39 U
Carbazole	- -	- -	mg/kg	1,300	NA	NA	NA	12 J	2.4 UJ	NA	1.3 J	83 J	0.020 J	0.38 U	0.39 U	0.39 U
Chrysene	3.9	56	mg/kg	**1,600**	**36**	**45**	**240 [150]**	**17**	0.35 J	NA	**32**	**190**	0.40 J	0.080 J	0.038 J	0.062 J
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	**570**	**8.1 J**	**15 J**	**42 J [23 J]**	**4.6**	2.4 U	NA	**6.2**	**32 J**	0.16 J	0.038 U	0.039 U	0.011 J
Dibenzofuran	59	350	mg/kg	**1,500**	NA	NA	NA	2.9	2.4 U	NA	0.88 J	**80 J**	0.017 J	0.38 U	0.39 U	0.39 U

See Notes on Page 11.

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REMEDIAL INVESTIGATION
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OGDENSBURG, NEW YORK

Location ID: / Sample Depth (Feet): / Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	B-1B 4 - 6 12/10/03	B-3 4 - 6 12/10/03	B-4B 4 - 6 12/11/03	B-5 6 - 8 12/10/03	B-6 2 - 2.9 05/09/06	B-7 4 - 4.6 05/09/06	B-8B 2 - 2.9 05/12/06	B-8C 2 - 2.6 05/12/06	B-9 2 - 2.3 05/11/06	B-11 2 - 4 10/18/07	B-11 4 - 4.9 10/18/07	B-12 4 - 6 10/11/07	B-12 6 - 6.9 10/11/07
Detected SVOCs (Cont.)																
Di-n-butyl phthalate	- -	- -	mg/kg	120 U	NA	NA	NA	0.37 J	2.4 U	NA	0.33 J	7.2 J	0.42 U	0.38 U	0.39 U	0.39 U
Fluoranthene	100	500	mg/kg	**5,100 D**	87	80	**790 [520]**	66 D	0.80 J	NA	54 D	**470**	0.59 J	0.16 J	0.047 J	0.092 J
Fluorene	100	500	mg/kg	**2,400 D**	**110**	12 J	**330 [200]**	7.4	2.4 U	NA	1.3 J	**110 J**	0.42 U	0.38 U	0.39 U	0.39 U
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	**1,400**	**16 J**	**34**	**260 J [110 J]**	**11**	0.26 J	NA	**19**	**79 J**	0.36 J	0.050 J	0.013 J	0.036 J
Naphthalene	100	500	mg/kg	**5,100 D**	26	4.5 J	**3,300 D [1,100]**	1.5 J	2.4 U	NA	1.6 J	86 J	0.042 J	0.38 U	0.012 J	0.024 J
Phenanthrene	100	500	mg/kg	**7,300 D**	**190 D**	55	**1,200 [740]**	49 D	0.38 J	NA	12	**570**	0.22 J	0.11 J	0.034 J	0.055 J
Phenol	100	500	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	0.42 U	0.38 U	0.39 U	0.39 U
Pyrene	100	500	mg/kg	**4,000 D**	71	72	**610 [380]**	30	0.60 J	NA	48 EJ	**360**	0.54 J	0.15 J	0.047 J	0.086 J
Total PAHs	- -	- -	mg/kg	42,000 J	840 J	560 J	9,000 J [4,500 J]	310 J	4.6 J	NA	330 J	2,900 J	4.8 J	0.96 J	0.31 J	0.64 J
Total SVOCs	- -	- -	mg/kg	45,000 J	840 J	560 J	9,000 J [4,500 J]	330 J	5.0 J	NA	340 J	3,100 J	4.9 J	1.1 J	0.31 J	NA
Detected PCBs																
None Detected	- -	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																
None Detected	- -	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics																
Aluminum	- -	- -	mg/kg	3,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	mg/kg	**19.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	400	400	mg/kg	33.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	72	590	mg/kg	0.590 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4.3	9.3	mg/kg	0.100 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	mg/kg	37,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	mg/kg	3.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	mg/kg	2.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	270	mg/kg	26.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	27	mg/kg	14.9 J	1.20 J	8.40 J	**348 J [23.7 J]**	0.280 UJ	0.250 UJ	3.40 J	**251 J**	15.1 J	**35.0**	**102**	0.500 U	0.500 U
Cyanide, Free	27	27	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	- -	mg/kg	5,830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	1,000	mg/kg	30.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	mg/kg	1,220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2,000	10,000	mg/kg	48.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	2.8	mg/kg	0.360 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	310	310	mg/kg	6.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	mg/kg	194 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	180	1,500	mg/kg	1.90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	mg/kg	7.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	10,000	10,000	mg/kg	27.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

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REMEDIAL INVESTIGATION
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OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	B-13 0 - 4 10/11/07	B-13 4 - 7.3 10/11/07	B-14 2 - 4 10/18/07	B-14 4 - 5.7 10/18/07	B-15 4 - 6 10/11/07	B-15 6 - 7.7 10/11/07	B-16 2 - 4 10/11/07	B-16 4 - 6 10/11/07	B-18 2 - 3.5 10/14/08	B-19A 5 - 6 10/15/08	B-20 4 - 5 10/14/08	B-21 4 - 5.5 10/14/08	B-22 3 - 4.4 10/14/08
Detected VOCs																
1,1-Dichloroethane	26	240	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
1,2-Dichloropropane	- -	- -	mg/kg	0.0013 U	0.0013 UJ	0.0011 U	0.0011 U	0.0010 U	0.0012 UJ	0.0010 U	1.2 U	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Acetone	100	500	mg/kg	0.0063 U	0.0064 UJ	0.049	0.046	0.0052 U	0.0061 UJ	0.0065 U	6.1 U	0.0033 UB	23 UJ	0.036	0.056	0.0042 UB
Benzene	4.8	44	mg/kg	0.0013 U	0.0013 UJ	0.0011 U	0.0011 U	0.0010 U	0.0012 UJ	0.0010 U	0.77 J	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Carbon Disulfide	- -	- -	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0020	0.0012 J	0.0011 U
Chloroform	49	350	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Ethylbenzene	41	390	mg/kg	0.0050 U	0.0051 UJ	0.0044 U	0.0044 U	0.0042 U	0.0049 UJ	0.0042 U	4.9 U	0.0011 U	3.4 J	0.0013 U	0.0013 U	0.0011 U
Isopropylbenzene	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	100	500	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0041	0.0074	0.0011 UJ
Methylcyclohexane	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	100	500	mg/kg	0.0038 U	0.0038 UJ	0.0033 U	0.0033 U	0.0031 U	0.0037 UJ	0.0031 U	3.7 U	0.0011 UB	4.7 UJ	0.0013 UB	0.0013 UB	0.0011 UB
Styrene	- -	- -	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	0.48 J	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Toluene	100	500	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	0.84 J	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Xylene (total)	100	500	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	0.81 J	0.0011 U	25 J	0.0013 U	0.0013 U	0.0011 U
Total BTEX	- -	- -	mg/kg	ND	ND	ND	ND	ND	ND	ND	2.4 J	ND	28 J	ND	ND	ND
Total VOCs	- -	- -	mg/kg	ND	ND	0.049	0.046	ND	ND	ND	2.9 J	ND	28 J	0.042	0.065 J	ND
Detected SVOCs																
1,1'-Biphenyl	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	- -	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	0.93 J	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
2-Methylnaphthalene	- -	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.013 J	0.83 UJ	0.72 UJ	42	NA	NA	NA	NA	NA
2-Methylphenol	100	500	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	NA	NA	NA	NA	NA
4-Methylphenol	34	500	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	0.90 J	NA	NA	NA	NA	NA
Acenaphthene	100	500	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	19 J	0.030 J	3.3 J	0.017 J	0.46 U	0.38 U
Acenaphthylene	100	500	mg/kg	0.44 UJ	0.44 UJ	0.021 J	0.37 U	0.044 J	0.83 UJ	0.019 J	77	0.052 J	16	0.019 J	0.46 U	0.38 U
Acetophenone	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	100	500	mg/kg	0.44 UJ	0.44 UJ	0.033 J	0.012 J	0.042 J	0.83 UJ	0.032 J	**210**	0.11 J	15	0.016 J	0.46 U	0.011 J
Benzaldehyde	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1	5.6	mg/kg	0.014 J	0.019 J	0.28 J	0.052 J	0.21	0.033 J	0.14 J	**190**	0.47	**18**	0.080	0.046 U	0.044
Benzo(a)pyrene	1	1	mg/kg	0.014 J	0.016 J	0.33 J	0.065 J	0.20	0.044 J	0.21 J	**180**	0.66	**16**	0.10	0.0096 J	0.058
Benzo(b)fluoranthene	1	5.6	mg/kg	0.014 J	0.014 J	0.31 J	0.054 J	0.19	0.049 J	0.22 J	**180**	0.73	**11**	0.099	0.046 U	0.050
Benzo(g,h,i)perylene	100	500	mg/kg	0.0072 J	0.011 J	0.22 J	0.052 J	0.059 J	0.027 J	0.068 J	91	0.15 J	2.7 J	0.045 J	0.46 U	0.018 J
Benzo(k)fluoranthene	3.9	56	mg/kg	0.013 J	0.019 J	0.32 J	0.055 J	0.23	0.056 J	0.28 J	**210**	0.78	**18**	0.13	0.013 J	0.061
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	0.44 UJ	0.15 J	0.16 J	0.25 J	0.10 J	0.83 UJ	0.26 J	41 U	0.26 J	4.1 U	0.42 J	0.46 U	0.28 J
Butylbenzyl phthalate	- -	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
Carbazole	- -	- -	mg/kg	0.44 UJ	0.44 UJ	0.014 J	0.37 U	0.016 J	0.83 UJ	0.72 UJ	72	NA	NA	NA	NA	NA
Chrysene	3.9	56	mg/kg	0.016 J	0.022 J	0.26 J	0.059 J	0.22 J	0.038 J	0.17 J	**180**	0.46	**16**	0.096 J	0.46 U	0.055 J
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	0.044 UJ	0.044 UJ	0.037 U	0.037 U	0.024 J	0.083 UJ	0.072 UJ	**38**	0.093 J	**1.8**	0.011 J	0.046 U	0.011 J
Dibenzofuran	59	350	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.010 J	0.83 UJ	0.72 UJ	**110**	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	B-13 0 - 4 10/11/07	B-13 4 - 7.3 10/11/07	B-14 2 - 4 10/18/07	B-14 4 - 5.7 10/18/07	B-15 4 - 6 10/11/07	B-15 6 - 7.7 10/11/07	B-16 2 - 4 10/11/07	B-16 4 - 6 10/11/07	B-18 2 - 3.5 10/14/08	B-19A 5 - 6 10/15/08	B-20 4 - 5 10/14/08	B-21 4 - 5.5 10/14/08	B-22 3 - 4.4 10/14/08
Detected SVOCs (Cont.)																
Di-n-butyl phthalate	- -	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
Fluoranthene	100	500	mg/kg	0.031 J	0.043 J	0.43 J	0.090 J	0.34 J	0.047 J	0.19 J	**580**	0.50	24	0.11 J	0.015 J	0.067 J
Fluorene	100	500	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.013 J	0.83 UJ	0.72 UJ	81	0.039 J	18	0.46 U	0.46 U	0.38 U
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	0.044 UJ	0.0096 J	0.22 J	0.049 J	0.065	0.023 J	0.065 J	**100**	0.16 J	**3.7**	0.054	0.046 U	0.015 J
Naphthalene	100	500	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.026 J	0.83 UJ	0.054 J	**390**	0.046 J	75	0.033 J	0.0098 J	0.38 U
Phenanthrene	100	500	mg/kg	0.015 J	0.021 J	0.12 J	0.042 J	0.14 J	0.025 J	0.082 J	**730**	0.29 J	33	0.051 J	0.014 J	0.034 J
Phenol	100	500	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
Pyrene	100	500	mg/kg	0.026 J	0.035 J	0.40 J	0.082 J	0.34 J	0.053 J	0.26 J	**420**	0.67 J	25	0.10 J	0.013 J	0.066 J
Total PAHs	- -	- -	mg/kg	0.15 J	0.21 J	2.9 J	0.61 J	2.2 J	0.40 J	1.8 J	3,700 J	5.2 J	300 J	0.96 J	0.074 J	0.49 J
Total SVOCs	- -	- -	mg/kg	0.25 J	0.51 J	3.1 J	0.86 J	2.3 J	0.40 J	2.1 J	3,900 J	5.5 J	300 J	1.4 J	0.074 J	0.77 J
Detected PCBs																
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics																
Aluminum	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	400	400	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	72	590	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4.3	9.3	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	270	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	27	mg/kg	0.500 U	0.500 U	8.50	8.30	5.40	1.20	0.500 U	17.1	0.0730 J	10.5	2.40	0.650 U	0.590 U
Cyanide, Free	27	27	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.0760 U	0.220 J	0.0730 U	0.0780 U	0.071 U
Iron	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	1,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	2.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	310	310	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	180	1,500	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	10,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	B-23 4 - 5.5 10/13/08	B-24 4 - 6 10/13/08	B-25 4 - 6 10/13/08	B-26 2 - 3.8 10/13/08	B-27 1.5 - 3.7 10/13/08	B-28 2 - 3.5 10/13/08	B-29 1.5 - 2.7 10/13/08	B-29 4 - 5 10/14/08	B-30 2 - 3.5 10/14/08	B-31 3 - 4.7 10/14/08	B-32 4.5 - 5 10/14/08	MW-1 2 - 4 12/12/03	MW-2 2 - 6 12/11/03
Detected VOCs																
1,1-Dichloroethane	26	240	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.00050 J	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
1,2-Dichloropropane	- -	- -	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
Acetone	100	500	mg/kg	0.033	0.064	0.055	0.058	0.0015 U	0.0011 U	0.032	60 UJ	0.022	0.15	110 UJ	NA	NA
Benzene	4.8	44	mg/kg	0.0012 U	0.0010 J	0.0032	0.0016	0.0015 U	0.0035	0.072	3.2 J	0.0015 U	0.0031	21 UJ	0.00070 J	0.0060 U
Carbon Disulfide	- -	- -	mg/kg	0.00090 J	0.0019	0.0019	0.00090 J	0.0015 U	0.00080 J	0.0014	12 UJ	0.0013 J	0.0059	21 UJ	NA	NA
Chloroform	49	350	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
Ethylbenzene	41	390	mg/kg	0.0012 U	0.0014 U	0.0014 UJ	0.0015 U	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.00050 J	21 UJ	0.0020 J	0.0020 J
Isopropylbenzene	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	100	500	mg/kg	0.0026	0.013	0.0073	0.0040	0.0015 U	0.0011 U	0.0022	12 UJ	0.0025	0.026	21 UJ	NA	NA
Methylcyclohexane	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	100	500	mg/kg	0.0012 UB	0.0014 UB	0.0014 UBJ	0.0015 U	0.0015 U	0.0011 U	0.0012 UB	12 UJ	0.0015 UB	0.0013 UJ	21 UJ	NA	NA
Styrene	- -	- -	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.013	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
Toluene	100	500	mg/kg	0.0012 U	0.0014 U	0.0010 J	0.0015 U	0.0015 U	0.0011 U	0.059	3.3 J	0.0015 U	0.0017	21 UJ	0.0020 U	0.0060 U
Xylene (total)	100	500	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.25	9.1 J	0.0015 U	0.0032	16 J	0.0020 J	0.0070 J
Total BTEX	- -	- -	mg/kg	ND	0.0010 J	0.0042 J	0.0016	ND	0.0035	0.38	16 J	ND	0.0085 J	16 J	0.0047 J	0.0090 J
Total VOCs	- -	- -	mg/kg	0.037 J	0.080 J	0.068 J	0.065 J	ND	0.0043 J	0.43	16 J	0.026 J	0.19 J	16 J	0.0047 J	0.0090 J
Detected SVOCs																
1,1'-Biphenyl	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	- -	- -	mg/kg	0.43 U	5.0 U	0.48 U	0.53 U	0.020 J	0.020 J	40 UJ	10 U	0.51 U	0.46 U	19 U	NA	NA
2-Methylnaphthalene	- -	- -	mg/kg	0.43 U	0.64 J	0.17 J	0.10 J	0.29 J	0.24 J	130 J	NA	NA	NA	NA	0.41 J	7.6 J
2-Methylphenol	100	500	mg/kg	0.43 U	5.0 U	0.010 J	0.014 J	0.021 J	0.023 J	40 UJ	NA	NA	NA	NA	NA	NA
4-Methylphenol	34	500	mg/kg	0.43 U	0.15 J	0.028 J	0.043 J	0.061 J	0.051 J	40 UJ	NA	NA	NA	NA	NA	NA
Acenaphthene	100	500	mg/kg	0.029 J	2.7 J	0.17 J	0.14 J	0.10 J	0.062 J	**130 J**	43	0.090 J	0.54	23	0.21 J	7.9 J
Acenaphthylene	100	500	mg/kg	0.43 U	2.9 J	0.26 J	0.29 J	0.91	0.73	**120 J**	52	0.23 J	0.58	80	1.4	56
Acetophenone	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	100	500	mg/kg	0.43 U	17	0.43 J	0.46 J	1.0	0.50	**240 J**	**120**	0.48 J	1.1	**120**	3.2	56
Benzaldehyde	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	1	5.6	mg/kg	0.043 J	**18**	**1.4**	**1.7**	**5.1**	**1.9**	**210 J**	**52**	**1.9**	0.70	**52**	**15 D**	**180**
Benzo(a)pyrene	1	1	mg/kg	0.055	**16**	**1.5**	**2.2**	**7.0**	**2.3**	**150 J**	**38**	**2.4**	0.74	**40**	**11 D**	**160**
Benzo(b)fluoranthene	1	5.6	mg/kg	0.049	**13**	**1.2**	**1.7**	**8.0**	**2.7**	**140 J**	**27**	**2.0**	0.52	**25**	**12 D**	**200**
Benzo(g,h,i)perylene	100	500	mg/kg	0.042 J	4.0 J	0.69	0.94	2.0 J	0.62	32 J	16	0.82	0.19 J	19	3.9 J	100
Benzo(k)fluoranthene	3.9	56	mg/kg	0.050	**17**	1.5	2.3	**8.0**	3.6	**170 J**	**35**	2.5	0.92	**40**	**7.0 D**	**100**
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	0.14 J	5.0 U	0.099 J	0.41 J	0.40 J	0.11 J	40 UJ	10 U	0.21 J	0.46 U	19 U	NA	NA
Butylbenzyl phthalate	- -	- -	mg/kg	0.43 U	5.0 U	0.48 U	0.53 U	0.50 U	0.39 U	40 UJ	10 U	0.51 U	0.46 U	19 U	NA	NA
Carbazole	- -	- -	mg/kg	0.43 U	2.1 J	0.15 J	0.31 J	0.52	0.18 J	63 J	NA	NA	NA	NA	NA	NA
Chrysene	3.9	56	mg/kg	0.046 J	**16**	1.5	1.9	**5.5**	2.2	**200 J**	**47**	1.9	0.65	**48**	**13 D**	**150**
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	0.019 J	**1.6**	0.24	**0.35**	**0.83 J**	0.28	**17 J**	**8.5**	0.33	0.10	**7.1**	**3.5 J**	**49**
Dibenzofuran	59	350	mg/kg	0.43 U	3.1 J	0.093 J	0.23 J	0.25 J	0.17 J	**170 J**	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	B-23 4 - 5.5 10/13/08	B-24 4 - 6 10/13/08	B-25 4 - 6 10/13/08	B-26 2 - 3.8 10/13/08	B-27 1.5 - 3.7 10/13/08	B-28 2 - 3.5 10/13/08	B-29 1.5 - 2.7 10/13/08	B-29 4 - 5 10/14/08	B-30 2 - 3.5 10/14/08	B-31 3 - 4.7 10/14/08	B-32 4.5 - 5 10/14/08	MW-1 2 - 4 12/12/03	MW-2 2 - 6 12/11/03
Detected SVOCs (Cont.)																
Di-n-butyl phthalate	- -	- -	mg/kg	0.43 U	5.0 U	0.48 U	0.53 U	0.50 U	0.39 U	40 UJ	10 U	0.51 U	0.46 U	19 U	NA	NA
Fluoranthene	100	500	mg/kg	0.045 J	41	2.6	3.7	9.5	3.1	**600 J**	**130**	2.5	2.1	**130**	17 D	**330 D**
Fluorene	100	500	mg/kg	0.43 U	5.4	0.14 J	0.29 J	0.22 J	0.12 J	**230 J**	76	0.14 J	2.2	74	0.52 J	20 J
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	0.046	**4.6**	**0.71**	**1.1**	**2.1 J**	**0.78**	**43 J**	**17**	**0.92**	0.23	**19**	**6.7 J**	**140**
Naphthalene	100	500	mg/kg	0.031 J	2.0 J	0.79	0.29 J	0.48 J	0.55	**210 J**	**210**	0.17 J	3.4	**320**	0.26 J	12 J
Phenanthrene	100	500	mg/kg	0.028 J	36	1.3	2.7	4.1	1.0	**620 J**	**220**	1.2	1.4	**210**	5.5	**130**
Phenol	100	500	mg/kg	0.43 U	5.0 U	0.48 U	0.056 J	0.10 J	0.044 J	40 UJ	10 U	0.51 U	0.16 J	19 U	NA	NA
Pyrene	100	500	mg/kg	0.041 J	37	2.2	3.1	9.9	3.6	**450 J**	98	2.3	1.8	99	18 D	**300 D**
Total PAHs	- -	- -	mg/kg	0.52 J	240 J	17 J	23 J	65 J	24 J	3,700 J	1,200	20 J	17 J	1,300	120 J	2,000 J
Total SVOCs	- -	- -	mg/kg	0.66 J	240 J	17 J	24 J	66 J	25 J	3,900 J	1,200	20 J	17 J	1,300	120 J	2,000 J
Detected PCBs																
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides																
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics																
Aluminum	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	400	400	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	72	590	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4.3	9.3	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	270	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	27	mg/kg	0.630 U	0.790 U	15.3	3.00	2.30	4.40	4.80	0.690	0.450 J	**89.7**	0.540 U	0.740 J	**37.3 J**
Cyanide, Free	27	27	mg/kg	0.0750 U	0.0940 U	0.019 J	0.0950 U	0.0860 U	0.0690 U	0.0730 U	0.015 J	0.0480 J	0.0250 J	0.064 U	NA	NA
Iron	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	1,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	2.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	310	310	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	180	1,500	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	10,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	MW-4R 2 - 2.5 05/11/06	MW-5R 5 - 6.1 05/09/06	MW-6R 6 - 7.1 05/10/06	MW-7R 2 - 2.4 05/11/06	MW-7R 6 - 6.5 05/11/06	MW-8R 2 - 2.9 05/17/06	MW-9 4 - 4.5 05/12/06	MW-9 6 - 6.4 05/12/06	MW-10R 0 - 1.5 05/17/06	MW-10R 4 - 5 05/17/06	MW-11 4 - 4.6 05/12/06	MW-12R 2 - 2.8 05/12/06
Detected VOCs															
1,1-Dichloroethane	26	240	mg/kg	0.0050 U	5.6 U	37 U	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.014 U	0.0056 U [0.0055 U]	0.0054 U	0.0070 U	0.0068 U
1,2-Dichloropropane	- -	- -	mg/kg	0.0050 UJ	5.6 UJ	37 UJ	0.0082 UJ	0.33 UJ	0.0062 U	0.0065 UJ	0.014 UJ	0.0056 U [0.0055 U]	0.0054 U	0.0070 UJ	0.0068 UJ
Acetone	100	500	mg/kg	0.073	14 U	93 U	0.020 U	0.82 U	0.015 U	0.21 J	0.059 J	0.16 J [0.014 UJ]	0.16 J	0.046 J	0.012 J
Benzene	4.8	44	mg/kg	0.023	**200**	**1,300**	0.0082 U	2.4	0.0062 U	0.0042 J	0.021	0.0056 U [0.0055 U]	0.0054 U	0.0011 J	0.0068 U
Carbon Disulfide	- -	- -	mg/kg	0.016	5.6 U	37 U	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.014 U	0.0016 J [0.0055 U]	0.0023 J	0.0070 U	0.0068 U
Chloroform	49	350	mg/kg	0.0050 UJ	5.6 UJ	37 UJ	0.0082 UJ	0.33 UJ	0.0062 U	0.0065 U	0.014 U	0.0056 U [0.0055 U]	0.0054 U	0.0070 U	0.0068 U
Ethylbenzene	41	390	mg/kg	0.00080 J	21	**57**	0.0082 U	0.36	0.0062 U	0.0072	0.094	0.0056 U [0.0055 U]	0.0054 U	0.0070 U	0.0068 U
Isopropylbenzene	- -	- -	mg/kg	0.0050 U	1.1 J	37 U	0.0082 U	0.33 U	0.0062 U	0.0027 J	0.026	0.0056 UJ [0.0055 U]	0.0054 U	0.0070 U	0.0068 U
Methyl Acetate	- -	- -	mg/kg	0.0050 U	5.6 U	37 U	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.0084 J	0.0056 U [0.0055 U]	0.0054 U	0.0047 J	0.0068 U
Methyl Ethyl Ketone	100	500	mg/kg	0.0066 J	14 U	93 U	0.020 U	0.82 U	0.015 U	0.025 J	0.036 U	0.024 U [0.014 U]	0.025 U	0.31 J	0.017 U
Methylcyclohexane	- -	- -	mg/kg	0.0047 J	5.6 UJ	37 UJ	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.014 U	0.0056 UJ [0.0055 U]	0.0054 U	0.0070 U	0.0068 U
Methylene Chloride	100	500	mg/kg	0.0050 U	5.6 U	37 U	0.0082 U	0.33 U	0.0017 J	0.0021 J	0.014 U	0.0019 J [0.0014 J]	0.0054 UJ	0.0022 J	0.0015 J
Styrene	- -	- -	mg/kg	0.0050 U	55	37 U	0.0082 U	0.83	0.0062 U	0.0065 U	0.014 U	0.0056 U [0.0055 U]	0.0054 U	0.0070 U	0.0068 U
Toluene	100	500	mg/kg	0.016	**150**	**980**	0.0082 U	2.4	0.00079 J	0.021	0.049	0.0056 U [0.0055 U]	0.0054 U	0.019	0.0024 J
Xylene (total)	100	500	mg/kg	0.024	**390**	**1,100**	0.025 U	3.8	0.019 U	0.0022 J	0.18	0.017 U [0.016 U]	0.016 U	0.021 U	0.021 U
Total BTEX	- -	- -	mg/kg	0.064 J	760	3,400	ND	9.0	0.00079 J	0.035 J	0.34	ND [ND]	ND	0.020 J	0.0024 J
Total VOCs	- -	- -	mg/kg	0.16 J	820 J	3,400	ND	9.8	0.0025 J	0.27 J	0.44 J	0.16 J [0.0014 J]	0.16 J	0.38 J	0.016 J
Detected SVOCs															
1,1'-Biphenyl	- -	- -	mg/kg	0.18 J	400	620	0.47 J	57 J	0.41 U	0.45 J	6.9 J	3.7 U [5.4 U]	0.069 J	2.3 U	6.8 U
2,4-Dimethylphenol	- -	- -	mg/kg	1.1 U	110 J	680	0.23 J	17 J	0.41 U	2.1 U	7.5 U	3.7 U [5.4 U]	0.36 U	2.3 U	6.8 U
2-Methylnaphthalene	- -	- -	mg/kg	0.88 J	3,400 D	4,400 D	1.9	250	0.41 U	2.1 U	1.2 J	0.50 J [0.54 J]	0.094 J	0.27 J	0.95 J
2-Methylphenol	100	500	mg/kg	1.1 U	5.6 J	**480**	0.13 J	4.4 J	0.41 U	2.1 U	7.5 U	3.7 U [5.4 U]	0.36 U	2.3 U	6.8 U
4-Methylphenol	34	500	mg/kg	2.2 U	23 J	**1,400 JD**	0.34 J	8.4 J	0.81 UJ	4.3 U	15 U	7.3 UJ [11 U]	0.72 UJ	4.6 U	14 U
Acenaphthene	100	500	mg/kg	0.49 J	**290**	**520**	0.84 J	**140**	0.41 U	1.7 J	12	0.42 J [5.4 U]	0.21 J	0.55 J	6.8 U
Acenaphthylene	100	500	mg/kg	1.0 J	**2,300 JD**	**1,700 JD**	3.0	**200**	0.072 J	0.58 J	14	3.4 J [4.4 J]	0.062 J	0.25 J	4.1 J
Acetophenone	- -	- -	mg/kg	1.1 U	130 U	9.1 J	1.3 U	59 U	0.41 U	2.1 U	7.5 U	3.7 U [5.4 U]	0.36 U	2.3 U	6.8 U
Anthracene	100	500	mg/kg	4.3 J	**2,600 D**	**3,400 JD**	6.8	**260**	0.081 J	2.2	37	6.3 J [7.4]	0.17 J	1.4 J	6.0 J
Benzaldehyde	- -	- -	mg/kg	1.1 U	130 U	130 U	1.3 U	59 U	0.41 U	2.1 U	7.5 U	3.7 U [5.4 U]	0.065 J	2.3 U	6.8 U
Benzo(a)anthracene	1	5.6	mg/kg	**9.0**	**1,800 JD**	**2,500 JD**	**16**	**210**	0.49 J	**1.9 J**	**22**	**19 [31]**	0.56	**6.4**	**26**
Benzo(a)pyrene	1	1	mg/kg	**9.9**	**900**	**2,300 JD**	**15**	**170**	0.71	**2.2**	**12**	**21 [25]**	0.75	**9.2**	**26**
Benzo(b)fluoranthene	1	5.6	mg/kg	**8.9 J**	**940**	**1,800 EJ**	**15**	**160**	0.61 J	**1.8 J**	**7.8 J**	**21 J [23]**	0.55 J	**6.2**	**26**
Benzo(g,h,i)perylene	100	500	mg/kg	3.9	**310 J**	**560 J**	5.5	68	0.30 J	1.1 J	4.0 J	9.7 J [18 J]	0.29 J	3.0	17
Benzo(k)fluoranthene	3.9	56	mg/kg	**7.6 J**	**440 J**	**630 J**	**14**	**120 J**	0.77 J	2.7	**12 J**	**18 J [21]**	0.63 J	**7.7**	**30**
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	1.3 UJ	130 UJ	130 U	1.9 UJ	59 U	0.70	2.7 UJ	7.5 U	3.7 U [0.65 J]	0.36 U	2.3 UJ	6.8 UJ
Butylbenzyl phthalate	- -	- -	mg/kg	1.1 U	130 U	130 U	1.3 U	59 U	0.41 U	2.1 U	7.5 U	0.29 J [5.4 U]	0.36 U	2.3 U	6.8 U
Carbazole	- -	- -	mg/kg	1.9	740	1,700 JD	2.4	120	0.037 J	2.9	8.1 J	1.1 J [1.6 J]	0.074 J	0.59 J	2.0 J
Chrysene	3.9	56	mg/kg	**7.7**	**1,000**	**2,100 JD**	**13**	**190**	0.51 J	1.8 J	**18**	**18 J [29 J]**	0.51	**5.1**	**25**
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	**2.1**	**140 J**	**230 J**	**2.5**	**32 J**	0.15 J	**0.41 J**	**1.7 J**	**5.2 [4.7 J]**	0.22 J	**1.5 J**	**6.3 J**
Dibenzofuran	59	350	mg/kg	1.4	**2,000 JD**	**2,900 JD**	3.0	**220**	0.41 U	1.1 J	21	1.2 J [1.4 J]	0.12 J	0.28 J	1.4 J

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	MW-4R 2 - 2.5 05/11/06	MW-5R 5 - 6.1 05/09/06	MW-6R 6 - 7.1 05/10/06	MW-7R 2 - 2.4 05/11/06	MW-7R 6 - 6.5 05/11/06	MW-8R 2 - 2.9 05/17/06	MW-9 4 - 4.5 05/12/06	MW-9 6 - 6.4 05/12/06	MW-10R 0 - 1.5 05/17/06	MW-10R 4 - 5 05/17/06	MW-11 4 - 4.6 05/12/06	MW-12R 2 - 2.8 05/12/06
Detected SVOCs (Cont.)															
Di-n-butyl phthalate	- -	- -	mg/kg	0.17 J	8.1 J	6.6 J	0.22 J	3.3 J	0.41 U	0.32 J	0.78 J	3.7 U [5.4 U]	0.36 U	0.31 J	0.95 J
Fluoranthene	100	500	mg/kg	14	**4,600 D**	**7,300 D**	32 D	**550 EJ**	0.61 J	3.6	44	33 [51]	0.63	4.6	49
Fluorene	100	500	mg/kg	1.6	**2,400 JD**	**3,000 JD**	3.4	**240**	0.023 J	3.0	32	1.7 J [1.5 J]	0.14 J	0.46 J	1.9 J
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	**5.3**	**410 J**	**720 J**	**7.2**	**90**	0.36 J	**1.4 J**	**4.8 J**	**12 J [21 J]**	0.38	**4.0**	**22**
Naphthalene	100	500	mg/kg	3.2	**14,000 D**	**25,000 D**	6.4	**920 EJ**	0.41 U	0.55 J	7.1 J	0.93 J [1.3 J]	0.41	0.45 J	2.2 J
Phenanthrene	100	500	mg/kg	13	**7,500 D**	**11,000 D**	25 D	**830 EJ**	0.23 J	4.4	80	15 [21]	0.32 J	2.9	18
Phenol	100	500	mg/kg	1.1 U	130 U	**740**	0.21 J	59 U	0.41 U	2.1 U	7.5 U	3.7 U [5.4 U]	0.36 U	2.3 U	6.8 U
Pyrene	100	500	mg/kg	11	**3,400 D**	**5,300 D**	23 D	**400**	0.67 J	3.2	36	29 [47]	0.54	5.0	38
Total PAHs	- -	- -	mg/kg	100 J	46,000 J	73,000 J	190 J	4,800 J	5.6 J	33 J	350 J	210 J [310 J]	6.5 J	59 J	300 J
Total SVOCs	- -	- -	mg/kg	110 J	50,000 J	81,000 J	200 J	5,300 J	6.3 J	37 J	380 J	220 J [310 J]	6.8 J	60 J	300 J
Detected PCBs															
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides															
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics															
Aluminum	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	400	400	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	72	590	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4.3	9.3	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	270	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	27	mg/kg	3.10 J	22.8 J	**168 J**	9.70 J	1.70 J	1.50	5.70 J	10.3 J	1.10 J [4.60 J]	0.760	5.80 J	**44.6 J**
Cyanide, Free	27	27	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	1,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	2.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	310	310	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	180	1,500	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	10,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Sample Depth (Feet): / Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	TP-1 6 12/08/03	TP-1B 6 12/08/03	TP-2 4 12/08/03	TP-3B 6 12/09/03	TP-4 5 12/09/03	TP-5 1 - 3 05/22/06	TP-5 4.7 - 6.5 05/22/06	TP-6 0 - 2 05/22/06	TP-6 5 - 7 05/22/06
Detected VOCs												
1,1-Dichloroethane	26	240	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
1,2-Dichloropropane	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 UJ	0.0057 UJ
Acetone	100	500	mg/kg	NA	NA	NA	NA	NA	NA	25 UJ	0.015 U	0.014 U
Benzene	4.8	44	mg/kg	0.0040 J	0.0060 J	0.32	0.0060 U	0.14	NA	**180**	0.0059 U	0.0057 U
Carbon Disulfide	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Chloroform	49	350	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Ethylbenzene	41	390	mg/kg	0.0050 J	0.014	0.15	0.0060	0.092	NA	14	0.0059 UJ	0.0057 UJ
Isopropylbenzene	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Methyl Acetate	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Methyl Ethyl Ketone	100	500	mg/kg	NA	NA	NA	NA	NA	NA	25 UJ	0.015 U	0.014 U
Methylcyclohexane	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 UJ	0.0057 UJ
Methylene Chloride	100	500	mg/kg	NA	NA	NA	NA	NA	NA	9.9 U	0.0015 J	0.0016 J
Styrene	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	54	0.0059 U	0.0057 U
Toluene	100	500	mg/kg	0.0030 U	0.0040 U	0.036	0.0060 U	0.31	NA	**210**	0.0059 UJ	0.0057 UJ
Xylene (total)	100	500	mg/kg	0.0090 J	0.014 J	0.35	0.012 J	2.2	NA	**290**	0.018 U	0.017 U
Total BTEX	- -	- -	mg/kg	0.018 J	0.034 J	0.86	0.018 J	2.7	NA	690	ND	ND
Total VOCs	- -	- -	mg/kg	0.018 J	0.034 J	0.86	0.018 J	2.7	NA	750	0.0015 J	0.0016 J
Detected SVOCs												
1,1'-Biphenyl	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	220	1.2 U	0.21 J
2,4-Dimethylphenol	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	150 J	1.2 U	0.21 J
2-Methylnaphthalene	- -	- -	mg/kg	23 U	1.0 J	2.3 J	4.0 U	31	NA	1,600 D	1.2 U	0.42 J
2-Methylphenol	100	500	mg/kg	NA	NA	NA	NA	NA	NA	98 J	1.2 U	1.9 U
4-Methylphenol	34	500	mg/kg	NA	NA	NA	NA	NA	NA	**210 J**	2.3 U	0.33 J
Acenaphthene	100	500	mg/kg	5.1 J	4.8 J	11 J	4.0 U	8.1 J	NA	**170**	1.2 U	0.45 J
Acenaphthylene	100	500	mg/kg	19 J	16	42	1.2 J	32	NA	**900**	1.1 J	8.0
Acetophenone	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	120 U	1.2 U	0.15 J
Anthracene	100	500	mg/kg	40	28	50	1.6 J	72	NA	**810**	0.85 J	7.9
Benzaldehyde	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Benzo(a)anthracene	1	5.6	mg/kg	**120**	**39**	**130 D**	**7.7**	**650 D**	NA	**600**	**4.7**	**37 D**
Benzo(a)pyrene	1	1	mg/kg	**110**	**35**	**120**	**7.6**	**150**	NA	**500**	**5.2**	**33 D**
Benzo(b)fluoranthene	1	5.6	mg/kg	**140**	**33**	**130 D**	**8.7**	**650 D**	NA	**460**	**4.3**	**41 D**
Benzo(g,h,i)perylene	100	500	mg/kg	76	21	73	8.5 J	**460 D**	NA	**210**	3.7	22
Benzo(k)fluoranthene	3.9	56	mg/kg	**79**	**26**	**66**	**5.8**	**69**	NA	**350 J**	**4.9**	**26**
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Butylbenzyl phthalate	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Carbazole	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	450	0.18 J	2.8
Chrysene	3.9	56	mg/kg	**100**	**33**	**110**	**7.8**	**630 D**	NA	**490**	**4.6**	**37 D**
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	**32**	**11**	**38**	**2.7 J**	**62**	NA	**84 J**	**0.64 J**	**8.4**
Dibenzofuran	59	350	mg/kg	NA	NA	NA	NA	NA	NA	**730**	0.087 J	1.5 J

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Sample Depth (Feet): / Date Collected:	Restricted Use SCOs Residential	Restricted Use SCOs Commercial	Units	TP-1 6 12/08/03	TP-1B 6 12/08/03	TP-2 4 12/08/03	TP-3B 6 12/09/03	TP-4 5 12/09/03	TP-5 1 - 3 05/22/06	TP-5 4.7 - 6.5 05/22/06	TP-6 0 - 2 05/22/06	TP-6 5 - 7 05/22/06
Detected SVOCs (Cont.)												
Di-n-butyl phthalate	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Fluoranthene	100	500	mg/kg	**240 D**	68	**230 D**	14	**1,600 D**	NA	**2,300 D**	8.0	65 D
Fluorene	100	500	mg/kg	18 J	20	41	4.0 U	17 J	NA	**750**	0.077 J	1.8 J
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	**100**	**28**	**100**	**10 J**	**590 D**	NA	**250**	**4.1**	**30**
Naphthalene	100	500	mg/kg	6.9 J	4.2 J	18	1.2 J	**150**	NA	**9,300 D**	0.15 J	0.95 J
Phenanthrene	100	500	mg/kg	71	69	**130**	5.1	**1,300 D**	NA	**3,600 D**	2.2	24
Phenol	100	500	mg/kg	NA	NA	NA	NA	NA	NA	**110 J**	1.2 U	0.20 J
Pyrene	100	500	mg/kg	**210 D**	59	**200 D**	14	**1,300 D**	NA	**1,700 D**	7.7	53 D
Total PAHs	- -	- -	mg/kg	1,400 J	500 J	1,500 J	96 J	7,800 J	NA	24,000 J	52 J	400 J
Total SVOCs	- -	- -	mg/kg	1,400 J	500 J	1,500 J	96 J	7,800 J	NA	26,000 J	53 J	400 J
Detected PCBs												
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides												
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics												
Aluminum	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	16	16	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	400	400	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	72	590	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4.3	9.3	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	270	270	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	27	27	mg/kg	17.5 J	14.2 J	**48.3 J**	10.1 J	**8,210 J**	**101**	**28.9**	1.80	**62.7**
Cyanide, Free	27	27	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	400	1,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	2,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.81	2.8	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	310	310	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	180	1,500	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	10,000	10,000	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 2
SUMMARY OF DETECTED SUBSURFACE SOIL ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:
(1) NYSDEC (2006) Soil Cleanup Objectives taken from New York State Brownfield Cleanup Program, Development of Soil Cleanup Objectives, Technical Support Document.
Results reported in milligrams per kilogram (mg/Kg); also expressed as parts per million (ppm).
Bolded values exceeded restricted residential SCO.
Shaded values exceed commercial SCO.
SCO = Soil Cleanup Objective.
NA = Not Analyzed.
-- = Criteria not available.

Data Qualifiers:

Qualifier Type	Lab Qualifiers	Definition
Inorganic	B	Indicates an estimated value between the instrument detection limit (IDL) and the practical quantitation limit (PQL).
Inorganic	J	The associated numerical value is an estimated concentration.
Inorganic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
Organic	B	The compound has been found in the sample as well as its associated blank.
Organic	D	Concentration is based on a diluted sample analysis.
Organic	E	The compound was quantitated above the calibration range.
Organic	J	The associated numerical value is an estimated concentration.
Organic	ND	Not Detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 3
MONITORING WELL CONSTRUCTION DETAILS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID	Date Completed	Well Diameter (in.)	Casing/ Screen Type	Screen Slot Size (in.)	Screen Length (ft.)	Sump Length (ft.)	Depth to Screened Interval		Total Well Depth
							Top	Bottom	ft. bgs
MW-1	12/11/03	2	PVC	0.02	2.0	NS	4.7	6.7	7.0
MW-2	12/11/03	2	PVC	0.02	3.0	NS	3.0	6.0	6.3
MW-2R	10/10/07	2	PVC	0.02	10.0	2.0	40.0	50.0	52.0
MW-3	12/11/03	2	PVC	0.02	2.0	NS	3.0	5.0	5.3
MW-4R	5/25/06	2	PVC	0.02	10.0	2.0	8.0	18.0	20.0
MW-5R	5/23/06	2	PVC	0.02	10.0	2.0	12.4	22.4	24.4
MW-6R	5/22/06	2	PVC	0.02	10.0	2.0	14.3	24.3	26.3
MW-7R	5/25/06	2	PVC	0.02	10.0	2.0	11.0	21.0	23.0
MW-8R	5/24/06	2	PVC	0.02	10.0	2.0	11.0	21.0	23.0
MW-9	5/15/06	2	PVC	0.02	4.0	NS	3.0	7.0	7.3
MW-10R	5/24/06	2	PVC	0.02	10.0	2.0	11.8	21.8	23.8
MW-11	5/15/06	2	PVC	0.02	4.0	NS	3.1	7.1	7.4
MW-12R	5/25/06	2	PVC	0.02	10.0	2.0	10.0	20.0	22.0
MW-13R	10/23/07	2	PVC	0.02	10.0	2.0	48.0	58.0	60.0
MW-14R	10/18/07	2	PVC	0.02	10.0	2.0	39.0	49.0	51.0
MW-15	10/11/07	2	PVC	0.02	5.0	NS	4.5	9.5	9.5
MW-15RS	10/18/07	1	PVC	0.02	10.0	NS	14.0	24.0	24.0
MW-15RD	10/18/07	1	PVC	0.02	10.0	2.0	41.0	51.0	53.0
MW-16R	10/26/07	2	PVC	0.02	10.0	2.0	11.0	21.0	23.0
MW-17R	10/9/08	2	PVC	0.02	10.0	2.0	14.9	24.9	26.9
MW-19R	10/16/08	2	PVC	0.02	10.0	NS	28.5	38.5	38.5
MW-20R	10/16/08	2	PVC	0.02	10.0	NS	18.2	28.2	28.2

Notes:

ft. bgs = feet below ground surface.

MP = Measuring point.

NS = No sump installed at this location.

Depths given in feet below ground surface (ft. bgs).

TABLE 4
SUMMARY OF PACKER TEST GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Sample Depth (Feet): / Date Collected:	NYSDEC TOGS Standards and Guidance Values	Units	MW-2R 12 - 19 10/09/07	MW-2R 19 - 29 10/09/07	MW-2R 29 - 39 10/09/07	MW-13R 19 - 29 10/22/07	MW-13R 29 - 39 10/22/07	MW-13R 39 - 49 10/23/07	MW-13R 49 - 60 10/23/07	MW-14R 9 - 19 10/17/07	MW-14R 29 - 39 10/17/07	MW-14R 39 - 49 10/17/07
VOCs												
Benzene	1	ug/L	**960 [1000]**	**280**	**52**	**2.2**	**100**	**13**	1.0 U	**5.3**	**130 [110]**	**69**
Ethylbenzene	5	ug/L	**65 [72]**	8.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U [4.0 U]	4.0 U
Toluene	5	ug/L	**14 J [15 J]**	**1.2 J**	**1.7 J**	5.0 U	**0.30 J**	**0.40 J**	5.0 U	5.0 U	**0.80 J [0.30 J]**	**1.1 J**
Xylene (total)	5	ug/L	**51 [51]**	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U [5.0 U]	5.0 U
Total BTEX	- -	ug/L	**1100 J [1100 J]**	**280 J**	**54 J**	**2.2**	**100 J**	**13 J**	ND	**5.3**	**130 J [110 J]**	**70 J**
SVOCs												
Acenaphthene	20 {GV}	ug/L	**34 [37]**	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Acenaphthylene	- -	ug/L	**26 [27]**	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Anthracene	50 {GV}	ug/L	**0.90 J [1.0 J]**	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Benzo(a)anthracene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	NA	1.0 UJ
Benzo(a)pyrene	0 {ND}	ug/L	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	NA	1.0 UJ
Benzo(b)fluoranthene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	NA	1.0 UJ
Benzo(g,h,i)perylene	- -	ug/L	10 U [10 U]	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Benzo(k)fluoranthene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	NA	1.0 UJ
Chrysene	0.002 {GV}	ug/L	10 U [10 U]	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Dibenzo(a,h)anthracene	- -	ug/L	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	NA	1.0 UJ
Fluoranthene	50 {GV}	ug/L	10 U [10 U]	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Fluorene	50 {GV}	ug/L	**17 [18]**	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 UJ	NA	1.0 UJ
Naphthalene	10 {GV}	ug/L	**230 [250]**	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Phenanthrene	50 {GV}	ug/L	**9.2 J [11]**	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Pyrene	50 {GV}	ug/L	10 U [10 U]	10 U	10 U	10 U	10 U	12 U	10 U	10 UJ	NA	10 UJ
Total PAHs	- -	ug/L	**320 J [340 J]**	ND	ND	ND	ND	ND	ND	ND	NA	ND
Inorganics												
Cyanide	200	ug/L	**120 [140]**	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	NA	10.0 U

See Notes on Page 4.

TABLE 4
SUMMARY OF PACKER TEST GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	NYSDEC TOGS Standards and Guidance Values	Units	MW-14R 49 - 60 10/18/07	MW-15RD 13 - 19.5 10/12/07	MW-15RD 19.5 - 29.5 10/12/07	MW-15RD 29.5 - 39.5 10/15/07	MW-15RD 39.5 - 49.5 10/15/07	MW-15RD 49.5 - 59.5 10/16/07	MW-16R 9 - 19 10/25/07	MW-16R 39 - 49 10/25/07	MW-16R 49 - 55 10/26/07	MW-19R 11.2 - 19.1 10/01/08	MW-19R 19.1 - 28.7 10/02/08	MW-19R 28.7 - 38.8 10/02/08
VOCs														
Benzene	1	ug/L	**58**	1.0 U	**1500**	**37**	**24**	**1.7**	**0.40 J**	1.0 U	**0.30 J**	**0.30 J**	1.0 U	**0.80 J**
Ethylbenzene	5	ug/L	4.0 U	4.0 U	40 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Toluene	5	ug/L	**0.50 J**	5.0 U	50 U	**0.40 J**	**0.40 J**	**0.30 J**	5.0 U	5.0 U	5.0 U	5.0 U	**3.6 J**	**20**
Xylene (total)	5	ug/L	5.0 U	5.0 U	50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Total BTEX	- -	ug/L	**59 J**	ND	**1500**	**37 J**	**24 J**	**2.0 J**	**0.40 J**	ND	**0.30 J**	**0.30 J**	**3.6 J**	**21 J**
SVOCs														
Acenaphthene	20 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Acenaphthylene	- -	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Anthracene	50 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(a)anthracene	0.002 {GV}	ug/L	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.1 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0 {ND}	ug/L	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.1 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	0.002 {GV}	ug/L	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.1 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	- -	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Benzo(k)fluoranthene	0.002 {GV}	ug/L	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.1 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Chrysene	0.002 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Dibenzo(a,h)anthracene	- -	ug/L	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.1 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Fluoranthene	50 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Fluorene	50 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	1.0 UJ	1.0 U	1.0 UJ	1.1 U	1.1 U	1.0 U	1.2 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U
Naphthalene	10 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Phenanthrene	50 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Pyrene	50 {GV}	ug/L	10 UJ	10 U	10 UJ	11 U	11 U	10 U	12 U	10 U	10 UJ	10 U	10 U	10 U
Total PAHs	- -	ug/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Inorganics														
Cyanide	200	ug/L	10.0 U	10.0 U	**73.0**	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

See Notes on Page 4.

TABLE 4
SUMMARY OF PACKER TEST GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	NYSDEC TOGS Standards and Guidance Values	Units	MW-19R 38.8 - 48 10/03/08	MW-19R 49 - 58.8 10/06/08	MW-19R 58.8 - 68.8 10/07/08	MW-20R 9 - 18.9 10/07/08	MW-20R 18.9 - 29 10/08/08	MW-20R 29 - 38.5 10/08/08	MW-20R 38.5 - 48.9 10/08/08	MW-20R 48.9 - 58.9 10/09/08	MW-20R 58.9 - 63.5 10/09/08
VOCs											
Benzene	1	ug/L	**1.7**	**1.3**	**0.30 J**	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	5	ug/L	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	1.0 U	1.0 U
Toluene	5	ug/L	**2.3 J**	**1.0 J**	**2.4 J**	5.0 U	**1.0 J**	5.0 U	5.0 U	**1.3**	1.0 U
Xylene (total)	5	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Total BTEX	- -	ug/L	**4.0 J**	**2.3 J**	**2.7 J**	ND	**1.0 J**	ND	ND	**1.3**	ND
SVOCs											
Acenaphthene	20 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Acenaphthylene	- -	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Anthracene	50 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Benzo(a)anthracene	0.002 {GV}	ug/L	NA	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U
Benzo(a)pyrene	0 {ND}	ug/L	NA	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U
Benzo(b)fluoranthene	0.002 {GV}	ug/L	NA	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	- -	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Benzo(k)fluoranthene	0.002 {GV}	ug/L	NA	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U
Chrysene	0.002 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Dibenzo(a,h)anthracene	- -	ug/L	NA	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U
Fluoranthene	50 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Fluorene	50 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	NA	1.0 U	1.4 U	1.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U
Naphthalene	10 {GV}	ug/L	NA	10 U	**1.8 J**	10 U	10 U	10 U	12 U	10 U	10 U
Phenanthrene	50 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Pyrene	50 {GV}	ug/L	NA	10 U	14 U	10 U	10 U	10 U	12 U	10 U	10 U
Total PAHs	- -	ug/L	NA	ND	**1.8 J**	ND	ND	ND	ND	ND	ND
Inorganics											
Cyanide	200	ug/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U

See Notes on Page 4.

TABLE 4
SUMMARY OF PACKER TEST GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

Results reported in micrograms per liter (ug/L); also expressed as parts per billion (ppb).

NYSDEC Technical and Operation Guidance Series No. 1.1.1 Standards and Guidance Values (June 1998).

Bolded values are detected.

Shaded values exceed the NYSDEC TOGS.

NA = Not Analyzed.

Data Qualifiers:

Qualifier Type	Lab Qualifiers	Definition
Inorganic	U	The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
Organic	J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
Organic	ND	Not Detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 5
GROUNDWATER AND SURFACE WATER ELEVATIONS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Well ID	Ref. Point Elevation (ft AMSL)	Depth to Water (ft below measuring point)							Groundwater Elevation (ft AMSL)						
		12/30/2003	6/12/2006	10/2/2006	8/8/2007	11/26/2007	11/20/2008	2/3/2009	12/30/2003	6/12/2006	10/2/2006	8/8/2007	11/26/2007	11/20/2008	2/3/2009
MW-1	262.50	5.97	NA	5.98	6.22	6.02	6.04	6.07	256.53	NA	256.52	256.28	256.48	256.46	256.43
MW-2R	259.07					0.11	-1.94	-0.17					258.96	261.01	259.24
MW-2	259.56	2.99	NA	3.69	4.38	3.53	3.18	3.9	256.57	NA	255.87	255.18	256.03	256.38	255.66
MW-3	261.32	3.78	NA	4.04	dry	3.99	3.97	4.81	257.54	NA	257.28	<256.02	257.33	257.35	256.51
MW-4R	263.15		10.89	12.18	12.20	9.9	8.93	10.92		252.26	250.97	250.95	253.25	254.22	252.23
MW-5R	259.19		1.23	2.84	3.64	2.29	1.71	1.65		257.96	256.35	255.55	256.90	257.48	257.54
MW-6R	258.83		12.08	2.77	3.69	1.47	0.15	1.35		246.75	256.06	255.14	257.36	258.68	257.48
MW-7R	258.76		0.55	1.89	2.61	1.18	0.22	0.49		258.21	256.87	256.15	257.58	258.54	258.27
MW-8R	256.97		artesian	0.93	2.18	0.7	0.27	1.94		NA	256.04	254.79	256.27	256.70	255.03
MW-9	256.78		4.71	4.64	4.79	4.77	4.73	4.72		252.07	252.14	251.99	252.01	252.05	252.06
MW-10R	257.23		artesian	1.57	2.36	0.85	-0.09	Ice/Snow		NA	255.66	254.87	256.38	257.32	NA
MW-11	258.89		2.21	2.12	3.26	2.11	2.08	3.1		256.68	256.77	255.63	256.78	256.81	255.79
MW-12R	260.49		7.60	8.82	9.42	7.62	6.2	8.06		252.89	251.67	251.07	252.87	254.29	252.43
MW-13R	272.87					13.98	12.41	Frozen					258.89	260.46	NA
MW-14R	255.77					-3.69	-5.69	-4.98					259.46	261.46	260.75
MW-15	257.35					7.2	7.19	8.07					250.15	250.16	249.28
MW-15RI	257.3					6	5.79	6.29					251.30	251.51	251.01
MW-15RD	257.3					-1.32	-2.53	-1.91					258.62	259.83	259.21
MW-16R	264.76					8.44	7.9	8.93					256.32	256.86	255.83
MW-17R	257.74						5.18	6.06						252.56	251.68
MW-19R	255.52						-0.09	0.15						255.61	255.37
MW-20R	251.86						-8.22	-7.76						260.08	259.62
PZ-1	263.54		6.50	6.55	6.79	6.53	6.51	6.78		257.04	256.99	256.75	257.01	257.03	256.76
Oswegatchie River at Lake Street Bridge	260.85					17.7							243.15		

Notes:
AMSL = above mean sea level.
Reference point for all wells is the top of inner casing, referenced to NAD 1988.
NA = Not available.
MW-12R buried under soil on 11/26/07 and measured on 11/27/07.

TABLE 6
SUMMARY OF SOIL VAPOR INVESTIGATION RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	Units	VP-1 01/24/06	VP-2 01/24/06	VP-1A 03/28/07	VP-3 03/28/07	AA-1 03/28/07	AA-2 03/28/07	AA-3 03/28/07	IA-1 03/28/07	IA-2 03/28/07	SV-1 12/16/08	SV-2 12/16/08	SV-3 12/16/08	AMBIENT-1 12/16/08
VOCs														
1,1,1-Trichloroethane	ug/m3	2.2 U [2.2 U]	1.1 U	NA	NA	NA	NA	NA	NA	NA	0.46 J	20 UJ	1.5 J [1.5 J]	1.1 U
1,1,2,2-Tetrachloroethane	ug/m3	2.7 U [2.7 U]	1.4 U	NA	NA	NA	NA	NA	NA	NA	1.4 U	25 UJ	1.4 UJ [1.4 UJ]	1.4 U
1,1,2-Trichloroethane	ug/m3	2.2 U [2.2 U]	1.1 U	NA	NA	NA	NA	NA	NA	NA	1.1 U	20 UJ	1.1 UJ [1.1 UJ]	1.1 U
1,1-Dichloroethane	ug/m3	1.6 U [1.6 U]	0.81 U	NA	NA	NA	NA	NA	NA	NA	0.81 U	15 UJ	0.81 UJ [0.81 UJ]	0.81 U
1,1-Dichloroethene	ug/m3	1.6 U [1.6 U]	0.79 U	NA	NA	NA	NA	NA	NA	NA	0.79 U	14 UJ	0.79 UJ [0.79 UJ]	0.79 U
1,2,3-Trimethylbenzene	ug/m3	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.98 U	18 UJ	0.98 UJ [0.98 UJ]	0.98 U
1,2,4,5-Tetramethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1,2,4-Trichlorobenzene	ug/m3	7.4 U [7.4 U]	3.7 U	NA	NA	NA	NA	NA	NA	NA	7.4 U	130 UJ	7.4 UJ [7.4 UJ]	7.4 U
1,2,4-Trimethylbenzene	ug/m3	7.4 [6.9]	11	6.4	3.0 J [2.3 J]	0.49 U	0.49 U	0.13 J	0.62	0.81	3.0	18 UJ	5.4 J [4.3 J]	0.98 U
1,2-Dibromoethane	ug/m3	3.1 U [3.1 U]	1.5 U	5.2 U	5.2 U [7.6 U]	0.77 U	0.77 U	0.77 U	0.77 U	0.77 U	1.5 U	28 UJ	1.5 UJ [1.5 UJ]	1.5 U
1,2-Dichlorobenzene	ug/m3	2.4 U [2.4 U]	1.2 U	NA	NA	NA	NA	NA	NA	NA	1.2 U	22 UJ	1.2 UJ [1.2 UJ]	1.2 U
1,2-Dichloroethane	ug/m3	1.6 U [1.6 U]	0.81 U	2.8 U	2.7 U [4.0 U]	0.40 U	0.40 U	0.40 U	0.38 J	0.42	0.81 U	15 UJ	0.81 UJ [0.81 UJ]	0.81 U
1,2-Dichloroethene (total)	ug/m3	1.6 U [1.6 U]	0.79 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	ug/m3	1.8 U [1.8 U]	0.92 U	NA	NA	NA	NA	NA	NA	NA	0.92 U	17 UJ	0.92 UJ [0.92 UJ]	0.92 U
1,2-Dichlorotetrafluoroethane	ug/m3	2.8 U [2.8 U]	1.4 U	NA	NA	NA	NA	NA	NA	NA	1.4 U	25 UJ	1.4 UJ [1.4 UJ]	1.4 U
1,2-Diethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1,2-Dimethyl-3-ethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1,2-Dimethyl-4-ethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.14 J	NA	NA	NA	NA
1,3,5-Trimethylbenzene	ug/m3	2.3 [2.4]	3.6	1.5 J	1.3 J [4.9 U]	0.49 U	0.49 U	0.49 U	0.16 J	0.20 J	0.77 J	18 UJ	1.6 J [1.1 J]	0.98 U
1,3-Butadiene	ug/m3	2.4 [2.4]	2.0	1.5 U	1.5 U [2.2 U]	0.22 U	0.22 U	0.22 U	2.4	3.3	0.88 U	16 UJ	0.88 UJ [0.88 UJ]	0.88 U
1,3-Dichlorobenzene	ug/m3	2.4 U [2.4 U]	1.2 U	NA	NA	NA	NA	NA	NA	NA	1.2 U	22 UJ	1.2 UJ [1.2 UJ]	1.2 U
1,3-Dimethyl-2-ethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1,3-Dimethyl-4-ethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1,3-Dimethyl-5-ethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.15 J	0.18 J	NA	NA	NA	NA
1,4-Dichlorobenzene	ug/m3	2.4 U [2.4 U]	1.2 U	NA	NA	NA	NA	NA	NA	NA	1.2 U	22 UJ	1.2 UJ [1.2 UJ]	1.2 U
1,4-Dimethyl-2-ethylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1,4-Dioxane	ug/m3	36 U [36 U]	18 U	NA	NA	NA	NA	NA	NA	NA	1.8 U	33 UJ	1.8 UJ [1.8 UJ]	1.8 U
1-Decene	ug/m3	NA	NA	3.9 U	3.9 U [6.1]	0.57 U	0.57 U	0.57 U	0.43 J	0.55 J	NA	NA	NA	NA
1-Ethyl-1-methylcyclopentane	ug/m3	NA	NA	3.1 U	3.1 U [4.6 U]	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	NA	NA	NA	NA
1-Heptene/1,2-DMCP (trans)	ug/m3	NA	NA	2.7 U	2.7 U [4.0 U]	0.40 U	0.40 U	0.40 U	0.29 J	0.33 J	NA	NA	NA	NA
1-Hexene	ug/m3	NA	NA	5.8	4.2 [4.1]	0.34 U	0.34 U	0.34 U	0.50	0.64	NA	NA	NA	NA
1-Methyl-2-ethylbenzene	ug/m3	NA	NA	1.3 J	0.86 J [4.9 U]	0.49 U	0.49 U	0.49 U	0.19 J	0.24 J	NA	NA	NA	NA
1-Methyl-2-isopropylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1-Methyl-2-propylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1-Methyl-3-ethylbenzene	ug/m3	NA	NA	4.3	1.3 J [4.9 U]	0.49 U	0.49 U	0.49 U	0.43 J	0.53	NA	NA	NA	NA
1-Methyl-3-isopropylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1-Methyl-3-propylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1-Methyl-4-propylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
1-Methylnaphthalene	ug/m3	NA	NA	4.0 U	3.9 U [5.8 U]	0.37 J	0.58 U	0.28 J	0.21 J	0.22 J	15 U	260 UJ	15 UJ [15 UJ]	15 U
1-Nonene	ug/m3	NA	NA	3.5 U	3.5 U [3.1 J]	0.52 U	0.52 U	0.52 U	0.52 U	0.52 U	NA	NA	NA	NA

See Notes on Page 5.

TABLE 6
SUMMARY OF SOIL VAPOR INVESTIGATION RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	Units	VP-1 01/24/06	VP-2 01/24/06	VP-1A 03/28/07	VP-3 03/28/07	AA-1 03/28/07	AA-2 03/28/07	AA-3 03/28/07	IA-1 03/28/07	IA-2 03/28/07	SV-1 12/16/08	SV-2 12/16/08	SV-3 12/16/08	AMBIENT-1 12/16/08
VOCs (continued)														
1-Octene	ug/m3	NA	NA	4.6	4.9 [3.6 J]	0.46 U	0.46 U	0.46 U	0.17 J	0.20 J	NA	NA	NA	NA
1-Pentene	ug/m3	NA	NA	5.9	4.4 [3.5]	0.29 U	0.29 U	0.29 U	0.38	0.57	NA	NA	NA	NA
2,2,4-Trimethylpentane	ug/m3	260 [260]	0.93 U	1,900 D	880 [820]	0.47 U	0.47 U	0.35 J	0.28 J	0.21 J	0.74 J	42 UJ	2.3 UJ [2.3 UJ]	2.3 U
2,2-Dimethylpentane	ug/m3	NA	NA	2.8 U	2.8 U [4.1 U]	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	NA	NA	NA	NA
2,3,3-Trimethylpentane	ug/m3	NA	NA	230	140 [120]	0.47 U	0.47 U	0.47 U	0.25 J	0.25 J	NA	NA	NA	NA
2,3,4-Trimethylpentane	ug/m3	NA	NA	180	110 [89]	0.47 U	0.47 U	0.47 U	0.16 J	0.13 J	NA	NA	NA	NA
2,3-Dimethylbutane	ug/m3	NA	NA	2.4 U	2.4 U [3.5 U]	0.35 U	0.35 U	0.35 U	0.18 J	0.21 J	NA	NA	NA	NA
2,3-Dimethylhexane	ug/m3	NA	NA	9.4	6.0 [4.6 J]	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	NA	NA	NA	NA
2,3-Dimethylpentane	ug/m3	NA	NA	21	8.5 [8.6]	0.41 U	0.41 U	0.41 U	0.11 J	0.10 J	NA	NA	NA	NA
2,4-Dimethylhexane	ug/m3	NA	NA	120	66 [54]	0.93 U	0.93 U	0.93 U	0.93 U	0.93 U	NA	NA	NA	NA
2,4-Dimethylpentane	ug/m3	NA	NA	2.8 U	2.8 U [4.1 U]	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	NA	NA	NA	NA
2,5-Dimethylhexane	ug/m3	NA	NA	28	16 [12]	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	NA	NA	NA	NA
2-Chlorotoluene	ug/m3	2.1 U [2.1 U]	1.0 U	NA	NA	NA	NA	NA	NA	NA	2.1 U	38 UJ	2.1 UJ [2.1 UJ]	2.1 U
2-Ethylthiophene	ug/m3	NA	NA	3.1 U	3.1 U [4.6 U]	0.46 U	0.46 U	0.46 U	0.46 U	0.46 U	NA	NA	NA	NA
2-Methyl-1-butene	ug/m3	NA	NA	1.5 J	0.85 J [1.3 J]	0.29 U	0.29 U	0.29 U	0.63	0.76	NA	NA	NA	NA
2-Methylheptane	ug/m3	NA	NA	0.83 J	3.2 U [4.6 U]	0.47 U	0.47 U	0.47 U	0.25 J	0.15 J	NA	NA	NA	NA
2-Methylhexane	ug/m3	NA	NA	2.8 U	2.8 U [8.6]	0.11 J	0.12 J	0.12 J	1.3	0.29 J	NA	NA	NA	NA
2-Methylnaphthalene	ug/m3	NA	NA	4.0 U	3.9 U [5.8 U]	0.27 J	0.58 U	0.23 J	0.17 J	0.24 J	15 U	260 UJ	15 UJ [15 UJ]	15 U
2-Methylpentane	ug/m3	NA	NA	2.4 U	0.86 J [3.5 U]	0.27 J	0.33 J	0.31 J	0.74	0.17 J	NA	NA	NA	NA
2-Methylthiophene	ug/m3	NA	NA	2.7 U	2.7 U [4.0 U]	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	NA	NA	NA	NA
2-Pentene (cis)	ug/m3	NA	NA	0.84 J	0.60 J [2.9 U]	0.29 U	0.29 U	0.29 U	0.27 J	0.30	NA	NA	NA	NA
2-Pentene (trans)	ug/m3	NA	NA	2.2	1.5 J [1.5 J]	0.29 U	0.29 U	0.29 U	0.47	0.54	NA	NA	NA	NA
3-Chloropropene	ug/m3	3.1 U [3.1 U]	1.6 U	NA	NA	NA	NA	NA	NA	NA	0.63 U	11 UJ	0.63 UJ [0.63 UJ]	0.63 U
3-Ethylhexane	ug/m3	NA	NA	0.99 J	3.2 U [4.6 U]	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	NA	NA	NA	NA
3-Methylheptane	ug/m3	NA	NA	2.5 J	1.8 J [1.3 J]	0.47 U	0.47 U	0.47 U	0.47 U	0.47 U	NA	NA	NA	NA
3-Methylhexane	ug/m3	NA	NA	3.3	5.1 [4.1]	0.41 U	0.15 J	0.15 J	0.36 J	0.37 J	NA	NA	NA	NA
3-Methylpentane	ug/m3	NA	NA	2.4 U	0.74 J [3.5 U]	0.11 J	0.14 J	0.12 J	0.41	0.38	NA	NA	NA	NA
3-Methylthiophene	ug/m3	NA	NA	2.7 U	2.7 U [4.0 U]	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	NA	NA	NA	NA
4-Ethyltoluene	ug/m3	5.9 [5.4]	8.4	2.2 J	3.3 U [4.9 U]	0.49 U	0.49 U	0.49 U	0.19 J	0.20 J	0.85 J	36 UJ	2.0 UJ [2.0 UJ]	2.0 U
Acetone	ug/m3	33 [40]	12 U	NA	NA	NA	NA	NA	NA	NA	120 J	74 J	110 J [91 J]	20 J
Benzene	ug/m3	3.2 [2.9]	2.0	1.5 J	8.3 [7.8]	0.50	0.52	0.50	2.0	2.2	3.0	12 UJ	4.6 J [4.0 J]	0.60 J
Benzothiophene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
Benzyl Chloride	ug/m3	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.1 U	38 UJ	2.1 UJ [2.1 UJ]	2.1 U
Bromodichloromethane	ug/m3	2.7 U [2.7 U]	1.3 U	NA	NA	NA	NA	NA	NA	NA	1.3 U	24 UJ	1.3 UJ [1.3 UJ]	1.3 U
Bromoethene	ug/m3	1.7 U [1.7 U]	0.87 U	NA	NA	NA	NA	NA	NA	NA	0.87 U	16 UJ	0.87 UJ [0.87 UJ]	0.87 U
Bromoform	ug/m3	4.1 U [4.1 U]	2.1 U	NA	NA	NA	NA	NA	NA	NA	2.1 U	38 UJ	2.1 UJ [2.1 UJ]	2.1 U
Bromomethane	ug/m3	1.6 U [1.6 U]	0.78 U	NA	NA	NA	NA	NA	NA	NA	0.78 U	14 UJ	0.78 UJ [0.78 UJ]	0.78 U
Carbon Disulfide	ug/m3	3.1 U [3.1 U]	1.6 U	NA	NA	NA	NA	NA	NA	NA	0.21 J	5.6 J	0.85 J [0.72 J]	0.32 J
Carbon Tetrachloride	ug/m3	2.5 U [2.5 U]	1.3 U	NA	NA	NA	NA	NA	NA	NA	0.37 J	23 UJ	1.2 J [0.37 J]	0.40 J
Chlorobenzene	ug/m3	1.8 U [1.8 U]	0.92 U	NA	NA	NA	NA	NA	NA	NA	0.92 U	17 UJ	0.92 UJ [0.92 UJ]	0.92 U

See Notes on Page 5.

TABLE 6
SUMMARY OF SOIL VAPOR INVESTIGATION RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Date Collected:	Units	VP-1 01/24/06	VP-2 01/24/06	VP-1A 03/28/07	VP-3 03/28/07	AA-1 03/28/07	AA-2 03/28/07	AA-3 03/28/07	IA-1 03/28/07	IA-2 03/28/07	SV-1 12/16/08	SV-2 12/16/08	SV-3 12/16/08	AMBIENT-1 12/16/08
VOCs (continued)														
Chloroethane	ug/m3	2.6 U [2.6 U]	1.3 U	NA	NA	NA	NA	NA	NA	NA	0.53 U	9.6 UJ	0.53 UJ [0.53 UJ]	0.53 U
Chloroform	ug/m3	2.0 U [2.0 U]	0.98 U	NA	NA	NA	NA	NA	NA	NA	1.0	18 UJ	1.4 J [0.98 UJ]	0.98 U
Chloromethane	ug/m3	2.1 U [2.1 U]	1.8	NA	NA	NA	NA	NA	NA	NA	1.1 J	19 UJ	4.7 J [1.0 UJ]	1.1 J
cis-1,2-Dichloroethene	ug/m3	1.6 U [1.6 U]	0.79 U	NA	NA	NA	NA	NA	NA	NA	0.79 U	14 UJ	4.2 J [4.2 J]	0.79 U
cis-1,3-Dichloropropene	ug/m3	1.8 U [1.8 U]	0.91 U	NA	NA	NA	NA	NA	NA	NA	0.91 U	17 UJ	0.91 UJ [0.91 UJ]	0.91 U
Cyclohexane	ug/m3	12 [12]	0.69 U	2.4 U	0.60 J [3.4 U]	0.34 U	0.34 U	0.34 U	0.11 J	0.13 J	2.3	31 UJ	1.7 UJ [1.7 UJ]	1.3 J
Cyclopentane	ug/m3	NA	NA	2.0 U	1.9 U [2.9 U]	0.29 U	0.29 U	0.29 U	0.19 J	0.15 J	NA	NA	NA	NA
Dibromochloromethane	ug/m3	3.4 U [3.4 U]	1.7 U	NA	NA	NA	NA	NA	NA	NA	1.7 U	31 UJ	1.7 UJ [1.7 UJ]	1.7 U
Dichlorodifluoromethane	ug/m3	5.9 J [5.9 J]	5.4 J	NA	NA	NA	NA	NA	NA	NA	620 DJ	14 J	2.1 J [1.9 J]	2.2 J
Diisopropyl Ether (DIPE)	ug/m3	NA	NA	2.9 U	2.8 U [4.2 U]	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	NA	NA	NA	NA
Ethyl Tertiary Butyl Ether (ETBE)	ug/m3	NA	NA	2.9 U	2.8 U [4.2 U]	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	NA	NA	NA	NA
Ethylbenzene	ug/m3	4.8 [4.8]	5.6	9.0	8.6 [6.6]	0.11 J	0.43 U	0.11 J	0.60	0.74	2.4	16 UJ	5.1 J [3.4 J]	0.87 U
Freon TF	ug/m3	3.1 U [3.1 U]	1.5 U	NA	NA	NA	NA	NA	NA	NA	0.43 J	28 UJ	0.58 J [0.54 J]	0.52 J
Hexachlorobutadiene	ug/m3	4.3 U [4.3 U]	2.1 U	NA	NA	NA	NA	NA	NA	NA	11 U	190 UJ	11 UJ [11 UJ]	11 U
Indane	ug/m3	NA	NA	1.8 J	3.3 U [4.8 U]	0.48 U	0.48 U	0.48 U	0.22 J	0.23 J	0.97 U	18 UJ	0.97 UJ [0.97 UJ]	0.97 U
Indene	ug/m3	NA	NA	3.2 U	3.2 U [4.7 U]	0.48 U	0.48 U	0.48 U	0.15 J	0.48 U	1.9 U	35 UJ	1.9 UJ [1.9 UJ]	1.9 U
Isopentane	ug/m3	NA	NA	2.0 U	2.0 U [2.9 U]	0.70	1.0	0.30 U	12	11	NA	NA	NA	NA
Isopropyl Alcohol	ug/m3	25 U [25 U]	12 U	NA	NA	NA	NA	NA	NA	NA	3.8 J	89 UJ	4.9 UJ [4.9 UJ]	1.1 J
Isopropylbenzene	ug/m3	NA	NA	3.4 U	3.3 U [4.9 U]	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	NA	NA	NA	NA
m&p-Xylene	ug/m3	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.4	16 UJ	17 J [11 J]	0.87 U
Methyl Butyl Ketone	ug/m3	5.7 J [5.7 J]	2.0 UJ	NA	NA	NA	NA	NA	NA	NA	2.0 U	37 UJ	1.9 J [1.6 J]	0.38 J
Methyl Ethyl Ketone	ug/m3	8.0 [7.4]	1.5 U	NA	NA	NA	NA	NA	NA	NA	15	54 UJ	2.9 UJ [2.9 UJ]	3.2
Methyl Isobutyl Ketone	ug/m3	4.1 U [4.1 U]	2.0 U	NA	NA	NA	NA	NA	NA	NA	0.56 J	37 UJ	0.95 J [0.86 J]	0.38 J
Methylcyclohexane	ug/m3	NA	NA	2.7 U	0.78 J [4.0 U]	0.40 U	0.40 U	0.40 U	0.40 U	0.10 J	NA	NA	NA	NA
Methylcyclopentane	ug/m3	NA	NA	2.4 U	2.3 U [3.4 U]	0.34 U	0.34 U	0.11 J	0.24 J	0.24 J	NA	NA	NA	NA
Methylene Chloride	ug/m3	3.5 U [3.5 U]	1.7 U	NA	NA	NA	NA	NA	NA	NA	7.1	15 J	1.7 UBJ [2.4 J]	3.2
Methyl-tert-butyl ether	ug/m3	3.6 U [3.6 U]	1.8 U	2.5 U	2.4 U [3.6 U]	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	3.6 U	66 UJ	3.6 UJ [3.6 UJ]	3.6 U
MMT	ug/m3	NA	NA	6.1 U	6.0 U [8.9 U]	0.89 U	0.89 U	0.89 U	0.89 U	0.89 U	NA	NA	NA	NA
Naphthalene	ug/m3	5.2 UJ [5.2 UJ]	3.3 J	3.6 U	3.5 U [5.2 U]	0.19 J	0.52 U	0.52 U	0.35 J	0.29 J	2.6 U	48 UJ	2.6 UJ [0.48 J]	2.6 U
n-Butane	ug/m3	NA	NA	NA	NA	NA	NA	NA	NA	NA	18	48,000 DJ	380 DJ [390 DJ]	1.6
n-Butylbenzene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.55 U	0.55 U	NA	NA	NA	NA
n-Decane	ug/m3	NA	NA	28	9.2 [5.4 J]	0.58 U	0.58 U	0.58 U	0.41 J	0.42 J	3.1 J	9.5 J	8.6 J [5.5 J]	5.8 U
n-Dodecane	ug/m3	NA	NA	1.2 J	3.6 J [4.9 J]	0.68 J	0.17 J	0.37 J	2.9	3.0	0.61 J	130 UJ	7.0 UJ [1.4 J]	7.0 U
n-Heptane	ug/m3	1.6 U [1.6 U]	2.0	3.1	2.5 J [2.1 J]	0.12 J	0.12 J	0.12 J	0.33 J	0.34 J	2.7	1,700 J	85 J [94 J]	0.66 J
n-Hexane	ug/m3	3.5 [3.5]	2.3	1.9 J	1.4 J [1.6 J]	0.29 J	0.24 J	0.35 J	0.61	1.2	3.7	11,000 DJ	330 DJ [380 DJ]	0.49 J
n-Nonane	ug/m3	NA	NA	3.6	7.0 [5.0 J]	0.52 U	0.52 U	0.52 U	0.30 J	0.29 J	0.30 J	50 J	1.4 J [1.7 J]	2.6 U
n-Octane	ug/m3	NA	NA	3.4	3.1 J [2.5 J]	0.13 J	0.47 U	0.47 U	0.21 J	0.19 J	0.39 J	310 J	9.0 J [10 J]	1.9 U
n-Propylbenzene	ug/m3	NA	NA	1.3 J	3.3 U [4.9 U]	0.49 U	0.49 U	0.49 U	0.13 J	0.14 J	NA	NA	NA	NA
n-Undecane	ug/m3	NA	NA	22	27 [20]	0.21 J	0.64 U	0.64 U	4.8	5.5	2.9 J	120 UJ	5.4 J [4.9 J]	6.4 U
Pentane	ug/m3	NA	NA	3.9	4.2 [5.1]	0.32	0.43	0.37	2.5	2.3	7.8	26,000 DJ	550 DJ [600 DJ]	0.70 J

See Notes on Page 5.

TABLE 6
SUMMARY OF SOIL VAPOR INVESTIGATION RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Date Collected:	Units	VP-1 01/24/06	VP-2 01/24/06	VP-1A 03/28/07	VP-3 03/28/07	AA-1 03/28/07	AA-2 03/28/07	AA-3 03/28/07	IA-1 03/28/07	IA-2 03/28/07	SV-1 12/16/08	SV-2 12/16/08	SV-3 12/16/08	AMBIENT-1 12/16/08
VOCs (continued)														
Pentylbenzene	ug/m3	NA	NA	4.1 U	4.1 U [6.0 U]	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U	NA	NA	NA	NA
p-Isopropyltoluene	ug/m3	NA	NA	3.7 U	3.7 U [5.5 U]	0.55 U	0.55 U	0.55 U	0.35 J	0.40 J	NA	NA	NA	NA
sec-Butylbenzene	ug/m3	NA	NA	3.4 U	3.3 U [4.9 U]	0.49 U	0.49 U	0.49 U	0.49 U	0.49 U	NA	NA	NA	NA
Styrene	ug/m3	1.7 U [1.7 U]	1.6	2.1 J	4.9 [3.7 J]	0.43 U	0.43 U	0.43 U	0.45	0.63	0.85 U	15 UJ	0.85 UJ [0.85 UJ]	0.85 U
TAME	ug/m3	NA	NA	2.9 U	2.8 U [4.2 U]	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	NA	NA	NA	NA
tert-Butyl Alcohol	ug/m3	30 U [30 U]	15 U	2.1 U	2.0 U [3.0 U]	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	2.5 J	2.7 J	3.5 J [2.7 J]	2.1 J
Tetrachloroethene	ug/m3	2.7 U [2.7 U]	2.5	NA	NA	NA	NA	NA	NA	NA	1.4 U	25 UJ	1.4 UJ [1.4 UJ]	1.4 U
Tetrahydrofuran	ug/m3	29 U [29 U]	15 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thiophene	ug/m3	NA	NA	2.4 U	2.3 U [3.4 U]	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.69 U	13 UJ	0.69 UJ [0.69 UJ]	0.69 U
Toluene	ug/m3	11 [11]	12	22	17 [13]	0.54	0.53	0.57	6.1	7.2	14	12 J	20 J [15 J]	0.95
trans-1,2-Dichloroethene	ug/m3	1.6 U [1.6 U]	0.79 U	NA	NA	NA	NA	NA	NA	NA	0.79 U	14 UJ	0.79 UJ [0.79 UJ]	0.79 U
trans-1,3-Dichloropropene	ug/m3	1.8 U [1.8 U]	0.91 U	NA	NA	NA	NA	NA	NA	NA	0.91 U	17 UJ	0.91 UJ [0.91 UJ]	0.91 U
Trichloroethene	ug/m3	2.1 U [2.1 U]	1.1 U	NA	NA	NA	NA	NA	NA	NA	1.1 U	20 UJ	5.4 J [5.4 J]	1.1 U
Trichlorofluoromethane	ug/m3	2.6 [2.4]	2.5	NA	NA	NA	NA	NA	NA	NA	1.8	20 UJ	1.1 J [1.1 J]	1.1
Tridecane	ug/m3	NA	NA	3.0 J	5.8 [7.5]	0.68 J	0.43 J	1.6	1.5	2.0	NA	NA	NA	NA
Vinyl Chloride	ug/m3	1.0 U [1.0 U]	0.51 U	NA	NA	NA	NA	NA	NA	NA	0.51 U	9.3 UJ	0.51 UJ [0.51 UJ]	0.51 U
Xylene (m,p)	ug/m3	16 [17]	20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (o)	ug/m3	4.8 [5.2]	6.1	5.0	0.85 J [4.3 U]	0.14 J	0.11 J	0.14 J	0.61	0.75	3.3	16 UJ	6.7 J [4.5 J]	0.87 U
Xylene (total)	ug/m3	20 [21]	25	16	3.1 [2.6 J]	0.31 J	0.28 J	0.32 J	1.8	2.4	NA	NA	NA	NA

See Notes on Page 5.

TABLE 6
SUMMARY OF SOIL VAPOR INVESTIGATION RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:
Results reported in micrograms per cubic meter (ug/m3).
NA = Not Analyzed.

Data Qualifiers:

Lab Qualifiers	Definition
D	Concentration is based on a diluted sample analysis.
J	The associated numerical value is an estimated concentration.
U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
B	The compound has been found in the sample as well as its associated blank.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	GW-1 (Durham Basement) 03/28/07	MW-1 12/30/03	MW-1 11/29/07	MW-2 12/30/03	MW-2 11/27/07	MW-2R 11/27/07	MW-2R 03/21/08	MW-3 12/30/03	MW-3 07/25/07	MW-4R 06/12/06	MW-4R 11/27/07	MW-5R 06/13/06
VOCs														
1,1-Dichloroethane	5	ug/L	NA	5.0 U	1.0 U	5.0 U [5.0 U]	1.0 U	1.0 U	5.0 U	250 U	40 U	5.0 U	1.0 U	5.0 U
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	**65 J**	NA	NA	NA
1,2-Dichloroethane	0.6	ug/L	NA	5.0 U	1.0 U	5.0 U [5.0 U]	1.0 U	1.0 U	2.0 U	250 U	40 U	5.0 U	1.0 U	5.0 U
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	**40 J**	NA	NA	NA
Acetone	50 {GV}	ug/L	NA	**16**	1.0 U	13 U [13 U]	1.0 U	1.0 U	5.0 U	630 U	**68 J**	13 U	1.0 U	13 U
Benzene	1	ug/L	NA	**42**	**13**	**12 [4.0 J]**	**2.4**	1.0 U	1.0 U	**630**	**440**	5.0 U	1.0 U	**210 D**
Carbon Disulfide	60	ug/L	NA	5.0 U	1.0 U	5.0 U [5.0 U]	1.0 U	1.0 U	5.0 U	250 U	40 U	5.0 UJ	1.0 U	5.0 UJ
Chloroform	7	ug/L	NA	5.0 U	1.0 U	5.0 U [5.0 U]	1.0 U	1.0 U	5.0 U	250 U	40 U	**1.6 J**	1.0 U	5.0 U
Cyclohexane	- -	ug/L	NA	5.0 U	NA	5.0 U [5.0 U]	NA	NA	NA	250 U	NA	5.0 U	NA	5.0 U
Ethylbenzene	5	ug/L	NA	**23**	**14**	**10 [4.0 J]**	1.0 U	1.0 U	4.0 U	250 U	40 UJ	5.0 U	1.0 U	**8.5**
Isopropylbenzene	5	ug/L	NA	**12**	NA	**4.0 J [2.0 J]**	NA	NA	NA	250 U	40 UJ	5.0 U	NA	5.0 U
Methyl Ethyl Ketone	50	ug/L	NA	13 U	1.0 U	13 U [13 U]	1.0 U	1.0 U	5.0 U	630 U	40 U	**7.4 J**	1.0 U	13 U
Methylcyclohexane	- -	ug/L	NA	5.0 U	NA	5.0 U [5.0 U]	NA	NA	NA	250 U	NA	5.0 U	NA	5.0 U
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	**1600**	NA	NA	NA
Styrene	5	ug/L	NA	5.0 U	**5.1**	5.0 U [5.0 U]	1.0 U	1.0 U	5.0 U	250 U	40 UJ	5.0 U	1.0 U	5.0 U
Toluene	5	ug/L	NA	**60**	**18**	**9.0 [3.0 J]**	1.0 U	1.0 U	5.0 U	**420**	**130**	5.0 U	1.0 U	**4.7 J**
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	**73 J**	NA	NA	NA
Xylene (total)	5	ug/L	NA	**430**	**180**	**39 J [14 J]**	1.0 U	1.0 U	5.0 U	**710**	**150 J**	5.0 U	1.0 U	**8.1**
Total BTEX	- -	ug/L	NA	**560**	**230**	**70 J [25 J]**	**2.4**	ND	ND	**1800**	**720 J**	ND	ND	**230 J**
Total VOCs	- -	ug/L	NA	**580**	**230**	**74 J [27 J]**	**2.4**	ND	ND	**1800**	**2500 J**	**9.0 J**	ND	**230 J**
SVOCs														
1,1'-Biphenyl	5	ug/L	NA	**29**	NA	**7.0 J [10 U]**	NA	NA	NA	**110**	NA	11 U	NA	**4.1 J**
2,4-Dimethylphenol	50 {GV}	ug/L	NA	**21**	**6.0 J**	10 U [10 U]	10 U	10 U	10 U	**340**	**66 D**	11 U	10 U	10 U
2-Methylnaphthalene	- -	ug/L	NA	**340 D**	**50 J**	**12 [10 U]**	10 U	10 U	10 U	**530 D**	**14**	11 U	10 U	10 U
2-Methylphenol	1	ug/L	NA	**28**	**6.7 J**	10 U [10 U]	10 U	10 U	10 U	**290**	**130 D**	11 U	10 U	10 U
4-Methylphenol	1	ug/L	NA	**30**	**8.8 J**	10 U [10 U]	10 U	10 U	10 U	**190**	**90 D**	21 U	10 U	20 U
Acenaphthene	20 {GV}	ug/L	NA	**28**	**170 J**	**15 [4.0 J]**	10 U	10 U	10 U	**97**	**10**	11 U	10 U	**8.9 J**
Acenaphthylene	- -	ug/L	NA	**79**	**44 J**	**33 J [6.0 J]**	10 U	10 U	10 U	**590 D**	**25 D**	11 U	10 U	**4.7 J**
Acetophenone	- -	ug/L	NA	**2.0 J**	NA	10 U [10 U]	NA	NA	NA	**9.0 J**	NA	11 U	NA	10 U
Anthracene	50 {GV}	ug/L	NA	**8.0 J**	**5.5 J**	**31 J [3.0 J]**	10 U	10 U	10 U	**350**	**13**	11 U	10 U	10 U
Benzo(a)anthracene	0.002 {GV}	ug/L	NA	**4.0 J**	20 UJ	**55 J [3.0 J]**	1.0 U	1.0 U	1.0 U	**950 D**	**36 D**	11 U	1.0 U	10 U
Benzo(a)pyrene	0 {ND}	ug/L	NA	**3.0 J**	20 UJ	**55 J [3.0 J]**	1.0 U	1.0 U	1.0 U	**900 D**	**28 D**	11 U	1.0 U	10 U
Benzo(b)fluoranthene	0.002 {GV}	ug/L	NA	**2.0 J**	20 UJ	**53 J [2.0 J]**	1.0 U	1.0 U	1.0 U	**950 D**	**41 D**	11 U	1.0 U	10 U
Benzo(g,h,i)perylene	- -	ug/L	NA	10 U	200 UJ	**32 J [10 UJ]**	10 U	10 U	10 U	**320**	**23**	11 U	10 U	10 U
Benzo(k)fluoranthene	0.002 {GV}	ug/L	NA	**3.0 J**	20 UJ	**41 J [3.0 J]**	1.0 U	1.0 U	1.0 U	**920 D**	**23**	11 UJ	1.0 U	10 UJ
Bis(2-chloroethyl) ether	1	ug/L	NA	10 U	20 UJ	10 U [10 U]	1.0 U	1.0 U	1.0 U	25 U	**2.4**	11 U	1.0 U	10 U
Bis(2-ethylhexyl) phthalate	5	ug/L	NA	10 U	200 UJ	10 U [10 U]	10 U	10 U	10 U	**20 J**	**2.5**	11 U	10 U	10 U
Carbazole	- -	ug/L	NA	**82 J**	**62 J**	**25 J [4.0 J]**	10 U	10 U	10 U	**260 J**	**30 D**	11 U	10 U	**4.5 J**

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	NYSDEC TOGS Standards and Guidance		GW-1 (Durham Basement)	MW-1	MW-1	MW-2	MW-2	MW-2R	MW-2R	MW-3	MW-3	MW-4R	MW-4R	MW-5R
Date Collected:		Units	03/28/07	12/30/03	11/29/07	12/30/03	11/27/07	11/27/07	03/21/08	12/30/03	07/25/07	06/12/06	11/27/07	06/13/06
SVOCs (Cont.)														
Chrysene	0.002 {GV}	ug/L	NA	3.0 J	200 UJ	51 J [3.0 J]	10 U	10 U	10 U	880 D	29 D	11 U	10 U	10 U
Dibenzo(a,h)anthracene	- -	ug/L	NA	10 U	20 UJ	12 J [10 U]	1.0 U	1.0 U	1.0 U	200	8.8	11 U	1.0 U	10 U
Dibenzofuran	- -	ug/L	NA	39	88 J	24 J [6.0 J]	10 U	10 U	10 U	330	23	11 U	10 U	6.8 J
Diethylphthalate	50 {GV}	ug/L	NA	10 U	200 UJ	10 U [10 U]	10 U	10 U	10 U	25 U	0.56 U	11 U	10 U	10 U
Fluoranthene	50 {GV}	ug/L	NA	12	200 UJ	100 J [8.0 J]	0.50 J	10 U	10 U	1600 D	57 D	11 U	10 U	10 U
Fluorene	50 {GV}	ug/L	NA	26	58 J	29 J [6.0 J]	10 U	10 U	10 U	340	22	11 U	10 U	5.4 J
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	NA	2.0 J	20 UJ	42 J [10 UJ]	1.0 U	1.0 U	1.0 U	790 D	23	11 U	1.0 U	10 U
Naphthalene	10 {GV}	ug/L	NA	3900 D	2300 J	150 J [7.0 J]	10 U	10 U	10 U	4000 D	26	11 U	10 U	10
NYSDOH BAP TEQ(-NDs Excluded)	- -	ug/L	NA	3.9	NA	83 [3.6]	NA	NA	NA	1400	NA	NA	NA	NA
Phenanthrene	50 {GV}	ug/L	NA	32	24 J	74 J [3.0 J]	0.20 J	10 U	10 U	1400 D	26	11 U	10 U	3.9 J
Phenol	1	ug/L	NA	10	200 UJ	10 U [10 U]	10 U	10 U	10 U	54	24 D	11 U	10 U	10 U
Pyrene	50 {GV}	ug/L	NA	9.0 J	200 UJ	89 J [6.0 J]	0.50 J	10 U	10 U	1400 D	45 D	11 U	10 U	10 U
Total CPAHs	- -	ug/L	NA	17 J	ND	310 J [14 J]	ND	ND	ND	5600	190	ND	ND	ND
Total PAHs	- -	ug/L	NA	4500 J	2700 J	870 J [57 J]	1.2 J	ND	ND	16000	450	ND	ND	33 J
Total SVOCs	- -	ug/L	NA	4700 J	2800 J	930 J [67 J]	1.2 J	ND	ND	18000 J	820	ND	ND	48 J
Inorganics														
Aluminum	- -	ug/L	NA	NA	NA	107 B [200 U]	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	ug/L	NA	NA	NA	4.40 B [3.30 B]	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1000	ug/L	NA	NA	NA	37.1 B [37.9 B]	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	ug/L	NA	NA	NA	178000 [186000]	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	ug/L	NA	NA	NA	3.30 B [2.60 B]	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	ug/L	NA	NA	NA	5.30 [5.30]	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	ug/L	NA	259	150	1260 [1600]	3000	10.0 U	10.0 U	NA	5100	28.9	42.0	3.60 U
Iron	300	ug/L	NA	NA	NA	280 [287]	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	35000	ug/L	NA	NA	NA	81600 [85200]	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	ug/L	NA	NA	NA	716 [692]	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	ug/L	NA	NA	NA	1230 B [1240 B]	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	20000	ug/L	NA	NA	NA	13200 [14100]	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	ug/L	NA	NA	NA	1.30 B [0.930 B]	NA	NA	NA	NA	NA	NA	NA	NA
PIANO VOCs														
1,2,3-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	16.0 J	NA	NA	NA
1,2,4,5-Tetramethylbenzene	- -	ug/L	0.470 J	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
1,2,4-Trimethylbenzene	- -	ug/L	1.30 J	NA	NA	NA	NA	NA	NA	NA	41.0	NA	NA	NA
1,2-Dimethyl-3-ethylbenzene	- -	ug/L	0.220 J	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
1,2-Dimethyl-4-ethylbenzene	- -	ug/L	1.10 J	NA	NA	NA	NA	NA	NA	NA	2.80 J	NA	NA	NA
1,3,5-Trimethylbenzene	- -	ug/L	0.990 J	NA	NA	NA	NA	NA	NA	NA	23.0 J	NA	NA	NA
1,3-Dimethyl-4-ethylbenzene	- -	ug/L	0.350 J	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
1,3-Dimethyl-5-ethylbenzene	- -	ug/L	0.950 J	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	GW-1 (Durham Basement) 03/28/07	MW-1 12/30/03	MW-1 11/29/07	MW-2 12/30/03	MW-2 11/27/07	MW-2R 11/27/07	MW-2R 03/21/08	MW-3 12/30/03	MW-3 07/25/07	MW-4R 06/12/06	MW-4R 11/27/07	MW-5R 06/13/06
PIANO VOCs (Cont.)														
1,4-Dimethyl-2-ethylbenzene	- -	ug/L	**0.540 J**	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
1-Methyl-2-ethylbenzene	- -	ug/L	**0.690 J**	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
1-Methyl-2-propylbenzene	- -	ug/L	**0.320 J**	NA	NA	NA	NA	NA	NA	NA	40.0 UJ	NA	NA	NA
1-Methyl-3-ethylbenzene	- -	ug/L	**0.790 J**	NA	NA	NA	NA	NA	NA	NA	**5.20 J**	NA	NA	NA
1-Methyl-3-propylbenzene	- -	ug/L	**0.550 J**	NA	NA	NA	NA	NA	NA	NA	40.0 UJ	NA	NA	NA
1-Methyl-4-propylbenzene	- -	ug/L	**0.290 J**	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
1-Methylnaphthalene	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**70.0**	NA	NA	NA
2-Methylnaphthalene	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**63.0**	NA	NA	NA
3-Methylthiophene	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
4-Ethyltoluene	- -	ug/L	**0.400 J**	NA	NA	NA	NA	NA	NA	NA	40.0 UJ	NA	NA	NA
Benzene	1	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**450**	NA	NA	NA
Benzothiophene	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**190**	NA	NA	NA
Ethylbenzene	5	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
Indane	- -	ug/L	**0.190 J**	NA	NA	NA	NA	NA	NA	NA	**14.0 J**	NA	NA	NA
Isopentane	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
Naphthalene	10 {GV}	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**980**	NA	NA	NA
Styrene	5	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
Thiophene	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	40.0 U	NA	NA	NA
Toluene	5	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**120**	NA	NA	NA
Xylene (o)	- -	ug/L	2.00 U	NA	NA	NA	NA	NA	NA	NA	**54.0**	NA	NA	NA
Xylene (total)	5	ug/L	**0.360 J**	NA	NA	NA	NA	NA	NA	NA	**110**	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-5R 11/27/07	MW-6R 06/13/06	MW-6R 11/28/07	MW-7R 06/14/06	MW-7R 11/27/07	MW-8R 06/13/06	MW-8R 11/29/07	MW-9 06/12/06	MW-9 11/28/07	MW-10R 06/13/06	MW-10R 11/28/07	MW-11 06/12/06	MW-11 03/28/07
VOCs															
1,1-Dichloroethane	5	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U [1.0 U]	5.0 U [5.0 U]	5.0 U	5.0 U	**0.60 J**	5.0 U	10 U	5.0 U	NA
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.6	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U [1.0 U]	5.0 U [5.0 U]	5.0 U	5.0 U	2.0 U	5.0 U	10 U	5.0 U	NA
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50 {GV}	ug/L	5.0 U	13 U	5.0 U	13 U	1.0 U [1.0 U]	**13 U [21 J]**	5.0 U	**14 J**	2.0 U	13 U	10 U	13 U	NA
Benzene	1	ug/L	**440**	**390 D**	**570**	**420 D**	**69 [67]**	**310 D [310 D]**	**440**	**420 D**	**370**	**1200 D**	**1200**	5.0 U	NA
Carbon Disulfide	60	ug/L	5.0 U	**3.9 J**	5.0 U	5.0 U	1.0 U [1.0 U]	**3.9 J [4.0 J]**	5.0 U	**4.0 J**	2.0 U	5.0 UJ	10 U	5.0 UJ	NA
Chloroform	7	ug/L	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U [1.0 U]	5.0 U [5.0 U]	5.0 U	5.0 U	2.0 U	5.0 U	10 U	5.0 U	NA
Cyclohexane	- -	ug/L	NA	5.0 U	NA	5.0 U	NA	5.0 U [5.0 U]	NA	**1.3 J**	NA	5.0 U	NA	5.0 U	NA
Ethylbenzene	5	ug/L	**43**	**14**	**22**	**14**	**3.1 [3.3]**	**7.9 [8.0]**	**4.9 J**	**170**	**140**	**53**	**67**	5.0 U	NA
Isopropylbenzene	5	ug/L	NA	5.0 U	NA	**1.4 J**	NA	**1.4 J [1.5 J]**	NA	**28**	NA	**3.7 J**	NA	5.0 U	NA
Methyl Ethyl Ketone	50	ug/L	5.0 U	13 U	5.0 U	13 U	1.0 U [1.0 U]	13 U [13 U]	5.0 U	13 U	2.0 U	13 U	10 U	13 U	NA
Methylcyclohexane	- -	ug/L	NA	5.0 U	NA	5.0 U	NA	NA	NA	NA	NA	**3.2 J**	NA	5.0 U	NA
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	ug/L	**2.2 J**	5.0 U	5.0 U	**2.5 J**	**0.80 J [0.80 J]**	5.0 U [5.0 U]	5.0 U	**22**	**8.3**	5.0 U	10 U	5.0 U	NA
Toluene	5	ug/L	**17**	**11**	**5.7**	**8.0**	**3.7 [3.9]**	**4.2 J [3.5 J]**	**6.9**	**190**	**180**	**6.1**	**4.2 J**	5.0 U	NA
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	**61**	**15**	**14**	**27**	**9.9 [10]**	**4.2 J [4.7 J]**	**4.6 J**	**400**	**280**	**31**	**12**	5.0 U	NA
Total BTEX	- -	ug/L	**560**	**430**	**610**	**470**	**86 [84]**	**330 J [330 J]**	**460 J**	**1200**	**970**	**1300**	**1300 J**	ND	NA
Total VOCs	- -	ug/L	**560 J**	**430 J**	**610**	**470 J**	**87 J [85 J]**	**330 J [350 J]**	**460 J**	**1300 J**	**980 J**	**1300 J**	**1300 J**	ND	NA
SVOCs															
1,1'-Biphenyl	5	ug/L	NA	10 U	NA	**14**	NA	10 U [10 U]	NA	**36**	NA	10 U	NA	10 U	NA
2,4-Dimethylphenol	50 {GV}	ug/L	50 U	**2.1 J**	10 U	11 U	100 U [100 U]	10 U [10 U]	**0.60 J**	**70**	**37 J**	**7.6 J**	10 U	10 U	NA
2-Methylnaphthalene	- -	ug/L	**2.1 J**	10 U	10 U	**79**	**110 [110]**	10 U [10 U]	**3.8 J**	**61**	**16 J**	10 U	10 U	10 U	NA
2-Methylphenol	1	ug/L	50 U	10 U	10 U	11 U	100 U [100 U]	10 U [10 U]	10 U	**28**	**19 J**	10 U	10 U	10 U	NA
4-Methylphenol	1	ug/L	50 U	20 U	10 U	22 U	100 U [100 U]	20 U [20 U]	10 U	**11 J**	**2.7 J**	20 U	10 U	20 U	NA
Acenaphthene	20 {GV}	ug/L	**39 J**	10 U	**0.60 J**	**10 J**	**52 J [49 J]**	**5.0 J [5.5 J]**	**6.5 J**	**57**	**59**	**3.4 J**	**5.6 J**	10 U	NA
Acenaphthylene	- -	ug/L	**20 J**	10 U	10 U	**31**	**71 J [81 J]**	**10 U [1.6 J]**	**4.7 J**	**94**	**55**	**1.7 J**	**5.4 J**	10 U	NA
Acetophenone	- -	ug/L	NA	10 U	NA	11 U	NA	10 U [10 U]	NA	10 U	NA	10 U	NA	10 U	NA
Anthracene	50 {GV}	ug/L	**1.8 J**	10 U	10 U	11 U	**9.6 J [9.9 J]**	10 U [10 U]	**0.70 J**	**13**	**11 J**	10 U	10 U	10 U	NA
Benzo(a)anthracene	0.002 {GV}	ug/L	5.0 U	10 U	1.0 U	11 U	10 U [10 U]	10 U [10 U]	1.0 U	10 U	5.0 U	10 U	1.0 U	10 U	NA
Benzo(a)pyrene	0 {ND}	ug/L	5.0 U	10 U	1.0 U	11 U	10 U [10 U]	10 U [10 U]	1.0 U	10 U	5.0 U	10 U	1.0 U	10 U	NA
Benzo(b)fluoranthene	0.002 {GV}	ug/L	5.0 U	10 U	1.0 U	11 U	10 U [10 U]	10 U [10 U]	1.0 U	10 U	5.0 U	10 U	1.0 U	10 U	NA
Benzo(g,h,i)perylene	- -	ug/L	50 U	10 U	10 U	11 U	100 U [100 U]	10 U [10 U]	10 U	10 U	50 U	10 U	10 U	10 U	NA
Benzo(k)fluoranthene	0.002 {GV}	ug/L	5.0 U	10 UJ	1.0 U	11 UJ	10 U [10 U]	10 UJ [10 UJ]	1.0 U	10 UJ	5.0 U	10 UJ	1.0 U	10 UJ	NA
Bis(2-chloroethyl) ether	1	ug/L	5.0 U	10 U	1.0 U	11 U	10 U [10 U]	10 U [10 U]	1.0 U	10 U	5.0 U	10 U	1.0 U	10 U	NA
Bis(2-ethylhexyl) phthalate	5	ug/L	50 U	10 U	10 U	11 U	100 U [100 U]	10 U [10 U]	10 U	10 U	50 U	10 U	10 U	10 U	NA
Carbazole	- -	ug/L	**20 J**	10 U	**1.7 J**	**16**	**29 J [29 J]**	**3.2 J [3.6 J]**	**5.2 J**	**74**	**46 J**	**12**	**14**	10 U	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-5R 11/27/07	MW-6R 06/13/06	MW-6R 11/28/07	MW-7R 06/14/06	MW-7R 11/27/07	MW-8R 06/13/06	MW-8R 11/29/07	MW-9 06/12/06	MW-9 11/28/07	MW-10R 06/13/06	MW-10R 11/28/07	MW-11 06/12/06	MW-11 03/28/07
SVOCs (Cont.)															
Chrysene	0.002 {GV}	ug/L	50 U	10 U	10 U	11 U	100 U [100 U]	10 U [10 U]	10 U	10 U	50 U	10 U	10 U	10 U	NA
Dibenzo(a,h)anthracene	- -	ug/L	5.0 U	10 U	1.0 U	11 U	10 U [10 U]	10 U [10 U]	1.0 U	10 U	5.0 U	10 U	1.0 U	10 U	NA
Dibenzofuran	- -	ug/L	**25 J**	10 U	10 U	**20**	**73 J [74 J]**	**2.5 J [2.7 J]**	**4.1 J**	**74**	**58**	10 U	**1.1 J**	10 U	NA
Diethylphthalate	50 {GV}	ug/L	50 U	10 U	10 U	11 U	100 U [100 U]	10 U [10 U]	10 U	10 U	50 U	10 U	10 U	10 U	NA
Fluoranthene	50 {GV}	ug/L	50 U	10 U	10 U	11 U	**7.1 J [7.0 J]**	10 U [10 U]	**0.60 J**	**6.4 J**	**5.0 J**	10 U	10 U	10 U	NA
Fluorene	50 {GV}	ug/L	**22 J**	10 U	10 U	**13**	**56 J [49 J]**	**2.9 J [3.2 J]**	**4.7 J**	**70**	**51**	**1.2 J**	**1.7 J**	10 U	NA
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	5.0 U	10 U	1.0 U	11 U	10 U [10 U]	10 U [10 U]	1.0 U	10 U	5.0 U	10 U	1.0 U	10 U	NA
Naphthalene	10 {GV}	ug/L	**490**	10 U	**3.3 J**	**670 D**	**1100 [1200]**	**1.5 J [1.7 J]**	**47**	**960 D**	**420**	**75**	**18**	**2.7 J**	NA
NYSDOH BAP TEQ(-NDs Excluded)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50 {GV}	ug/L	**17 J**	10 U	10 U	**9.9 J**	**55 J [54 J]**	**1.3 J [1.8 J]**	**2.5 J**	**60**	**51**	10 U	**0.20 J**	10 U	NA
Phenol	1	ug/L	50 U	**12**	10 U	**9.0 J**	100 U [100 U]	**3.5 J [10 U]**	10 U	**3.5 J**	50 U	**13**	**1.8 J**	10 U	NA
Pyrene	50 {GV}	ug/L	50 U	10 U	10 U	11 U	**5.4 J [5.6 J]**	10 U [10 U]	**0.50 J**	**4.0 J**	**3.6 J**	10 U	10 U	10 U	NA
Total CPAHs	- -	ug/L	ND	ND	ND	ND	ND [ND]	ND [ND]	ND	ND	ND	ND	ND	ND	NA
Total PAHs	- -	ug/L	**590 J**	ND	**3.9 J**	**810 J**	**1500 J [1600 J]**	**11 J [14 J]**	**71 J**	**1300 J**	**670 J**	**81 J**	**31 J**	**2.7 J**	NA
Total SVOCs	- -	ug/L	**640 J**	**14 J**	**5.6 J**	**870 J**	**1600 J [1700 J]**	**20 J [20 J]**	**81 J**	**1600 J**	**830 J**	**110 J**	**48 J**	**2.7 J**	NA
Inorganics															
Aluminum	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	ug/L	10.0 U	**55.5**	**11.0**	**15.5**	10.0 U [10.0 U]	3.60 U [3.60 U]	10.0 U	**943**	**440**	**53.8**	**49.0**	**359**	NA
Iron	300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	35000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PIANO VOCs															
1,2,3-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1,2-Dimethyl-3-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1,2-Dimethyl-4-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1,3-Dimethyl-4-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1,3-Dimethyl-5-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-5R 11/27/07	MW-6R 06/13/06	MW-6R 11/28/07	MW-7R 06/14/06	MW-7R 11/27/07	MW-8R 06/13/06	MW-8R 11/29/07	MW-9 06/12/06	MW-9 11/28/07	MW-10R 06/13/06	MW-10R 11/28/07	MW-11 06/12/06	MW-11 03/28/07
PIANO VOCs (Cont.)															
1,4-Dimethyl-2-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1-Methyl-2-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1-Methyl-2-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1-Methyl-3-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1-Methyl-3-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1-Methyl-4-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
1-Methylnaphthalene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
2-Methylnaphthalene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
3-Methylthiophene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
4-Ethyltoluene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Benzene	1	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Benzothiophene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Ethylbenzene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Indane	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Isopentane	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Styrene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Thiophene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Toluene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U
Xylene (total)	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.00 U

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-12R 06/13/06	MW-12R 03/28/07	MW-13R 11/28/07	MW-13R 03/20/08	MW-14R 11/29/07	MW-14R 03/21/08	MW-14R 11/21/08	MW-15 11/29/07	MW-15 03/20/08	MW-15R 11/29/07	MW-15R 03/20/08	MW-15R 11/21/08
VOCs														
1,1-Dichloroethane	5	ug/L	5.0 U	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	50 U	50 U
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.6	ug/L	5.0 U	NA	1.0 U	2.0 U [2.0 U]	1.0 U	2.0 U	2.0 U	1.0 U	2.0 U	5.0 U	20 U	20 U
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50 {GV}	ug/L	**17 J**	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	50 U	50 U
Benzene	1	ug/L	**3000 D**	NA	1.0 U	1.0 U [1.0 U]	**98**	**110**	**60**	1.0 U	1.0 U	**310**	**1000**	**1100**
Carbon Disulfide	60	ug/L	**4.5 J**	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	**0.80 J**	1.0 U	5.0 U	5.0 U	50 U	50 U
Chloroform	7	ug/L	5.0 U	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	50 U	50 U
Cyclohexane	- -	ug/L	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	ug/L	**42**	NA	1.0 U	4.0 U [4.0 U]	1.0 U	4.0 U	4.0 U	1.0 U	4.0 U	5.0 U	40 U	40 U
Isopropylbenzene	5	ug/L	**1.1 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	50	ug/L	13 U	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	50 U	50 U
Methylcyclohexane	- -	ug/L	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	ug/L	5.0 U	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 UJ	1.0 U	5.0 U	5.0 U	50 U	50 U
Toluene	5	ug/L	**10**	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	50 U	50 U
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	**46**	NA	1.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	5.0 UJ	1.0 U	5.0 U	5.0 U	50 U	50 U
Total BTEX	- -	ug/L	**3100**	NA	ND	ND [ND]	**98**	**110**	**60**	ND	ND	**310**	**1000**	**1100**
Total VOCs	- -	ug/L	**3100 J**	NA	ND	ND [ND]	**98**	**110**	**61 J**	ND	ND	**310**	**1000**	**1100**
SVOCs														
1,1'-Biphenyl	5	ug/L	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	50 {GV}	ug/L	**1.8 J**	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	- -	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	1	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methylphenol	1	ug/L	20 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	20 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	- -	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	- -	ug/L	10 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	50 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	**0.20 J**	**0.50 J**	10 U	10 U	10 U
Benzo(a)anthracene	0.002 {GV}	ug/L	10 U	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0 {ND}	ug/L	10 U	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	0.002 {GV}	ug/L	10 U	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	- -	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	0.002 {GV}	ug/L	10 UJ	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bis(2-chloroethyl) ether	1	ug/L	10 U	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bis(2-ethylhexyl) phthalate	5	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	- -	ug/L	**2.6 J**	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-12R 06/13/06	MW-12R 03/28/07	MW-13R 11/28/07	MW-13R 03/20/08	MW-14R 11/29/07	MW-14R 03/21/08	MW-14R 11/21/08	MW-15 11/29/07	MW-15 03/20/08	MW-15R 11/29/07	MW-15R 03/20/08	MW-15R 11/21/08
SVOCs (Cont.)														
Chrysene	0.002 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	- -	ug/L	10 U	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran	- -	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	50 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	**0.40 J**	10 U	10 U	10 U
Fluorene	50 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	10 U	NA	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	10 {GV}	ug/L	**27**	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
NYSDOH BAP TEQ(-NDs Excluded)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	**0.60 J**	10 U	10 U	10 U
Phenol	1	ug/L	**31**	NA	10 U	10 U [10 U]	10 U	10 U	10 UJ	10 U	10 U	**1.5 J**	10 U	10 UJ
Pyrene	50 {GV}	ug/L	10 U	NA	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total CPAHs	- -	ug/L	ND	NA	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	ug/L	**27**	NA	ND	ND [ND]	ND	ND	ND	**0.20 J**	**1.5 J**	ND	ND	ND
Total SVOCs	- -	ug/L	**62 J**	NA	ND	ND [ND]	ND	ND	ND	**0.20 J**	**1.5 J**	**1.5 J**	ND	ND
Inorganics														
Aluminum	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	ug/L	**29.2**	NA	10.0 U	10.0 U [10.0 U]	10.0 U	10.0 U	10.0 UJ	10.0 U	10.0 U	**42.0**	**49.0**	**20.0 J**
Iron	300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	35000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PIANO VOCs														
1,2,3-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	- -	ug/L	NA	**4.80 J [4.60 J]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dimethyl-3-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dimethyl-4-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dimethyl-4-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dimethyl-5-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-12R 06/13/06	MW-12R 03/28/07	MW-13R 11/28/07	MW-13R 03/20/08	MW-14R 11/29/07	MW-14R 03/21/08	MW-14R 11/21/08	MW-15 11/29/07	MW-15 03/20/08	MW-15R 11/29/07	MW-15R 03/20/08	MW-15R 11/21/08
PIANO VOCs (Cont.)														
1,4-Dimethyl-2-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-2-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-2-propylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-3-ethylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-3-propylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-4-propylbenzene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	- -	ug/L	NA	**2.90 J [2.80 J]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Methylthiophene	- -	ug/L	NA	**1.00 J [1.10 J]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Ethyltoluene	- -	ug/L	NA	10.0 U [10.0 U]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	ug/L	NA	**3800 D [3800 D]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzothiophene	- -	ug/L	NA	**12.0 [11.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	ug/L	NA	**52.0 [53.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indane	- -	ug/L	NA	**47.0 [47.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopentane	- -	ug/L	NA	**6.80 JB [10.0 U]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10 {GV}	ug/L	NA	**70.0 [68.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	ug/L	NA	**2.60 J [2.60 J]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thiophene	- -	ug/L	NA	**90.0 [90.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	ug/L	NA	**13.0 [12.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (o)	- -	ug/L	NA	**30.0 [31.0]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	NA	**19.0 J [19.0 J]**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	NYSDEC TOGS Standards and Guidance		MW-15RD	MW-15RD	MW-15RD	MW-16R	MW-16R	MW-17R	MW-17R	MW-19R	MW-19R	MW-20R
Date Collected:		Units	11/29/07	03/20/08	11/21/08	11/28/07	03/21/08	11/21/08	02/04/09	11/21/08	02/04/09	11/21/08
VOCs												
1,1-Dichloroethane	5	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	10 U	2.0 U	5.0 U	1.0 U	5.0 U
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.6	ug/L	1.0 U	2.0 U	2.0 U [2.0 U]	1.0 U	2.0 U	4.0 U	2.0 U	2.0 U	1.0 U	2.0 U
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	50 {GV}	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	10 U	20 U	5.0 U	10 U	5.0 U
Benzene	1	ug/L	**29**	**30**	**31 [31]**	1.0 U	1.0 U	**230**	**280**	1.0 U	1.0 U	1.0 U
Carbon Disulfide	60	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	**2.0 J**	2.0 U	5.0 U	1.0 U	5.0 U
Chloroform	7	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	**1.0**	**0.70 J**	10 U	2.0 U	5.0 U	1.0 U	5.0 U
Cyclohexane	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	ug/L	1.0 U	4.0 U	4.0 U [4.0 U]	1.0 U	4.0 U	8.0 U	2.0 U	4.0 U	1.0 U	4.0 U
Isopropylbenzene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	50	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	10 U	20 U	5.0 U	10 U	5.0 U
Methylcyclohexane	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	10 UJ	2.0 U	5.0 U	1.0 U	5.0 U
Toluene	5	ug/L	**0.20 J**	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	10 U	2.0 U	5.0 U	1.0 U	5.0 U
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	1.0 U	5.0 U	5.0 U [5.0 U]	1.0 U	5.0 U	10 UJ	6.0 U	5.0 U	3.0 U	5.0 U
Total BTEX	- -	ug/L	**29 J**	**30**	**31 [31]**	ND	ND	**230**	**280**	ND	ND	ND
Total VOCs	- -	ug/L	**29 J**	**30**	**31 [31]**	**1.0**	**0.70 J**	**230 J**	**280**	ND	ND	ND
SVOCs												
1,1'-Biphenyl	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	- -	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	1	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U
4-Methylphenol	1	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthene	20 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene	- -	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetophenone	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)anthracene	0.002 {GV}	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0 {ND}	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	0.002 {GV}	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	- -	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene	0.002 {GV}	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bis(2-chloroethyl) ether	1	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bis(2-ethylhexyl) phthalate	5	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole	- -	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-15RD 11/29/07	MW-15RD 03/20/08	MW-15RD 11/21/08	MW-16R 11/28/07	MW-16R 03/21/08	MW-17R 11/21/08	MW-17R 02/04/09	MW-19R 11/21/08	MW-19R 02/04/09	MW-20R 11/21/08
SVOCs (Cont.)												
Chrysene	0.002 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dibenzo(a,h)anthracene	- -	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenzofuran	- -	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethylphthalate	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluorene	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	1.0 U	1.0 U	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	10 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
NYSDOH BAP TEQ(-NDs Excluded)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	1	ug/L	**5.0 J**	**4.0 J**	**8.2 J [9.4 J]**	10 U	10 U	10 UJ	10 U	10 UJ	10 U	10 UJ
Pyrene	50 {GV}	ug/L	10 U	10 U	10 U [10 U]	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total CPAHs	- -	ug/L	ND	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND
Total PAHs	- -	ug/L	ND	ND	ND [ND]	ND	ND	ND	ND	ND	ND	ND
Total SVOCs	- -	ug/L	**5.0 J**	**4.0 J**	**8.2 J [9.4 J]**	ND	ND	ND	ND	ND	ND	ND
Inorganics												
Aluminum	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	3	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	1000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	200	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	200	ug/L	10.0 U	10.0 U	10.0 UJ [10.0 UJ]	10.0 U	**13.0**	10.0 UJ	10.0 U	10.0 UJ	10.0 U	10.0 UJ
Iron	300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	35000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	300	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PIANO VOCs												
1,2,3-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dimethyl-3-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dimethyl-4-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dimethyl-4-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dimethyl-5-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-15RD 11/29/07	MW-15RD 03/20/08	MW-15RD 11/21/08	MW-16R 11/28/07	MW-16R 03/21/08	MW-17R 11/21/08	MW-17R 02/04/09	MW-19R 11/21/08	MW-19R 02/04/09	MW-20R 11/21/08
PIANO VOCs (Cont.)												
1,4-Dimethyl-2-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-2-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-2-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-3-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-3-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methyl-4-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3-Methylthiophene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Ethyltoluene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzothiophene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indane	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopentane	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thiophene	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 16.

**NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK**

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-20R 02/04/09	PW-1 09/24/07	PW-1 11/30/07	PW-2 09/24/07	PW-2 11/30/07
VOCs							
1,1-Dichloroethane	5	ug/L	1.0 U [1.0 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,2-Dichloroethane	0.6	ug/L	1.0 U [1.0 U]	2.0 U [2.0 U]	1.0 U	**8.5**	**7.4**
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
Acetone	50 {GV}	ug/L	10 U [10 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
Benzene	1	ug/L	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	**0.30 J**	**0.30 J**
Carbon Disulfide	60	ug/L	1.0 U [1.0 U]	5.0 UJ [5.0 U]	1.0 U	5.0 U	1.0 U
Chloroform	7	ug/L	1.0 U [1.0 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
Cyclohexane	- -	ug/L	NA	NA	NA	NA	NA
Ethylbenzene	5	ug/L	1.0 U [1.0 U]	4.0 U [4.0 U]	1.0 U	4.0 U	1.0 U
Isopropylbenzene	5	ug/L	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	50	ug/L	10 U [10 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
Methylcyclohexane	- -	ug/L	NA	NA	NA	NA	NA
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA
Styrene	5	ug/L	1.0 U [1.0 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
Toluene	5	ug/L	1.0 U [1.0 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	3.0 U [3.0 U]	5.0 U [5.0 U]	1.0 U	5.0 U	1.0 U
Total BTEX	- -	ug/L	ND [ND]	ND [ND]	ND	**0.30 J**	**0.30 J**
Total VOCs	- -	ug/L	ND [ND]	ND [ND]	ND	**8.8 J**	**7.7 J**
SVOCs							
1,1'-Biphenyl	5	ug/L	NA	NA	NA	NA	NA
2,4-Dimethylphenol	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 UJ	10 U
2-Methylnaphthalene	- -	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
2-Methylphenol	1	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 UJ	10 U
4-Methylphenol	1	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 UJ	10 U
Acenaphthene	20 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Acenaphthylene	- -	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Acetophenone	- -	ug/L	NA	NA	NA	NA	NA
Anthracene	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Benzo(a)anthracene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	0 {ND}	ug/L	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Benzo(b)fluoranthene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Benzo(g,h,i)perylene	- -	ug/L	10 U [10 U]	10 UJ [10 UJ]	10 U	10 UJ	10 U
Benzo(k)fluoranthene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Bis(2-chloroethyl) ether	1	ug/L	1.0 U [1.0 U]	1.0 U [1.0 U]	1.0 U	1.0 U	1.0 U
Bis(2-ethylhexyl) phthalate	5	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Carbazole	- -	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-20R 02/04/09	PW-1 09/24/07	PW-1 11/30/07	PW-2 09/24/07	PW-2 11/30/07
SVOCs (Cont.)							
Chrysene	0.002 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Dibenzo(a,h)anthracene	- -	ug/L	1.0 U [1.0 U]	1.0 U [1.0 UJ]	1.0 U	1.0 UJ	1.0 U
Dibenzofuran	- -	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Diethylphthalate	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	**4.8 J**	10 U
Fluoranthene	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Fluorene	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002 {GV}	ug/L	1.0 U [1.0 U]	1.0 UJ [1.0 UJ]	1.0 U	1.0 UJ	1.0 U
Naphthalene	10 {GV}	ug/L	**0.40 J [0.40 J]**	10 U [10 U]	10 U	10 U	10 U
NYSDOH BAP TEQ(-NDs Excluded)	- -	ug/L	NA	NA	NA	NA	NA
Phenanthrene	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Phenol	1	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 UJ	10 U
Pyrene	50 {GV}	ug/L	10 U [10 U]	10 U [10 U]	10 U	10 U	10 U
Total CPAHs	- -	ug/L	ND [ND]	ND [ND]	ND	ND	ND
Total PAHs	- -	ug/L	**0.40 J [0.40 J]**	ND [ND]	ND	ND	ND
Total SVOCs	- -	ug/L	**0.40 J [0.40 J]**	ND [ND]	ND	**4.8 J**	ND
Inorganics							
Aluminum	- -	ug/L	NA	NA	NA	NA	NA
Antimony	3	ug/L	NA	NA	NA	NA	NA
Barium	1000	ug/L	NA	NA	NA	NA	NA
Calcium	- -	ug/L	NA	NA	NA	NA	NA
Cobalt	- -	ug/L	NA	NA	NA	NA	NA
Copper	200	ug/L	NA	NA	NA	NA	NA
Cyanide	200	ug/L	10.0 U [10.0 U]	10.0 U [10.0 U]	10.0 U	10.0 U	10.0 U
Iron	300	ug/L	NA	NA	NA	NA	NA
Magnesium	35000	ug/L	NA	NA	NA	NA	NA
Manganese	300	ug/L	NA	NA	NA	NA	NA
Potassium	- -	ug/L	NA	NA	NA	NA	NA
Sodium	20000	ug/L	NA	NA	NA	NA	NA
Vanadium	- -	ug/L	NA	NA	NA	NA	NA
PIANO VOCs							
1,2,3-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,2,4,5-Tetramethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,2-Dimethyl-3-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,2-Dimethyl-4-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,3-Dimethyl-4-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1,3-Dimethyl-5-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Date Collected:	NYSDEC TOGS Standards and Guidance	Units	MW-20R 02/04/09	PW-1 09/24/07	PW-1 11/30/07	PW-2 09/24/07	PW-2 11/30/07
PIANO VOCs (Cont.)							
1,4-Dimethyl-2-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1-Methyl-2-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1-Methyl-2-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1-Methyl-3-ethylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1-Methyl-3-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1-Methyl-4-propylbenzene	- -	ug/L	NA	NA	NA	NA	NA
1-Methylnaphthalene	- -	ug/L	NA	NA	NA	NA	NA
2-Methylnaphthalene	- -	ug/L	NA	NA	NA	NA	NA
3-Methylthiophene	- -	ug/L	NA	NA	NA	NA	NA
4-Ethyltoluene	- -	ug/L	NA	NA	NA	NA	NA
Benzene	1	ug/L	NA	NA	NA	NA	NA
Benzothiophene	- -	ug/L	NA	NA	NA	NA	NA
Ethylbenzene	5	ug/L	NA	NA	NA	NA	NA
Indane	- -	ug/L	NA	NA	NA	NA	NA
Isopentane	- -	ug/L	NA	NA	NA	NA	NA
Naphthalene	10 {GV}	ug/L	NA	NA	NA	NA	NA
Styrene	5	ug/L	NA	NA	NA	NA	NA
Thiophene	- -	ug/L	NA	NA	NA	NA	NA
Toluene	5	ug/L	NA	NA	NA	NA	NA
Xylene (o)	- -	ug/L	NA	NA	NA	NA	NA
Xylene (total)	5	ug/L	NA	NA	NA	NA	NA

See Notes on Page 16.

TABLE 7
SUMMARY OF DETECTED GROUNDWATER SAMPLE ANALYTICAL RESULTS

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:
Results reported in micrograms per liter (ug/L); also expressed as parts per billion (ppb).
NYSDEC Technical and Operation Guidance Series No. 1.1.1 Standards and Guidance Values (June 1998).
Bolded values are detected.
Shaded values exceed the NYSDEC TOGS.
GV = guidance value.
NA = Not analyzed.

Data Qualifiers:

Qualifier Type	Lab Qualifiers	Definition
Inorganic	B	The reported value was obtained from a reading less than the contract required detection limit (CRDL) but greater than or equal to the instrument detection limit (IDL).
Inorganic	U	The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
Organic	D	Concentration is based on a diluted sample analysis.
Organic	J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
Organic	B	The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
Organic	ND	Not Detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 8
DOMINANT VEGETATION WITHIN EACH COVERTYPE

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Common Name	Scientific Name
Upland Scrub/Shrub	
Box elder	*Acer negundo*
Sugar maple	*Acer saccharum*
Eastern white cedar	*Thuja occidentalis*
Tartarian honeysuckle	*Lonicera tatarica*
Crab apple	*Malus spp.*
Virgnia creeper	*Parthenocissus quinquefolia*
Queen Anne's lace	*Daucus carota*
Goldenrod	*Solidago* spp.
Clover	*Trefolium* spp.
Grass	*Poa* spp.
Black raspberry	*Rubus* spp.
Japanese knotweed	*Polygonum cuspidatum*
Bedstraw	*Cruciata* spp.
Chickory	*Cichorium intybus*
Daisy fleabane	*Erigeron annus*
Burdock	*Arctium* spp.
Mowed Field	
Grass	*Poa* spp.
Clover	*Trefolium* spp.
Dandelion	*Taraxacum officinale*
Bedstraw	*Cruciata* spp.
Chickory	*Cichorium intybus*
Daisy fleabane	*Erigeron annus*
Drainage Ditch/Swale	
Box elder	*Poa* spp.
Sugar maple	*Acer saccharum*
Japanese knotweed	*Polygonum cuspidatum*
Jewelweed	*Impatiens* spp.
Purple loosestrife	*Lythrum salicaria*
Horsetails	*Equiseteum* spp.
Cattail	*Typha* spp.
River grape	*Vitis riparia*

TABLE 9
OBSERVED AND TYPICAL BIOTA EXPECTED ONSITE OR IN THE VICINITY OF THE SITE

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Common Name	Scientific Name
Mammals	
Shrews	*Sorex* spp., *Blarina* spp.
Raccoon	*Procyon lotor*
Opossum	*Didelphis marsupialis*
Chipmunk	*Tamias striatus*
Mice	*Peromyscus* spp., *Mus musculus*
Gray squirrel*	*Sciurus carolinensis*
Norway rat	*Rattus norvegicus*
Eastern cottontail*	*Sylvilagus floridanus*
Hairytail mole	*Parascalops breweri*
Dog*	*Canis lupus familiaris*
Woodchuck*	*Marmota monax*
Birds	
Chickadee	*Parus atricapillus*
American crow*	*Corvus brachyrhynchos*
American robin*	*Turdus migratorius*
Barn swallow*	*Hirundo rustica*
Brown-headed cowbird	*Molothrus ater*
Common grackle	*Quiscalus quiscula*
Red-winged blackbird	*Agelaius phoeniceus*
Mourning dove	*Zenaida macroura*
Sparrow*	*Spizella* spp.
House sparrow*	*Passer domesticus*
European starling*	*Sturnus vulgaris*
Osprey*	*Pandion haliaetus*
Goldfinch*	*Carduelis tristis*
Chimney swift*	*Charadrius vociferus*
Pigeon*	*Columba livia*
Herring gull*	*Larus argentatus*
Rough-winged swallow	*Stelgidopteryx serripennis*
Blue jay	*Cyanocitta cristata*
Herptiles	
Green frog	*Rana clamitans*
Bull frog	*Rana catesbeiana*
Eastern garter snake	*Thamnophis sirtalis sirtalis*
American toad	*Bufo americanus*

Note:
*Observed during ARCADIS' site visit on July 27, 2009. Observations included visual sighting, tracks, den, and/or scat.

TABLE 10
COMPARISON OF SURFACE SOIL DATA TO NYSDEC ECOLOGICAL SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	Protection of		B-8D	B-9	B-10	B-17	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
Sample Depth(Feet):	Ecological		0.2 - 1.1	0 - 0.9	0 - 0.5	0 - 1	0 - 0.17	0 - 0.17	0 - 0.17	0 - 0.17	0 - 0.17	0 - 0.17	0 - 0.17
Date Collected:	Resources SCOs [1]	Units	05/12/06	05/11/06	05/11/06	10/14/08	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04	04/06/04
Detected VOCs													
Acetone	2.2	mg/kg	NA	0.027 U [0.026 U]	0.059	0.030	0.013 U	0.015 U [0.014 U]	0.012 U	0.0050 J	0.0060 J	0.012 U	0.013 U
Benzene	70	mg/kg	NA	0.038 [0.032]	0.0012 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Chloroform	12	mg/kg	NA	0.011 UJ [0.011 UJ]	0.00069 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Ethylbenzene	- -	mg/kg	NA	0.0074 J [0.0074 J]	0.0053 U	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Isopropylbenzene	- -	mg/kg	NA	0.0033 J [0.0036 J]	0.0053 U	NA	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Methyl Acetate	- -	mg/kg	NA	0.011 U [0.011 U]	0.0053 U	NA	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.0030 J	0.0020 J	0.013 U
Methyl Ethyl Ketone	100	mg/kg	NA	0.027 U [0.026 U]	0.0052 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Methylcyclohexane	- -	mg/kg	NA	0.097 [0.098]	0.0054	NA	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Styrene	- -	mg/kg	NA	0.011 U [0.0043 J]	0.0053 U	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Toluene	36	mg/kg	NA	0.028 [0.025]	0.00077 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Xylene (total)	0.26	mg/kg	NA	0.089 [0.082]	0.016 U	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U	0.013 U
Total BTEX	- -	mg/kg	NA	0.16 J [0.15 J]	0.0020 J	ND	ND	ND [ND]	ND	ND	ND	ND	ND
Total VOCs	- -	mg/kg	NA	0.26 J [0.25 J]	0.072 J	0.030	ND	ND [ND]	ND	0.0050 J	0.0090 J	0.0020 J	ND
Detected SVOCs													
1,1'-Biphenyl	- -	mg/kg	NA	38 J [21 J]	0.037 J	NA	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U	0.44 U
2,4-Dimethylphenol	- -	mg/kg	NA	18 J [13 J]	0.40 U	0.39 U	0.86 U	0.97 U [0.89 U]	2.0 UJ	0.40 UJ	0.40 UJ	0.40 UJ	0.44 UJ
2-Methylnaphthalene	- -	mg/kg	NA	170 J [74]	0.21 J	NA	R	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U	0.44 U
2-Methylphenol	- -	mg/kg	NA	8.7 J [5.8 J]	0.40 U	NA	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U	0.44 U
4-Methylphenol	- -	mg/kg	NA	23 J [18 J]	0.80 U	NA	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U	0.44 U
Acenaphthene	20	mg/kg	NA	**160 J [72 J]**	0.049 J	0.11 J	0.86 U	0.97 U [0.24 J]	0.91 J	0.40 U	0.40 U	0.40 U	0.44 U
Acenaphthylene	- -	mg/kg	NA	140 J [100 J]	0.21 J	0.026 J	1.2 J	0.96 J [0.72 J]	2.0 J	0.40 U	0.40 U	0.10 J	0.27 J
Anthracene	- -	mg/kg	NA	430 [240 J]	0.41	0.34 J	0.91 J	1.5 [1.4]	3.3	0.40 U	0.090 J	0.20 J	0.31 J
Benzo(a)anthracene	- -	mg/kg	NA	590 J [390 J]	1.3	1.3	4.2 J	4.1 [4.0]	8.7	0.096 J	0.24 J	0.75	1.4
Benzo(a)pyrene	2.6	mg/kg	NA	**470 J [310 J]**	1.5	1.8	**4.4 J**	**4.0 [3.6]**	**8.4**	0.11 J	0.25 J	0.78	1.6
Benzo(b)fluoranthene	- -	mg/kg	NA	430 J [320 J]	1.4	1.3	4.6 J	3.4 [3.9]	9.0	0.13 J	0.28 J	0.88	1.5
Benzo(g,h,i)perylene	- -	mg/kg	NA	190 J [110 J]	0.78	0.50	3.4 J	2.8 [2.3]	7.1	0.082 J	0.18 J	0.53	1.1
Benzo(k)fluoranthene	- -	mg/kg	NA	360 J [200 J]	1.5	2.0	3.5 J	2.9 [2.8]	6.9	0.11 J	0.24 J	0.71	1.2
Bis(2-ethylhexyl) phthalate	- -	mg/kg	NA	120 U [61 U]	0.52 UJ	0.39 U	0.86 U	0.97 U [0.89 U]	0.86 J	0.25 J	0.11 J	0.083 J	0.18 J
Carbazole	- -	mg/kg	NA	220 J [140]	0.18 J	NA	0.19 J	0.36 J [0.45 J]	1.7 J	0.40 U	0.40 U	0.11 J	0.14 J
Chrysene	- -	mg/kg	NA	540 J [370 J]	1.2	1.2	4.1	4.0 [3.7]	8.7	0.12 J	0.29 J	0.91	1.6
Dibenzo(a,h)anthracene	- -	mg/kg	NA	90 J [53 J]	0.25 J	0.22	1.4 J	1.2 [1.1]	2.5	0.40 U	0.40 U	0.23 J	0.51
Dibenzofuran	- -	mg/kg	NA	230 J [130 J]	0.18 J	NA	0.86 U	0.36 J [0.30 J]	0.73 J	0.40 U	0.40 U	0.40 U	0.44 U
Di-n-butyl phthalate	- -	mg/kg	NA	6.9 J [3.2 J]	0.046 J	0.39 U	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U	0.44 U
Fluoranthene	- -	mg/kg	NA	1,500 D [1,100 D]	2.4	1.2	6.6 J	7.8 [7.0]	18	0.23 J	0.52	1.7	2.5
Fluorene	30	mg/kg	NA	**290 J [140 J]**	0.17 J	0.080 J	0.86 U	0.57 J [0.51 J]	1.2 J	0.40 U	0.40 U	0.40 U	0.44 U
Indeno(1,2,3-cd)pyrene	- -	mg/kg	NA	230 J [140 J]	0.98	0.63	3.9 J	3.1 [2.7]	7.2	0.086 J	0.20 J	0.59	1.2
Naphthalene	- -	mg/kg	NA	240 J [140 J]	0.37 J	0.068 J	0.28 J	0.73 J [0.34 J]	1.1 J	0.40 U	0.40 U	0.40 U	0.44 U
NYSDOH BAP TEQ(-NDs Excluded)	- -	mg/kg	NA	NA	NA	NA	7.2	6.3 [5.8]	14	0.14	0.33	1.3	2.6

See Notes on Page 5.

TABLE 10
COMPARISON OF SURFACE SOIL DATA TO NYSDEC ECOLOGICAL SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Protection of Ecological Resources SCOs (1)	Units	B-8D 0.2 - 1.1 05/12/06	B-9 0 - 0.9 05/11/06	B-10 0 - 0.5 05/11/06	B-17 0 - 1 10/14/08	SS-01 0 - 0.17 04/06/04	SS-02 0 - 0.17 04/06/04	SS-03 0 - 0.17 04/06/04	SS-04 0 - 0.17 04/06/04	SS-05 0 - 0.17 04/06/04	SS-06 0 - 0.17 04/06/04	SS-07 0 - 0.17 04/06/04
Detected SVOCs (continued)													
Phenanthrene	- -	mg/kg	NA	1,800 D [1,200 D]	1.4	0.82	2.3 J	4.9 [4.2]	11	0.099 J	0.29 J	0.81	0.94
Phenol	30	mg/kg	NA	10 J [9.4 J]	0.40 U	0.39 U	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U	0.44 U
Pyrene	- -	mg/kg	NA	1,200 D [830 JD]	1.9	1.2	6.0 J	6.4 [6.1]	15	0.19 J	0.43	1.3	2.2
Total CPAHs	- -	mg/kg	NA	2,700 J [1,800 J]	8.1 J	8.5	26 J	23 [22]	51	0.65 J	1.5 J	4.9 J	9.0
Total PAHs	- -	mg/kg	NA	8,800 J [5,800 J]	16 J	13 J	47 J	48 J [45 J]	110 J	1.3 J	3.0 J	9.5 J	16 J
Total SVOCs	- -	mg/kg	NA	9,400 J [6,100 J]	17 J	13 J	47 J	49 J [45 J]	110 J	1.5 J	3.1 J	9.7 J	17 J
Detected PCBs													
None Detected	- -	- -	NA	NA	NA	NA	- -	- - [- -]	- -	NA	NA	NA	NA
Detected Pesticides													
4,4'-DDD	0.0033	mg/kg	NA	NA	NA	NA	**0.0070 JN**	0.0097 U [0.0089 U]	**0.027 JN**	NA	NA	NA	NA
4,4'-DDT	0.0033	mg/kg	NA	NA	NA	NA	**0.0075 J**	**0.011 J [0.0080 J]**	**0.022**	NA	NA	NA	NA
alpha-Chlordane	1.3	mg/kg	NA	NA	NA	NA	0.0044 U	0.0050 U [0.0046 U]	0.0041 J	NA	NA	NA	NA
Dieldrin	0.006	mg/kg	NA	NA	NA	NA	0.0086 U	0.0097 U [0.0089 U]	**0.28 D**	NA	NA	NA	NA
Endrin	0.014	mg/kg	NA	NA	NA	NA	**0.080 JN**	**0.086 JN [0.15 DJN]**	0.0080 U	NA	NA	NA	NA
Endrin Ketone	- -	mg/kg	NA	NA	NA	NA	0.0086 U	0.025 J [0.0089 U]	0.031 J	NA	NA	NA	NA
Methoxchlor	- -	mg/kg	NA	NA	NA	NA	0.041 J	0.034 JN [0.043 J]	0.054 J	NA	NA	NA	NA
Detected Inorganics													
Aluminum	- -	mg/kg	NA	NA	NA	NA	4,170	3,670 [3,370]	6,930	3,120	2,440	4,060	11,700
Antimony	- -	mg/kg	NA	NA	NA	NA	0.740 BJ	0.480 BJ [0.440 BJ]	1.00 BJ	0.270 BJ	0.800 BJ	0.600 BJ	0.840 BJ
Arsenic	13	mg/kg	NA	NA	NA	NA	4.50	7.40 [6.50]	6.80	2.50	6.70	3.80	7.20
Barium	433	mg/kg	NA	NA	NA	NA	45.9	62.3 [55.8]	88.6	21.9 B	171	51.8	139
Beryllium	10	mg/kg	NA	NA	NA	NA	0.260 B	0.300 B [0.280 B]	0.480 B	0.180 B	0.220 B	0.280 B	0.610 B
Cadmium	4	mg/kg	NA	NA	NA	NA	0.180 B	0.420 B [0.330 B]	0.830	0.0500 U	0.370 B	0.290 B	0.190 B
Calcium	- -	mg/kg	NA	NA	NA	NA	22,000	78,000 [71,200]	25,200	49,400	126,000	76,600	35,600
Chromium	- -	mg/kg	NA	NA	NA	NA	9.50	8.60 [8.50]	16.9	6.00	7.70	10.3	23.4
Cobalt	- -	mg/kg	NA	NA	NA	NA	2.90	4.00 [3.80]	5.10	2.20	3.30	3.80	7.80
Copper	50	mg/kg	NA	NA	NA	NA	24.2	24.3 [18.9]	47.5	8.60	25.4	20.6	38.2
Cyanide	- -	mg/kg	491 J	6.60 J [13.5 J]	0.840 J	NA	6.70	1.20 [1.20]	2.90	0.250 B	0.300 B	0.410 B	0.350 B
Iron	- -	mg/kg	NA	NA	NA	NA	8,920	8,990 [8,340]	18,300	6,490	7,040	10,300	18,500
Lead	63	mg/kg	NA	NA	NA	NA	40.8	49.7 [45.4]	**221**	15.6	**200**	**160**	**166**
Magnesium	- -	mg/kg	NA	NA	NA	NA	9,720	37,000 [34,300]	10,800	21,700	60,500	34,600	20,200
Manganese	1,600	mg/kg	NA	NA	NA	NA	220	417 [375]	358	256	520	388	527
Mercury	0.18	mg/kg	NA	NA	NA	NA	0.120	0.100 [0.0990]	**0.210**	0.0360 U	**0.220**	0.150	**0.210**
Nickel	30	mg/kg	NA	NA	NA	NA	9.00	11.3 [10.4]	21.4	5.00	7.30	9.70	20.3
Potassium	- -	mg/kg	NA	NA	NA	NA	398 BJ	781 J [751 J]	1,100 J	405 BJ	618 J	1,080 J	3,250 J
Selenium	3.9	mg/kg	NA	NA	NA	NA	0.870	0.570 B [0.740]	1.00	0.250 B	0.520 B	0.520 B	0.820
Silver	2	mg/kg	NA	NA	NA	NA	0.0900 U	0.100 U [0.0900 U]	0.180 B	0.0800 U	0.160 B	0.0800 U	0.250 B
Sodium	- -	mg/kg	NA	NA	NA	NA	160 B	213 B [201 B]	212 B	237 B	293 B	376 B	458 B
Vanadium	- -	mg/kg	NA	NA	NA	NA	25.1	25.8 [23.4]	22.2	11.3	13.3	19.3	44.2
Zinc	109	mg/kg	NA	NA	NA	NA	81.1	57.8 [49.7]	**379**	44.0	98.5	81.7	**128**

See Notes on Page 5.

TABLE 10
COMPARISON OF SURFACE SOIL DATA TO NYSDEC ECOLOGICAL SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth(Feet): Date Collected:	Protection of Ecological Resources SCOs (1)	Units	SS-08 0 - 0.17 04/06/04	SS-09 0 - 0.17 10/26/07	SS-10 0 - 0.17 10/26/07	SS-11 0 - 0.17 10/26/07	SS-12 0 - 0.17 10/26/07
Detected VOCs							
Acetone	2.2	mg/kg	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Benzene	70	mg/kg	0.014 U	0.0012 U [0.0012 U]	0.0012 U	0.0011 UJ	0.0011 U
Chloroform	12	mg/kg	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Ethylbenzene	- -	mg/kg	0.014 U	0.0048 U [0.0050 U]	0.0048 U	0.0044 UJ	0.0043 U
Isopropylbenzene	- -	mg/kg	0.014 U	NA	NA	NA	NA
Methyl Acetate	- -	mg/kg	0.014 U	NA	NA	NA	NA
Methyl Ethyl Ketone	100	mg/kg	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Methylcyclohexane	- -	mg/kg	0.014 U	NA	NA	NA	NA
Styrene	- -	mg/kg	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Toluene	36	mg/kg	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Xylene (total)	0.26	mg/kg	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Total BTEX	- -	mg/kg	ND	ND [ND]	ND	ND	ND
Total VOCs	- -	mg/kg	ND	ND [ND]	ND	ND	ND
Detected SVOCs							
1,1'-Biphenyl	- -	mg/kg	0.45 U	NA	NA	NA	NA
2,4-Dimethylphenol	- -	mg/kg	0.45 UJ	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
2-Methylnaphthalene	- -	mg/kg	0.45 U	0.42 U [0.42 U]	0.014 J	0.38 U	0.38 U
2-Methylphenol	- -	mg/kg	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
4-Methylphenol	- -	mg/kg	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.0076 J
Acenaphthene	20	mg/kg	0.45 U	0.42 U [0.0088 J]	0.014 J	0.38 U	0.38 U
Acenaphthylene	- -	mg/kg	0.095 J	0.036 J [0.051 J]	0.084 J	0.030 J	0.028 J
Anthracene	- -	mg/kg	0.099 J	0.025 J [0.040 J]	0.060 J	0.019 J	0.032 J
Benzo(a)anthracene	- -	mg/kg	0.56	0.17 [0.24]	0.28	0.17	0.15
Benzo(a)pyrene	2.6	mg/kg	0.62	0.19 [0.28]	0.29	0.17	0.17
Benzo(b)fluoranthene	- -	mg/kg	0.56	0.21 [0.34]	0.23	0.18	0.17
Benzo(g,h,i)perylene	- -	mg/kg	0.38 J	0.11 J [0.12 J]	0.11 J	0.19 J	0.11 J
Benzo(k)fluoranthene	- -	mg/kg	0.62	0.22 [0.30]	0.34	0.24	0.17
Bis(2-ethylhexyl) phthalate	- -	mg/kg	0.11 J	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Carbazole	- -	mg/kg	0.45 U	0.012 J [0.022 J]	0.028 J	0.0087 J	0.012 J
Chrysene	- -	mg/kg	0.60	0.20 J [0.28 J]	0.39 J	0.19 J	0.16 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.16 J	0.031 J [0.043]	0.040 J	0.052	0.034 J
Dibenzofuran	- -	mg/kg	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Di-n-butyl phthalate	- -	mg/kg	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Fluoranthene	- -	mg/kg	1.1	0.41 J [0.55]	0.68	0.36 J	0.34 J
Fluorene	30	mg/kg	0.45 U	0.42 U [0.012 J]	0.035 J	0.38 U	0.010 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.44 J	0.11 [0.12]	0.11	0.16	0.11
Naphthalene	- -	mg/kg	0.45 U	0.0090 J [0.013 J]	0.019 J	0.38 U	0.014 J
NYSDOH BAP TEQ(-NDs Excluded)	- -	mg/kg	0.95	NA	NA	NA	NA

See Notes on Page 5.

TABLE 10
COMPARISON OF SURFACE SOIL DATA TO NYSDEC ECOLOGICAL SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	Protection of		SS-08	SS-09	SS-10	SS-11	SS-12
Sample Depth(Feet):	Ecological		0 - 0.17	0 - 0.17	0 - 0.17	0 - 0.17	0 - 0.17
Date Collected:	Resources SCOs (1)	Units	04/06/04	10/26/07	10/26/07	10/26/07	10/26/07
Detected SVOCs (continued)							
Phenanthrene	- -	mg/kg	0.39 J	0.11 J [0.20 J]	0.44	0.078 J	0.11 J
Phenol	30	mg/kg	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Pyrene	- -	mg/kg	0.90	0.34 J [0.47]	0.74	0.31 J	0.30 J
Total CPAHs	- -	mg/kg	3.6 J	1.1 J [1.6 J]	1.7 J	1.2 J	0.96 J
Total PAHs	- -	mg/kg	6.5 J	2.2 J [3.1 J]	3.9 J	2.2 J	1.9 J
Total SVOCs	- -	mg/kg	6.6 J	2.2 J [3.1 J]	3.9 J	2.2 J	1.9 J
Detected PCBs							
None Detected	- -	- -	NA	NA	NA	NA	NA
Detected Pesticides							
4,4'-DDD	0.0033	mg/kg	NA	NA	NA	NA	NA
4,4'-DDT	0.0033	mg/kg	NA	NA	NA	NA	NA
alpha-Chlordane	1.3	mg/kg	NA	NA	NA	NA	NA
Dieldrin	0.006	mg/kg	NA	NA	NA	NA	NA
Endrin	0.014	mg/kg	NA	NA	NA	NA	NA
Endrin Ketone	- -	mg/kg	NA	NA	NA	NA	NA
Methoxchlor	- -	mg/kg	NA	NA	NA	NA	NA
Detected Inorganics							
Aluminum	- -	mg/kg	8,850	NA	NA	NA	NA
Antimony	- -	mg/kg	0.340 BJ	NA	NA	NA	NA
Arsenic	13	mg/kg	3.60	NA	NA	NA	NA
Barium	433	mg/kg	69.6	NA	NA	NA	NA
Beryllium	10	mg/kg	0.400 B	NA	NA	NA	NA
Cadmium	4	mg/kg	0.0500 U	NA	NA	NA	NA
Calcium	- -	mg/kg	21,400	NA	NA	NA	NA
Chromium	- -	mg/kg	13.5	NA	NA	NA	NA
Cobalt	- -	mg/kg	4.60	NA	NA	NA	NA
Copper	50	mg/kg	15.8	NA	NA	NA	NA
Cyanide	- -	mg/kg	0.330 B	0.500 U [0.500 U]	0.500 U	0.500 U	0.500 U
Iron	- -	mg/kg	12,900	NA	NA	NA	NA
Lead	63	mg/kg	39.3	NA	NA	NA	NA
Magnesium	- -	mg/kg	9,130	NA	NA	NA	NA
Manganese	1,600	mg/kg	357	NA	NA	NA	NA
Mercury	0.18	mg/kg	0.0820	NA	NA	NA	NA
Nickel	30	mg/kg	9.70	NA	NA	NA	NA
Potassium	- -	mg/kg	1,220 J	NA	NA	NA	NA
Selenium	3.9	mg/kg	0.270 B	NA	NA	NA	NA
Silver	2	mg/kg	0.0900 U	NA	NA	NA	NA
Sodium	- -	mg/kg	337 B	NA	NA	NA	NA
Vanadium	- -	mg/kg	24.8	NA	NA	NA	NA
Zinc	109	mg/kg	59.2	NA	NA	NA	NA

See Notes on Page 5.

TABLE 10
COMPARISON OF SURFACE SOIL DATA TO NYSDEC ECOLOGICAL SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

(1) NYSDEC (2006) Part 375-6 Soil Cleanup Objectives for Ecological Resources taken from New York State Brownfield Cleanup Program, Development of Soil Cleanup Objectives, Technical Support Document.

Results reported in milligrams per kilogram (mg/Kg); also expressed as parts per million (ppm).

SCO = Soil Cleanup Objectives.

NA = Not Analyzed.

Exceedances of ecological SCOs are bolded and shaded.

-- = Criteria not available.

Data Qualifiers:

Qualifier Type	Lab Qualifiers	Definition
Inorganic	B	Indicates an estimated value between the instrument detection limit (IDL) and the practical quantitation limit (PQL).
Inorganic	J	The associated numerical value is an estimated concentration.
Inorganic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
Organic	B	The compound has been found in the sample as well as its associated blank.
Organic	D	Concentration is based on a diluted sample analysis.
Organic	E	The compound was quantitated above the calibration range.
Organic	J	The associated numerical value is an estimated concentration.
Organic	ND	Not Detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	Protection of		B-1B	B-3	B-4B	B-5	B-6	B-7	B-8B	B-8C	B-9	B-11	B-11	B-12	B-12
Sample Depth (Feet):	Ecological		4 - 6	4 - 6	4 - 6	6 - 8	2 - 2.9	4 - 4.6	2 - 2.9	2 - 2.6	2 - 2.3	2 - 4	4 - 4.9	4 - 6	6 - 6.9
Date Collected:	Resources SCOs	Units	12/10/03	12/10/03	12/11/03	12/10/03	05/09/06	05/09/06	05/12/06	05/12/06	05/11/06	10/18/07	10/18/07	10/11/07	10/11/07
Detected VOCs															
1,1-Dichloroethane	- -	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	0.0062 U	0.0057 U	0.0056 U	0.0057 U
1,2-Dichloropropane	- -	mg/kg	5.0	NA	NA	NA	0.013 UJ	0.0070 UJ	NA	0.0089 UJ	0.0063 UJ	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Acetone	2.2	mg/kg	1.2 U	NA	NA	NA	1.2	0.43	NA	0.022 U	0.016 U	0.067	0.064	0.0056 U	0.0057 U
Benzene	70	mg/kg	8.2	0.048	0.0030 J	**320 D [540]**	0.013 U	0.00095 J	NA	0.0026 J	0.0038 J	0.0012 U	0.0011 U	0.0011 U	0.0011 U
Carbon Disulfide	- -	mg/kg	0.48 U	NA	NA	NA	0.029	0.0072	NA	0.0089 U	0.0063 U	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Chloroform	12	mg/kg	0.48 U	NA	NA	NA	0.013 UJ	0.0070 UJ	NA	0.0089 UJ	0.0063 UJ	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Ethylbenzene	- -	mg/kg	1.8	0.034	0.0020 J	19 [22]	0.013 U	0.0070 U	NA	0.0089 U	0.0033 J	0.0050 U	0.0046 U	0.0044 UJ	0.0046 U
Isopropylbenzene	- -	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	NA	NA	NA	NA
Methyl Acetate	- -	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	NA	NA	NA	NA
Methyl Ethyl Ketone	100	mg/kg	1.2 UJ	NA	NA	NA	0.16	0.042	NA	0.022 U	0.016 U	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Methylcyclohexane	- -	mg/kg	0.15 J	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.010	NA	NA	NA	NA
Methylene Chloride	- -	mg/kg	0.48 U	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0063 U	0.0037 U	0.0034 U	0.0033 U	0.0034 U
Styrene	- -	mg/kg	6.5	NA	NA	NA	0.013 U	0.0070 U	NA	0.0089 U	0.0014 J	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Toluene	36	mg/kg	10	0.026	0.0070 U	**240 D [350]**	0.0058 J	0.0029 J	NA	0.0011 J	0.0057 J	0.0062 U	0.0057 U	0.0056 UJ	0.0057 U
Xylene (total)	0.26	mg/kg	**31**	0.12	0.0030 J	**340 [400]**	0.039 UJ	0.021 UJ	NA	0.027 U	0.023	0.0062 U	0.0057 U	0.0056 U	0.0057 U
Total BTEX	- -	mg/kg	51	0.23	0.0080 J	920 [1,300]	0.0058 J	0.0039 J	NA	0.0037 J	0.036 J	ND	ND	ND	ND
Total VOCs	- -	mg/kg	63 J	0.23	0.0080 J	920 [1,300]	1.4 J	0.48 J	NA	0.0037 J	0.047 J	0.067	0.064	ND	ND
Detected SVOCs															
1,1'-Biphenyl	- -	mg/kg	390	NA	NA	NA	0.24 J	2.4 U	NA	0.19 J	13 J	NA	NA	NA	NA
2,4-Dimethylphenol	- -	mg/kg	120 U	NA	NA	NA	0.31 J	2.4 U	NA	0.30 J	120 U	0.42 U	0.38 U	0.39 U	0.39 U
2-Methylnaphthalene	- -	mg/kg	1,300	9.1 J	17 U	480 [240]	1.5 J	2.4 U	NA	0.77 J	53 J	0.011 J	0.38 U	0.39 U	0.39 U
2-Methylphenol	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	0.42 U	0.38 U	0.39 U	0.39 U
4-Methylphenol	- -	mg/kg	120 U	NA	NA	NA	0.45 J	0.38 J	NA	0.46 J	240 U	0.42 U	0.38 U	0.39 U	0.39 U
Acenaphthene	20	mg/kg	**390**	**22**	2.6 J	**92 [55 J]**	1.7 J	2.4 U	NA	0.46 J	**86 J**	0.42 U	0.38 U	0.39 U	0.39 U
Acenaphthylene	- -	mg/kg	1,800	46	11 J	120 [82 J]	4.4	2.4 U	NA	4.0	22 J	0.054 J	0.38 U	0.39 U	0.014 J
Acetophenone	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	0.35 J	120 U	NA	NA	NA	NA
Anthracene	- -	mg/kg	4,000 D	82	22	380 [260]	16	2.4 U	NA	5.6	160	0.074 J	0.020 J	0.39 U	0.017 J
Benzaldehyde	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	NA	NA	NA	NA
Benzo(a)anthracene	- -	mg/kg	2,400 D	44	53	270 [170]	20	0.42 J	NA	34	200	0.44 J	0.091 J	0.028 J	0.056 J
Benzo(a)pyrene	2.6	mg/kg	**1,500**	**31**	**50**	**260 [150]**	**27**	0.52 J	NA	**25**	**160**	0.50 J	0.092 J	0.024 J	0.054 J
Benzo(b)fluoranthene	- -	mg/kg	1,400	24	46	190 [120]	32	0.46 J	NA	54 EJ	120	0.53 J	0.081 J	0.018 J	0.045 J
Benzo(g,h,i)perylene	- -	mg/kg	950 J	10 J	24	210 J [91 J]	7.6	0.24 J	NA	15	65 J	0.28 J	0.042 J	0.020 J	0.038 J
Benzo(k)fluoranthene	- -	mg/kg	860	26	38	200 [120]	17	0.55 J	NA	19	150 J	0.57 J	0.084 J	0.026 J	0.054 J
Bis(2-ethylhexyl) phthalate	- -	mg/kg	120 U	NA	NA	NA	2.7 UJ	2.4 UJ	NA	2.2 UJ	120 U	0.13 J	0.15 J	0.39 U	0.19 J
Butylbenzyl phthalate	- -	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	0.42 U	0.38 U	0.39 U	0.39 U
Carbazole	- -	mg/kg	1,300	NA	NA	NA	12 J	2.4 UJ	NA	1.3 J	83 J	0.020 J	0.38 U	0.39 U	0.39 U
Chrysene	- -	mg/kg	1,600	36	45	240 [150]	17	0.35 J	NA	32	190	0.40 J	0.080 J	0.038 J	0.062 J
Dibenzo(a,h)anthracene	- -	mg/kg	570	8.1 J	15 J	42 J [23 J]	4.6	2.4 U	NA	6.2	32 J	0.16 J	0.038 U	0.039 U	0.011 J
Dibenzofuran	- -	mg/kg	1,500	NA	NA	NA	2.9	2.4 U	NA	0.88 J	80 J	0.017 J	0.38 U	0.39 U	0.39 U

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	Protection of		B-1B	B-3	B-4B	B-5	B-6	B-7	B-8B	B-8C	B-9	B-11	B-11	B-12	B-12
Sample Depth (Feet):	Ecological		4 - 6	4 - 6	4 - 6	6 - 8	2 - 2.9	4 - 4.6	2 - 2.9	2 - 2.6	2 - 2.3	2 - 4	4 - 4.9	4 - 6	6 - 6.9
Date Collected:	Resources SCOs	Units	12/10/03	12/10/03	12/11/03	12/10/03	05/09/06	05/09/06	05/12/06	05/12/06	05/11/06	10/18/07	10/18/07	10/11/07	10/11/07
Detected SVOCs (Cont.)															
Di-n-butyl phthalate	- -	mg/kg	120 U	NA	NA	NA	0.37 J	2.4 U	NA	0.33 J	7.2 J	0.42 U	0.38 U	0.39 U	0.39 U
Fluoranthene	- -	mg/kg	5,100 D	87	80	790 [520]	66 D	0.80 J	NA	54 D	470	0.59 J	0.16 J	0.047 J	0.092 J
Fluorene	30	mg/kg	**2,400 D**	**110**	12 J	**330 [200]**	7.4	2.4 U	NA	1.3 J	**110 J**	0.42 U	0.38 U	0.39 U	0.39 U
Indeno(1,2,3-cd)pyrene	- -	mg/kg	1,400	16 J	34	260 J [110 J]	11	0.26 J	NA	19	79 J	0.36 J	0.050 J	0.013 J	0.036 J
Naphthalene	- -	mg/kg	5,100 D	26	4.5 J	3,300 D [1,100]	1.5 J	2.4 U	NA	1.6 J	86 J	0.042 J	0.38 U	0.012 J	0.024 J
Phenanthrene	- -	mg/kg	7,300 D	190 D	55	1,200 [740]	49 D	0.38 J	NA	12	570	0.22 J	0.11 J	0.034 J	0.055 J
Phenol	30	mg/kg	120 U	NA	NA	NA	2.7 U	2.4 U	NA	2.2 U	120 U	0.42 U	0.38 U	0.39 U	0.39 U
Pyrene	- -	mg/kg	4,000 D	71	72	610 [380]	30	0.60 J	NA	48 EJ	360	0.54 J	0.15 J	0.047 J	0.086 J
Total PAHs	- -	mg/kg	42,000 J	840 J	560 J	9,000 J [4,500 J]	310 J	4.6 J	NA	330 J	2,900 J	4.8 J	0.96 J	0.31 J	0.64 J
Total SVOCs	- -	mg/kg	45,000 J	840 J	560 J	9,000 J [4,500 J]	330 J	5.0 J	NA	340 J	3,100 J	4.9 J	1.1 J	0.31 J	NA
Detected PCBs															
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides															
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics															
Aluminum	- -	mg/kg	3,800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	mg/kg	**19.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	433	mg/kg	33.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	10	mg/kg	0.590 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	mg/kg	0.100 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	mg/kg	37,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	mg/kg	**3.40**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	mg/kg	2.20	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	mg/kg	26.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	- -	mg/kg	14.9 J	1.20 J	8.40 J	348 J [23.7 J]	0.280 UJ	0.250 UJ	3.40 J	251 J	15.1 J	35.0	102	0.500 U	0.500 U
Cyanide, Free	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	mg/kg	5,830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	mg/kg	30.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	mg/kg	1,220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1600	mg/kg	48.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	mg/kg	**0.360 J**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	mg/kg	6.50	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	mg/kg	194 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	mg/kg	1.90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	mg/kg	7.40	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	mg/kg	27.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Protection of Ecological Resources SCOs	Units	B-13 0 - 4 10/11/07	B-13 4 - 7.3 10/11/07	B-14 2 - 4 10/18/07	B-14 4 - 5.7 10/18/07	B-15 4 - 6 10/11/07	B-15 6 - 7.7 10/11/07	B-16 2 - 4 10/11/07	B-16 4 - 6 10/11/07	B-18 2 - 3.5 10/14/08	B-19A 5 - 6 10/15/08	B-20 4 - 5 10/14/08	B-21 4 - 5.5 10/14/08	B-22 3 - 4.4 10/14/08
Detected VOCs															
1,1-Dichloroethane	- -	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
1,2-Dichloropropane	- -	mg/kg	0.0013 U	0.0013 UJ	0.0011 U	0.0011 U	0.0010 U	0.0012 UJ	0.0010 U	1.2 U	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Acetone	2.2	mg/kg	0.0063 U	0.0064 UJ	0.049	0.046	0.0052 U	0.0061 UJ	0.0065 U	6.1 U	0.0033 UB	23 UJ	0.036	0.056	0.0042 UB
Benzene	70	mg/kg	0.0013 U	0.0013 UJ	0.0011 U	0.0011 U	0.0010 U	0.0012 UJ	0.0010 U	0.77 J	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Carbon Disulfide	- -	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0020	0.0012 J	0.0011 U
Chloroform	12	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Ethylbenzene	- -	mg/kg	0.0050 U	0.0051 UJ	0.0044 U	0.0044 U	0.0042 U	0.0049 UJ	0.0042 U	4.9 U	0.0011 U	3.4 J	0.0013 U	0.0013 U	0.0011 U
Isopropylbenzene	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	100	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	6.1 U	0.0011 U	4.7 UJ	0.0041	0.0074	0.0011 UJ
Methylcyclohexane	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	- -	mg/kg	0.0038 U	0.0038 UJ	0.0033 U	0.0033 U	0.0031 U	0.0037 UJ	0.0031 U	3.7 U	0.0011 UB	4.7 UJ	0.0013 UB	0.0013 UB	0.0011 UB
Styrene	- -	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	0.48 J	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Toluene	36	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	0.84 J	0.0011 U	4.7 UJ	0.0013 U	0.0013 U	0.0011 U
Xylene (total)	0.26	mg/kg	0.0063 U	0.0064 UJ	0.0055 U	0.0055 U	0.0052 U	0.0061 UJ	0.0052 U	**0.81 J**	0.0011 U	**25 J**	0.0013 U	0.0013 U	0.0011 U
Total BTEX	- -	mg/kg	ND	ND	ND	ND	ND	ND	ND	2.4 J	ND	28 J	ND	ND	ND
Total VOCs	- -	mg/kg	ND	ND	0.049	0.046	ND	ND	ND	2.9 J	ND	28 J	0.042	0.065 J	ND
Detected SVOCs															
1,1'-Biphenyl	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	0.93 J	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
2-Methylnaphthalene	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.013 J	0.83 UJ	0.72 UJ	42	NA	NA	NA	NA	NA
2-Methylphenol	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	NA	NA	NA	NA	NA
4-Methylphenol	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	0.90 J	NA	NA	NA	NA	NA
Acenaphthene	20	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	19 J	0.030 J	3.3 J	0.017 J	0.46 U	0.38 U
Acenaphthylene	- -	mg/kg	0.44 UJ	0.44 UJ	0.021 J	0.37 U	0.044 J	0.83 UJ	0.019 J	77	0.052 J	16	0.019 J	0.46 U	0.38 U
Acetophenone	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	- -	mg/kg	0.44 UJ	0.44 UJ	0.033 J	0.012 J	0.042 J	0.83 UJ	0.032 J	210	0.11 J	15	0.016 J	0.46 U	0.011 J
Benzaldehyde	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	- -	mg/kg	0.014 J	0.019 J	0.28 J	0.052 J	0.21	0.033 J	0.14 J	190	0.47	18	0.080	0.046 U	0.044
Benzo(a)pyrene	2.6	mg/kg	0.014 J	0.016 J	0.33 J	0.065 J	0.20	0.044 J	0.21 J	**180**	0.66	**16**	0.10	0.0096 J	0.058
Benzo(b)fluoranthene	- -	mg/kg	0.014 J	0.014 J	0.31 J	0.054 J	0.19	0.049 J	0.22 J	180	0.73	11	0.099	0.046 U	0.050
Benzo(g,h,i)perylene	- -	mg/kg	0.0072 J	0.011 J	0.22 J	0.052 J	0.059 J	0.027 J	0.068 J	91	0.15 J	2.7 J	0.045 J	0.46 U	0.018 J
Benzo(k)fluoranthene	- -	mg/kg	0.013 J	0.019 J	0.32 J	0.055 J	0.23	0.056 J	0.28 J	210	0.78	18	0.13	0.013 J	0.061
Bis(2-ethylhexyl) phthalate	- -	mg/kg	0.44 UJ	0.15 J	0.16 J	0.25 J	0.10 J	0.83 UJ	0.26 J	41 U	0.26 J	4.1 U	0.42 J	0.46 U	0.28 J
Butylbenzyl phthalate	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
Carbazole	- -	mg/kg	0.44 UJ	0.44 UJ	0.014 J	0.37 U	0.016 J	0.83 UJ	0.72 UJ	72	NA	NA	NA	NA	NA
Chrysene	- -	mg/kg	0.016 J	0.022 J	0.26 J	0.059 J	0.22 J	0.038 J	0.17 J	180	0.46	16	0.096 J	0.46 U	0.055 J
Dibenzo(a,h)anthracene	- -	mg/kg	0.044 UJ	0.044 UJ	0.037 U	0.037 U	0.024 J	0.083 UJ	0.072 UJ	38	0.093 J	1.8	0.011 J	0.046 U	0.011 J
Dibenzofuran	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.010 J	0.83 UJ	0.72 UJ	110	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Protection of Ecological Resources SCOs	Units	B-13 0 - 4 10/11/07	B-13 4 - 7.3 10/11/07	B-14 2 - 4 10/18/07	B-14 4 - 5.7 10/18/07	B-15 4 - 6 10/11/07	B-15 6 - 7.7 10/11/07	B-16 2 - 4 10/11/07	B-16 4 - 6 10/11/07	B-18 2 - 3.5 10/14/08	B-19A 5 - 6 10/15/08	B-20 4 - 5 10/14/08	B-21 4 - 5.5 10/14/08	B-22 3 - 4.4 10/14/08
Detected SVOCs (Cont.)															
Di-n-butyl phthalate	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
Fluoranthene	- -	mg/kg	0.031 J	0.043 J	0.43 J	0.090 J	0.34 J	0.047 J	0.19 J	580	0.50	24	0.11 J	0.015 J	0.067 J
Fluorene	30	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.013 J	0.83 UJ	0.72 UJ	**81**	0.039 J	18	0.46 U	0.46 U	0.38 U
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.044 UJ	0.0096 J	0.22 J	0.049 J	0.065	0.023 J	0.065 J	100	0.16 J	3.7	0.054	0.046 U	0.015 J
Naphthalene	- -	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.026 J	0.83 UJ	0.054 J	390	0.046 J	75	0.033 J	0.0098 J	0.38 U
Phenanthrene	- -	mg/kg	0.015 J	0.021 J	0.12 J	0.042 J	0.14 J	0.025 J	0.082 J	730	0.29 J	33	0.051 J	0.014 J	0.034 J
Phenol	30	mg/kg	0.44 UJ	0.44 UJ	0.37 U	0.37 U	0.37 U	0.83 UJ	0.72 UJ	41 U	0.39 U	4.1 U	0.46 U	0.46 U	0.38 U
Pyrene	- -	mg/kg	0.026 J	0.035 J	0.40 J	0.082 J	0.34 J	0.053 J	0.26 J	420	0.67 J	25	0.10 J	0.013 J	0.066 J
Total PAHs	- -	mg/kg	0.15 J	0.21 J	2.9 J	0.61 J	2.2 J	0.40 J	1.8 J	3,700 J	5.2 J	300 J	0.96 J	0.074 J	0.49 J
Total SVOCs	- -	mg/kg	0.25 J	0.51 J	3.1 J	0.86 J	2.3 J	0.40 J	2.1 J	3,900 J	5.5 J	300 J	1.4 J	0.074 J	0.77 J
Detected PCBs															
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides															
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics															
Aluminum	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	433	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	- -	mg/kg	0.500 U	0.500 U	8.50	8.30	5.40	1.20	0.500 U	17.1	0.0730 J	10.5	2.40	0.650 U	0.590 U
Cyanide, Free	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.0760 U	0.220 J	0.0730 U	0.0780 U	0.071 U
Iron	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1600	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Protection of Ecological Resources SCOs	Units	B-23 4 - 5.5 10/13/08	B-24 4 - 6 10/13/08	B-25 4 - 6 10/13/08	B-26 2 - 3.8 10/13/08	B-27 1.5 - 3.7 10/13/08	B-28 2 - 3.5 10/13/08	B-29 1.5 - 2.7 10/13/08	B-29 4 - 5 10/14/08	B-30 2 - 3.5 10/14/08	B-31 3 - 4.7 10/14/08	B-32 4.5 - 5 10/14/08	MW-1 2 - 4 12/12/03	MW-2 2 - 6 12/11/03
Detected VOCs															
1,1-Dichloroethane	- -	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.00050 J	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
1,2-Dichloropropane	- -	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
Acetone	2.2	mg/kg	0.033	0.064	0.055	0.058	0.0015 U	0.0011 U	0.032	60 UJ	0.022	0.15	110 UJ	NA	NA
Benzene	70	mg/kg	0.0012 U	0.0010 J	0.0032	0.0016	0.0015 U	0.0035	0.072	3.2 J	0.0015 U	0.0031	21 UJ	0.00070 J	0.0060 U
Carbon Disulfide	- -	mg/kg	0.00090 J	0.0019	0.0019	0.00090 J	0.0015 U	0.00080 J	0.0014	12 UJ	0.0013 J	0.0059	21 UJ	NA	NA
Chloroform	12	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
Ethylbenzene	- -	mg/kg	0.0012 U	0.0014 U	0.0014 UJ	0.0015 U	0.0015 U	0.0011 U	0.0012 U	12 UJ	0.0015 U	0.00050 J	21 UJ	0.0020 J	0.0020 J
Isopropylbenzene	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Acetate	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Ethyl Ketone	100	mg/kg	0.0026	0.013	0.0073	0.0040	0.0015 U	0.0011 U	0.0022	12 UJ	0.0025	0.026	21 UJ	NA	NA
Methylcyclohexane	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	- -	mg/kg	0.0012 UB	0.0014 UB	0.0014 UBJ	0.0015 U	0.0015 U	0.0011 U	0.0012 UB	12 UJ	0.0015 UB	0.0013 UJ	21 UJ	NA	NA
Styrene	- -	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.013	12 UJ	0.0015 U	0.0013 U	21 UJ	NA	NA
Toluene	36	mg/kg	0.0012 U	0.0014 U	0.0010 J	0.0015 U	0.0015 U	0.0011 U	0.059	3.3 J	0.0015 U	0.0017	21 UJ	0.0020 U	0.0060 U
Xylene (total)	0.26	mg/kg	0.0012 U	0.0014 U	0.0014 U	0.0015 U	0.0015 U	0.0011 U	0.25	**9.1 J**	0.0015 U	0.0032	**16 J**	0.0020 J	0.0070 J
Total BTEX	- -	mg/kg	ND	0.0010 J	0.0042 J	0.0016	ND	0.0035	0.38	16 J	ND	0.0085 J	16 J	0.0047 J	0.0090 J
Total VOCs	- -	mg/kg	0.037 J	0.080 J	0.068 J	0.065 J	ND	0.0043 J	0.43	16 J	0.026 J	0.19 J	16 J	0.0047 J	0.0090 J
Detected SVOCs															
1,1'-Biphenyl	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	- -	mg/kg	0.43 U	5.0 U	0.48 U	0.53 U	0.020 J	0.020 J	40 UJ	10 U	0.51 U	0.46 U	19 U	NA	NA
2-Methylnaphthalene	- -	mg/kg	0.43 U	0.64 J	0.17 J	0.10 J	0.29 J	0.24 J	130 J	NA	NA	NA	NA	0.41 J	7.6 J
2-Methylphenol	- -	mg/kg	0.43 U	5.0 U	0.010 J	0.014 J	0.021 J	0.023 J	40 UJ	NA	NA	NA	NA	NA	NA
4-Methylphenol	- -	mg/kg	0.43 U	0.15 J	0.028 J	0.043 J	0.061 J	0.051 J	40 UJ	NA	NA	NA	NA	NA	NA
Acenaphthene	20	mg/kg	0.029 J	2.7 J	0.17 J	0.14 J	0.10 J	0.062 J	**130 J**	**43**	0.090 J	0.54	**23**	0.21 J	7.9 J
Acenaphthylene	- -	mg/kg	0.43 U	2.9 J	0.26 J	0.29 J	0.91	0.73	120 J	52	0.23 J	0.58	80	1.4	56
Acetophenone	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	- -	mg/kg	0.43 U	17	0.43 J	0.46 J	1.0	0.50	240 J	120	0.48 J	1.1	120	3.2	56
Benzaldehyde	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	- -	mg/kg	0.043 J	18	1.4	1.7	5.1	1.9	210 J	52	1.9	0.70	52	15 D	180
Benzo(a)pyrene	2.6	mg/kg	0.055	**16**	1.5	2.2	**7.0**	2.3	**150 J**	**38**	2.4	0.74	**40**	**11 D**	**160**
Benzo(b)fluoranthene	- -	mg/kg	0.049	13	1.2	1.7	8.0	2.7	140 J	27	2.0	0.52	25	12 D	200
Benzo(g,h,i)perylene	- -	mg/kg	0.042 J	4.0 J	0.69	0.94	2.0 J	0.62	32 J	16	0.82	0.19 J	19	3.9 J	100
Benzo(k)fluoranthene	- -	mg/kg	0.050	17	1.5	2.3	8.0	3.6	170 J	35	2.5	0.92	40	7.0 D	100
Bis(2-ethylhexyl) phthalate	- -	mg/kg	0.14 J	5.0 U	0.099 J	0.41 J	0.40 J	0.11 J	40 UJ	10 U	0.21 J	0.46 U	19 U	NA	NA
Butylbenzyl phthalate	- -	mg/kg	0.43 U	5.0 U	0.48 U	0.53 U	0.50 U	0.39 U	40 UJ	10 U	0.51 U	0.46 U	19 U	NA	NA
Carbazole	- -	mg/kg	0.43 U	2.1 J	0.15 J	0.31 J	0.52	0.18 J	63 J	NA	NA	NA	NA	NA	NA
Chrysene	- -	mg/kg	0.046 J	16	1.5	1.9	5.5	2.2	200 J	47	1.9	0.65	48	13 D	150
Dibenzo(a,h)anthracene	- -	mg/kg	0.019 J	1.6	0.24	0.35	0.83 J	0.28	17 J	8.5	0.33	0.10	7.1	3.5 J	49
Dibenzofuran	- -	mg/kg	0.43 U	3.1 J	0.093 J	0.23 J	0.25 J	0.17 J	170 J	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Protection of Ecological Resources SCOs	Units	B-23 4 - 5.5 10/13/08	B-24 4 - 6 10/13/08	B-25 4 - 6 10/13/08	B-26 2 - 3.8 10/13/08	B-27 1.5 - 3.7 10/13/08	B-28 2 - 3.5 10/13/08	B-29 1.5 - 2.7 10/13/08	B-29 4 - 5 10/14/08	B-30 2 - 3.5 10/14/08	B-31 3 - 4.7 10/14/08	B-32 4.5 - 5 10/14/08	MW-1 2 - 4 12/12/03	MW-2 2 - 6 12/11/03
Detected SVOCs (Cont.)															
Di-n-butyl phthalate	- -	mg/kg	0.43 U	5.0 U	0.48 U	0.53 U	0.50 U	0.39 U	40 UJ	10 U	0.51 U	0.46 U	19 U	NA	NA
Fluoranthene	- -	mg/kg	0.045 J	41	2.6	3.7	9.5	3.1	600 J	130	2.5	2.1	130	17 D	330 D
Fluorene	30	mg/kg	0.43 U	5.4	0.14 J	0.29 J	0.22 J	0.12 J	**230 J**	**76**	0.14 J	2.2	**74**	0.52 J	20 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	0.046	4.6	0.71	1.1	2.1 J	0.78	43 J	17	0.92	0.23	19	6.7 J	140
Naphthalene	- -	mg/kg	0.031 J	2.0 J	0.79	0.29 J	0.48 J	0.55	210 J	210	0.17 J	3.4	320	0.26 J	12 J
Phenanthrene	- -	mg/kg	0.028 J	36	1.3	2.7	4.1	1.0	620 J	220	1.2	1.4	210	5.5	130
Phenol	30	mg/kg	0.43 U	5.0 U	0.48 U	0.056 J	0.10 J	0.044 J	40 UJ	10 U	0.51 U	0.16 J	19 U	NA	NA
Pyrene	- -	mg/kg	0.041 J	37	2.2	3.1	9.9	3.6	450 J	98	2.3	1.8	99	18 D	300 D
Total PAHs	- -	mg/kg	0.52 J	240 J	17 J	23 J	65 J	24 J	3,700 J	1,200	20 J	17 J	1,300	120 J	2,000 J
Total SVOCs	- -	mg/kg	0.66 J	240 J	17 J	24 J	66 J	25 J	3,900 J	1,200	20 J	17 J	1,300	120 J	2,000 J
Detected PCBs															
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides															
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics															
Aluminum	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	433	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	- -	mg/kg	0.630 U	0.790 U	15.3	3.00	2.30	4.40	4.80	0.690	0.450 J	89.7	0.540 U	0.740 J	37.3 J
Cyanide, Free	- -	mg/kg	0.0750 U	0.0940 U	0.019 J	0.0950 U	0.0860 U	0.0690 U	0.0730 U	0.015 J	0.0480 J	0.0250 J	0.064 U	NA	NA
Iron	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1600	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID:	Protection of Ecological Resources SCOs	Units	MW-4R	MW-5R	MW-5R	MW-6R	MW-6R	MW-7R	MW-7R	MW-8R	MW-9	MW-9	MW-10R	MW-11	MW-12R
Sample Depth (Feet):			2 - 2.5	5 - 6.1	7 - 7.2	6 - 7.1	8 - 8.3	2 - 2.4	6 - 6.5	2 - 2.9	4 - 4.5	6 - 6.4	4 - 5	4 - 4.6	2 - 2.8
Date Collected:			05/11/06	05/09/06	05/09/06	05/10/06	05/10/06	05/11/06	05/11/06	05/17/06	05/12/06	05/12/06	05/17/06	05/12/06	05/12/06
Detected VOCs															
1,1-Dichloroethane	- -	mg/kg	0.0050 U	5.6 U	1.2 U	37 U	35 U	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.014 U	0.0054 U	0.0070 U	0.0068 U
1,2-Dichloropropane	- -	mg/kg	0.0050 UJ	5.6 UJ	1.2 UJ	37 UJ	35 UJ	0.0082 UJ	0.33 UJ	0.0062 U	0.0065 UJ	0.014 UJ	0.0054 U	0.0070 UJ	0.0068 UJ
Acetone	2.2	mg/kg	0.073	14 U	2.9 U	93 U	88 U	0.020 U	0.82 U	0.015 U	0.21 J	0.059 J	0.16 J	0.046 J	0.012 J
Benzene	70	mg/kg	0.023	**200**	30	**1,300**	**1,000**	0.0082 U	2.4	0.0062 U	0.0042 J	0.021	0.0054 U	0.0011 J	0.0068 U
Carbon Disulfide	- -	mg/kg	0.016	5.6 U	3.1	37 U	35 U	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.014 U	0.0023 J	0.0070 U	0.0068 U
Chloroform	12	mg/kg	0.0050 UJ	5.6 UJ	1.2 UJ	37 UJ	35 UJ	0.0082 UJ	0.33 UJ	0.0062 U	0.0065 U	0.014 U	0.0054 U	0.0070 U	0.0068 U
Ethylbenzene	- -	mg/kg	0.00080 J	21	5.6	57	49	0.0082 U	0.36	0.0062 U	0.0072	0.094	0.0054 U	0.0070 U	0.0068 U
Isopropylbenzene	- -	mg/kg	0.0050 U	1.1 J	1.7	37 U	35 U	0.0082 U	0.33 U	0.0062 U	0.0027 J	0.026	0.0054 U	0.0070 U	0.0068 U
Methyl Acetate	- -	mg/kg	0.0050 U	5.6 U	1.2 U	37 U	35 U	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.0084 J	0.0054 U	0.0047 J	0.0068 U
Methyl Ethyl Ketone	100	mg/kg	0.0066 J	14 U	2.9 U	93 U	88 U	0.020 U	0.82 U	0.015 U	0.025 J	0.036 U	0.025 U	0.31 J	0.017 U
Methylcyclohexane	- -	mg/kg	0.0047 J	5.6 UJ	0.29 J	37 UJ	35 UJ	0.0082 U	0.33 U	0.0062 U	0.0065 U	0.014 U	0.0054 U	0.0070 U	0.0068 U
Methylene Chloride	- -	mg/kg	0.0050 U	5.6 U	1.2 U	37 U	35 U	0.0082 U	0.33 U	0.0017 J	0.0021 J	0.014 U	0.0054 UJ	0.0022 J	0.0015 J
Styrene	- -	mg/kg	0.0050 U	55	15	37 U	58	0.0082 U	0.83	0.0062 U	0.0065 U	0.014 U	0.0054 U	0.0070 U	0.0068 U
Toluene	36	mg/kg	0.016	**150**	**40**	**980**	**820**	0.0082 U	2.4	0.00079 J	0.021	0.049	0.0054 U	0.019	0.0024 J
Xylene (total)	0.26	mg/kg	0.024	**390**	**74**	**1,100**	**900**	0.025 U	**3.8**	0.019 U	0.0022 J	0.18	0.016 U	0.021 U	0.021 U
Total BTEX	- -	mg/kg	0.064 J	760	150	3,400	2,800	ND	9.0	0.00079 J	0.035 J	0.34	ND	0.020 J	0.0024 J
Total VOCs	- -	mg/kg	0.16 J	820 J	170 J	3,400	2,800	ND	9.8	0.0025 J	0.27 J	0.44 J	0.16 J	0.38 J	0.016 J
Detected SVOCs															
1,1'-Biphenyl	- -	mg/kg	0.18 J	400	83 J	620	560	0.47 J	57 J	0.41 U	0.45 J	6.9 J	0.069 J	2.3 U	6.8 U
2,4-Dimethylphenol	- -	mg/kg	1.1 U	110 J	110 U	680	700	0.23 J	17 J	0.41 U	2.1 U	7.5 U	0.36 U	2.3 U	6.8 U
2-Methylnaphthalene	- -	mg/kg	0.88 J	3,400 D	280	4,400 D	3,300 JD	1.9	250	0.41 U	2.1 U	1.2 J	0.094 J	0.27 J	0.95 J
2-Methylphenol	- -	mg/kg	1.1 U	5.6 J	110 U	480	450	0.13 J	4.4 J	0.41 U	2.1 U	7.5 U	0.36 U	2.3 U	6.8 U
4-Methylphenol	- -	mg/kg	2.2 U	23 J	230 U	1,400 JD	980 EJ	0.34 J	8.4 J	0.81 UJ	4.3 U	15 U	0.72 UJ	4.6 U	14 U
Acenaphthene	20	mg/kg	0.49 J	**290**	**69 J**	**520**	**470**	0.84 J	**140**	0.41 U	1.7 J	12	0.21 J	0.55 J	6.8 U
Acenaphthylene	- -	mg/kg	1.0 J	2,300 JD	360	1,700 JD	1,800 JD	3.0	200	0.072 J	0.58 J	14	0.062 J	0.25 J	4.1 J
Acetophenone	- -	mg/kg	1.1 U	130 U	110 U	9.1 J	7.5 J	1.3 U	59 U	0.41 U	2.1 U	7.5 U	0.36 U	2.3 U	6.8 U
Anthracene	- -	mg/kg	4.3 J	2,600 D	420	3,400 JD	2,600 JD	6.8	260	0.081 J	2.2	37	0.17 J	1.4 J	6.0 J
Benzaldehyde	- -	mg/kg	1.1 U	130 U	110 U	130 U	110 U	1.3 U	59 U	0.41 U	2.1 U	7.5 U	0.065 J	2.3 U	6.8 U
Benzo(a)anthracene	- -	mg/kg	9.0	1,800 JD	240	2,500 JD	1,700 JD	16	210	0.49 J	1.9 J	22	0.56	6.4	26
Benzo(a)pyrene	2.6	mg/kg	**9.9**	**900**	**190**	**2,300 JD**	**1,500 JD**	**15**	**170**	0.71	2.2	**12**	0.75	**9.2**	**26**
Benzo(b)fluoranthene	- -	mg/kg	8.9 J	940	130	1,800 EJ	1,000 JD	15	160	0.61 J	1.8 J	7.8 J	0.55 J	6.2	26
Benzo(g,h,i)perylene	- -	mg/kg	3.9	310 J	64 J	560 J	480 J	5.5	68	0.30 J	1.1 J	4.0 J	0.29 J	3.0	17
Benzo(k)fluoranthene	- -	mg/kg	7.6 J	440 J	180 J	630 J	740 J	14	120 J	0.77 J	2.7	12 J	0.63 J	7.7	30
Bis(2-ethylhexyl) phthalate	- -	mg/kg	1.3 UJ	130 UJ	110 U	130 U	110 U	1.9 UJ	59 U	0.70	2.7 UJ	7.5 U	0.36 U	2.3 UJ	6.8 UJ
Butylbenzyl phthalate	- -	mg/kg	1.1 U	130 U	110 U	130 U	110 U	1.3 U	59 U	0.41 U	2.1 U	7.5 U	0.36 U	2.3 U	6.8 U
Carbazole	- -	mg/kg	1.9	740	180	1,700 JD	1,300 JD	2.4	120	0.037 J	2.9	8.1 J	0.074 J	0.59 J	2.0 J
Chrysene	- -	mg/kg	7.7	1,000	210	2,100 JD	1,500 JD	13	190	0.51 J	1.8 J	18	0.51	5.1	25
Dibenzo(a,h)anthracene	- -	mg/kg	2.1	140 J	29 J	230 J	200 J	2.5	32 J	0.15 J	0.41 J	1.7 J	0.22 J	1.5 J	6.3 J
Dibenzofuran	- -	mg/kg	1.4	2,000 JD	280	2,900 JD	2,100 JD	3.0	220	0.41 U	1.1 J	21	0.12 J	0.28 J	1.4 J

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Protection of Ecological Resources SCOs	Units	MW-4R 2 - 2.5 05/11/06	MW-5R 5 - 6.1 05/09/06	MW-5R 7 - 7.2 05/09/06	MW-6R 6 - 7.1 05/10/06	MW-6R 8 - 8.3 05/10/06	MW-7R 2 - 2.4 05/11/06	MW-7R 6 - 6.5 05/11/06	MW-8R 2 - 2.9 05/17/06	MW-9 4 - 4.5 05/12/06	MW-9 6 - 6.4 05/12/06	MW-10R 4 - 5 05/17/06	MW-11 4 - 4.6 05/12/06	MW-12R 2 - 2.8 05/12/06
Detected SVOCs (Cont.)															
Di-n-butyl phthalate	- -	mg/kg	0.17 J	8.1 J	5.3 J	6.6 J	6.2 J	0.22 J	3.3 J	0.41 U	0.32 J	0.78 J	0.36 U	0.31 J	0.95 J
Fluoranthene	- -	mg/kg	14	4,600 D	580	7,300 D	5,000 D	32 D	550 EJ	0.61 J	3.6	44	0.63	4.6	49
Fluorene	30	mg/kg	1.6	**2,400 JD**	**300**	**3,000 JD**	**2,200 JD**	3.4	**240**	0.023 J	3.0	**32**	0.14 J	0.46 J	1.9 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	5.3	410 J	82 J	720 J	620 J	7.2	90	0.36 J	1.4 J	4.8 J	0.38	4.0	22
Naphthalene	- -	mg/kg	3.2	14,000 D	1,700 D	25,000 D	18,000 D	6.4	920 EJ	0.41 U	0.55 J	7.1 J	0.41	0.45 J	2.2 J
Phenanthrene	- -	mg/kg	13	7,500 D	1,300 D	11,000 D	7,500 D	25 D	830 EJ	0.23 J	4.4	80	0.32 J	2.9	18
Phenol	30	mg/kg	1.1 U	130 U	110 U	**740**	**670**	0.21 J	59 U	0.41 U	2.1 U	7.5 U	0.36 U	2.3 U	6.8 U
Pyrene	- -	mg/kg	11	3,400 D	450	5,300 D	3,700 D	23 D	400	0.67 J	3.2	36	0.54	5.0	38
Total PAHs	- -	mg/kg	100 J	46,000 J	6,600 J	73,000 J	52,000 J	190 J	4,800 J	5.6 J	33 J	350 J	6.5 J	59 J	300 J
Total SVOCs	- -	mg/kg	110 J	50,000 J	7,100 J	81,000 J	59,000 J	200 J	5,300 J	6.3 J	37 J	380 J	6.8 J	60 J	300 J
Detected PCBs															
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides															
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics															
Aluminum	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	433	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	- -	mg/kg	3.10 J	22.8 J	2.90 J	168 J	53.4 J	9.70 J	1.70 J	1.50	5.70 J	10.3 J	0.760	5.80 J	44.6 J
Cyanide, Free	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1600	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: / Sample Depth (Feet): / Date Collected:	Protection of Ecological Resources SCOs	Units	PZ-1 14 - 15.6 05/08/06	TP-1 6 12/08/03	TP-1B 6 12/08/03	TP-2 4 12/08/03	TP-3B 6 12/09/03	TP-4 5 12/09/03	TP-5 1 - 3 05/22/06	TP-5 4.7 - 6.5 05/22/06	TP-6 0 - 2 05/22/06	TP-6 5 - 7 05/22/06
Detected VOCs												
1,1-Dichloroethane	- -	mg/kg	0.0061 U	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
1,2-Dichloropropane	- -	mg/kg	0.0061 UJ	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 UJ	0.0057 UJ
Acetone	2.2	mg/kg	0.031	NA	NA	NA	NA	NA	NA	25 UJ	0.015 U	0.014 U
Benzene	70	mg/kg	0.017	0.0040 J	0.0060 J	0.32	0.0060 U	0.14	NA	**180**	0.0059 U	0.0057 U
Carbon Disulfide	- -	mg/kg	0.012	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Chloroform	12	mg/kg	0.0061 UJ	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Ethylbenzene	- -	mg/kg	0.0061 U	0.0050 J	0.014	0.15	0.0060	0.092	NA	14	0.0059 UJ	0.0057 UJ
Isopropylbenzene	- -	mg/kg	0.0061 U	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Methyl Acetate	- -	mg/kg	0.0061 U	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 U	0.0057 U
Methyl Ethyl Ketone	100	mg/kg	0.015 U	NA	NA	NA	NA	NA	NA	25 UJ	0.015 U	0.014 U
Methylcyclohexane	- -	mg/kg	0.0021 J	NA	NA	NA	NA	NA	NA	9.9 U	0.0059 UJ	0.0057 UJ
Methylene Chloride	- -	mg/kg	0.0061 U	NA	NA	NA	NA	NA	NA	9.9 U	0.0015 J	0.0016 J
Styrene	- -	mg/kg	0.0061 U	NA	NA	NA	NA	NA	NA	54	0.0059 U	0.0057 U
Toluene	36	mg/kg	0.0027 J	0.0030 U	0.0040 U	0.036	0.0060 U	0.31	NA	**210**	0.0059 UJ	0.0057 UJ
Xylene (total)	0.26	mg/kg	0.018 U	0.0090 J	0.014 J	**0.35**	0.012 J	**2.2**	NA	**290**	0.018 U	0.017 U
Total BTEX	- -	mg/kg	0.020 J	0.018 J	0.034 J	0.86	0.018 J	2.7	NA	690	ND	ND
Total VOCs	- -	mg/kg	0.065 J	0.018 J	0.034 J	0.86	0.018 J	2.7	NA	750	0.0015 J	0.0016 J
Detected SVOCs												
1,1'-Biphenyl	- -	mg/kg	0.15 J	NA	NA	NA	NA	NA	NA	220	1.2 U	0.21 J
2,4-Dimethylphenol	- -	mg/kg	1.2 U	NA	NA	NA	NA	NA	NA	150 J	1.2 U	0.21 J
2-Methylnaphthalene	- -	mg/kg	0.42 J	23 U	1.0 J	2.3 J	4.0 U	31	NA	1,600 D	1.2 U	0.42 J
2-Methylphenol	- -	mg/kg	1.2 U	NA	NA	NA	NA	NA	NA	98 J	1.2 U	1.9 U
4-Methylphenol	- -	mg/kg	2.4 U	NA	NA	NA	NA	NA	NA	210 J	2.3 U	0.33 J
Acenaphthene	20	mg/kg	0.64 J	5.1 J	4.8 J	11 J	4.0 U	8.1 J	NA	**170**	1.2 U	0.45 J
Acenaphthylene	- -	mg/kg	1.2	19 J	16	42	1.2 J	32	NA	900	1.1 J	8.0
Acetophenone	- -	mg/kg	1.2 U	NA	NA	NA	NA	NA	NA	120 U	1.2 U	0.15 J
Anthracene	- -	mg/kg	5.0	40	28	50	1.6 J	72	NA	810	0.85 J	7.9
Benzaldehyde	- -	mg/kg	1.2 U	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Benzo(a)anthracene	- -	mg/kg	9.1	120	39	130 D	7.7	650 D	NA	600	4.7	37 D
Benzo(a)pyrene	2.6	mg/kg	**8.5**	**110**	**35**	**120**	**7.6**	**150**	NA	**500**	**5.2**	**33 D**
Benzo(b)fluoranthene	- -	mg/kg	8.4	140	33	130 D	8.7	650 D	NA	460	4.3	41 D
Benzo(g,h,i)perylene	- -	mg/kg	4.8	76	21	73	8.5 J	460 D	NA	210	3.7	22
Benzo(k)fluoranthene	- -	mg/kg	6.9	79	26	66	5.8	69	NA	350 J	4.9	26
Bis(2-ethylhexyl) phthalate	- -	mg/kg	1.2 UJ	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Butylbenzyl phthalate	- -	mg/kg	1.2 U	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Carbazole	- -	mg/kg	2.4 J	NA	NA	NA	NA	NA	NA	450	0.18 J	2.8
Chrysene	- -	mg/kg	8.5	100	33	110	7.8	630 D	NA	490	4.6	37 D
Dibenzo(a,h)anthracene	- -	mg/kg	1.3	32	11	38	2.7 J	62	NA	84 J	0.64 J	8.4
Dibenzofuran	- -	mg/kg	1.4	NA	NA	NA	NA	NA	NA	730	0.087 J	1.5 J

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TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth (Feet): Date Collected:	Protection of Ecological Resources SCOs	Units	PZ-1 14 - 15.6 05/08/06	TP-1 6 12/08/03	TP-1B 6 12/08/03	TP-2 4 12/08/03	TP-3B 6 12/09/03	TP-4 5 12/09/03	TP-5 1 - 3 05/22/06	TP-5 4.7 - 6.5 05/22/06	TP-6 0 - 2 05/22/06	TP-6 5 - 7 05/22/06
Detected SVOCs (Cont.)												
Di-n-butyl phthalate	- -	mg/kg	0.12 J	NA	NA	NA	NA	NA	NA	120 U	1.2 U	1.9 U
Fluoranthene	- -	mg/kg	36 D	240 D	68	230 D	14	1,600 D	NA	2,300 D	8.0	65 D
Fluorene	30	mg/kg	1.5	18 J	20	**41**	4.0 U	17 J	NA	**750**	0.077 J	1.8 J
Indeno(1,2,3-cd)pyrene	- -	mg/kg	5.3	100	28	100	10 J	590 D	NA	250	4.1	30
Naphthalene	- -	mg/kg	0.80 J	6.9 J	4.2 J	18	1.2 J	150	NA	9,300 D	0.15 J	0.95 J
Phenanthrene	- -	mg/kg	25 D	71	69	130	5.1	1,300 D	NA	3,600 D	2.2	24
Phenol	30	mg/kg	1.2 U	NA	NA	NA	NA	NA	NA	**110 J**	1.2 U	0.20 J
Pyrene	- -	mg/kg	28 D	210 D	59	200 D	14	1,300 D	NA	1,700 D	7.7	53 D
Total PAHs	- -	mg/kg	150 J	1,400 J	500 J	1,500 J	96 J	7,800 J	NA	24,000 J	52 J	400 J
Total SVOCs	- -	mg/kg	160 J	1,400 J	500 J	1,500 J	96 J	7,800 J	NA	26,000 J	53 J	400 J
Detected PCBs												
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Pesticides												
None Detected	- -	- -	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detected Inorganics												
Aluminum	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	13	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium	433	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	10	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	4	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobalt	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	50	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide	- -	mg/kg	7.20 J	17.5 J	14.2 J	48.3 J	10.1 J	8,210 J	101	28.9	1.80	62.7
Cyanide, Free	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	63	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	1600	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury	0.18	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel	30	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	3.9	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	- -	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	109	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

See Notes on Page 11.

TABLE 11
COMPARISON OF SUBSURFACE SOIL DATA TO NYSDEC ECOLOGIC SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

(1) NYSDEC (2006) Part 375-6 Soil Cleanup Objectives for Ecological Resources taken from New York State Brownfield Cleanup Program, Development of Soil Cleanup Objectives, Technical Support Document.

Results reported in milligrams per kilogram (mg/Kg); also expressed as parts per million (ppm).

SCO = Soil Cleanup Objectives.

NA = Not Analyzed.

Exceedances of ecological SCOs are bolded and shaded.

-- = Criteria not available.

Data Qualifiers:

Qualifier Type	Lab Qualifiers	Definition
Inorganic	B	Indicates an estimated value between the instrument detection limit (IDL) and the practical quantitation limit (PQL).
Inorganic	J	The associated numerical value is an estimated concentration.
Inorganic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
Organic	B	The compound has been found in the sample as well as its associated blank.
Organic	D	Concentration is based on a diluted sample analysis.
Organic	E	The compound was quantitated above the calibration range.
Organic	J	The associated numerical value is an estimated concentration.
Organic	ND	Not Detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

TABLE 12
COMPARISON OF SURFACE SOIL DATA TO NYSDEC HUMAN HEALTH SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth(Feet): Date Collected:	Restricted Residential SCOs (1)	Commercial SCOs (1)	Units	B-8D 0.2 - 1.1 05/12/06	B-9 0 - 0.9 05/11/06	B-10 0 - 0.5 05/11/06	B-17 0 - 1 10/14/08	SS-01 0 - 0.17 04/06/04	SS-02 0 - 0.17 04/06/04	SS-03 0 - 0.17 04/06/04	SS-04 0 - 0.17 04/06/04	SS-05 0 - 0.17 04/06/04	SS-06 0 - 0.17 04/06/04
Detected VOCs													
Acetone	100	500	mg/kg	NA	0.027 U [0.026 U]	0.059	0.030	0.013 U	0.015 U [0.014 U]	0.012 U	0.0050 J	0.0060 J	0.012 U
Benzene	4.8	44	mg/kg	NA	0.038 [0.032]	0.0012 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Chloroform	49	350	mg/kg	NA	0.011 UJ [0.011 UJ]	0.00069 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Ethylbenzene	41	390	mg/kg	NA	0.0074 J [0.0074 J]	0.0053 U	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Isopropylbenzene	- -	- -	mg/kg	NA	0.0033 J [0.0036 J]	0.0053 U	NA	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Methyl Acetate	- -	- -	mg/kg	NA	0.011 U [0.011 U]	0.0053 U	NA	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.0030 J	0.0020 J
Methyl Ethyl Ketone	100	500	mg/kg	NA	0.027 U [0.026 U]	0.0052 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Methylcyclohexane	- -	- -	mg/kg	NA	0.097 [0.098]	0.0054	NA	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Styrene	- -	- -	mg/kg	NA	0.011 U [0.0043 J]	0.0053 U	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Toluene	100	500	mg/kg	NA	0.028 [0.025]	0.00077 J	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Xylene (total)	100	500	mg/kg	NA	0.089 [0.082]	0.016 U	0.0012 U	0.013 U	0.015 U [0.014 U]	0.012 U	0.012 U	0.012 U	0.012 U
Total BTEX	- -	- -	mg/kg	NA	0.16 J [0.15 J]	0.0020 J	ND	ND	ND [ND]	ND	ND	ND	ND
Total VOCs	- -	- -	mg/kg	NA	0.26 J [0.25 J]	0.072 J	0.030	ND	ND [ND]	ND	0.0050 J	0.0090 J	0.0020 J
Detected SVOCs													
1,1'-Biphenyl	- -	- -	mg/kg	NA	38 J [21 J]	0.037 J	NA	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U
2,4-Dimethylphenol	- -	- -	mg/kg	NA	18 J [13 J]	0.40 U	0.39 U	0.86 U	0.97 U [0.89 U]	2.0 UJ	0.40 UJ	0.40 UJ	0.40 UJ
2-Methylnaphthalene	- -	- -	mg/kg	NA	170 J [74]	0.21 J	NA	R	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U
2-Methylphenol	100	500	mg/kg	NA	8.7 J [5.8 J]	0.40 U	NA	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U
4-Methylphenol	34	500	mg/kg	NA	23 J [18 J]	0.80 U	NA	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U
Acenaphthene	100	500	mg/kg	NA	**160 J [72 J]**	0.049 J	0.11 J	0.86 U	0.97 U [0.24 J]	0.91 J	0.40 U	0.40 U	0.40 U
Acenaphthylene	100	500	mg/kg	NA	**140 J [100 J]**	0.21 J	0.026 J	1.2 J	0.96 J [0.72 J]	2.0 J	0.40 U	0.40 U	0.10 J
Anthracene	100	500	mg/kg	NA	**430 [240 J]**	0.41	0.34 J	0.91 J	1.5 [1.4]	3.3	0.40 U	0.090 J	0.20 J
Benzo(a)anthracene	1	5.6	mg/kg	NA	**590 J [390 J]**	**1.3**	**1.3**	**4.2 J**	**4.1 [4.0]**	**8.7**	0.096 J	0.24 J	0.75
Benzo(a)pyrene	1	1	mg/kg	NA	**470 J [310 J]**	**1.5**	**1.8**	**4.4 J**	**4.0 [3.6]**	**8.4**	0.11 J	0.25 J	0.78
Benzo(b)fluoranthene	1	5.6	mg/kg	NA	**430 J [320 J]**	**1.4**	**1.3**	**4.6 J**	**3.4 [3.9]**	**9.0**	0.13 J	0.28 J	0.88
Benzo(g,h,i)perylene	100	500	mg/kg	NA	**190 J [110 J]**	0.78	0.50	3.4 J	2.8 [2.3]	7.1	0.082 J	0.18 J	0.53
Benzo(k)fluoranthene	3.9	56	mg/kg	NA	**360 J [200 J]**	1.5	2.0	3.5 J	2.9 [2.8]	**6.9**	0.11 J	0.24 J	0.71
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	NA	120 U [61 U]	0.52 UJ	0.39 U	0.86 U	0.97 U [0.89 U]	0.86 J	0.25 J	0.11 J	0.083 J
Carbazole	- -	- -	mg/kg	NA	220 J [140]	0.18 J	NA	0.19 J	0.36 J [0.45 J]	1.7 J	0.40 U	0.40 U	0.11 J
Chrysene	3.9	56	mg/kg	NA	**540 J [370 J]**	1.2	1.2	**4.1**	**4.0 [3.7]**	**8.7**	0.12 J	0.29 J	0.91
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	NA	**90 J [53 J]**	0.25 J	0.22	**1.4 J**	**1.2 [1.1]**	**2.5**	0.40 U	0.40 U	0.23 J
Dibenzofuran	59	350	mg/kg	NA	**230 J [130 J]**	0.18 J	NA	0.86 U	0.36 J [0.30 J]	0.73 J	0.40 U	0.40 U	0.40 U
Di-n-butyl phthalate	- -	- -	mg/kg	NA	6.9 J [3.2 J]	0.046 J	0.39 U	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U
Fluoranthene	100	500	mg/kg	NA	**1,500 D [1,100 D]**	2.4	1.2	6.6 J	7.8 [7.0]	18	0.23 J	0.52	1.7
Fluorene	100	500	mg/kg	NA	**290 J [140 J]**	0.17 J	0.080 J	0.86 U	0.57 J [0.51 J]	1.2 J	0.40 U	0.40 U	0.40 U
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	NA	**230 J [140 J]**	**0.98**	**0.63**	**3.9 J**	**3.1 [2.7]**	**7.2**	0.086 J	0.20 J	**0.59**
Naphthalene	100	500	mg/kg	NA	**240 J [140 J]**	0.37 J	0.068 J	0.28 J	0.73 J [0.34 J]	1.1 J	0.40 U	0.40 U	0.40 U
NYSDOH BAP TEQ(-NDs Excluded)	- -	- -	mg/kg	NA	NA	NA	NA	7.2	6.3 [5.8]	14	0.14	0.33	1.3
Phenanthrene	100	500	mg/kg	NA	**1,800 D [1,200 D]**	1.4	0.82	2.3 J	4.9 [4.2]	11	0.099 J	0.29 J	0.81

See Notes on Page 5.

TABLE 12
COMPARISON OF SURFACE SOIL DATA TO NYSDEC HUMAN HEALTH SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth(Feet): Date Collected:	Restricted Residential SCOs (1)	Commercial SCOs (1)	Units	B-8D 0.2 - 1.1 05/12/06	B-9 0 - 0.9 05/11/06	B-10 0 - 0.5 05/11/06	B-17 0 - 1 10/14/08	SS-01 0 - 0.17 04/06/04	SS-02 0 - 0.17 04/06/04	SS-03 0 - 0.17 04/06/04	SS-04 0 - 0.17 04/06/04	SS-05 0 - 0.17 04/06/04	SS-06 0 - 0.17 04/06/04
Phenol	100	500	mg/kg	NA	10 J [9.4 J]	0.40 U	0.39 U	0.86 U	0.97 U [0.89 U]	2.0 U	0.40 U	0.40 U	0.40 U
Pyrene	100	500	mg/kg	NA	**1,200 D [830 JD]**	1.9	1.2	6.0 J	6.4 [6.1]	15	0.19 J	0.43	1.3
Total CPAHs	- -	- -	mg/kg	NA	2,700 J [1,800 J]	8.1 J	8.5	26 J	23 [22]	51	0.65 J	1.5 J	4.9 J
Total PAHs	- -	- -	mg/kg	NA	8,800 J [5,800 J]	16 J	13 J	47 J	48 J [45 J]	110 J	1.3 J	3.0 J	9.5 J
Total SVOCs	- -	- -	mg/kg	NA	9,400 J [6,100 J]	17 J	13 J	47 J	49 J [45 J]	110 J	1.5 J	3.1 J	9.7 J
Detected PCBs													
None Detected	- -	- -	- -	NA	NA	NA	NA	- -	- - [- -]	- -	NA	NA	NA
Detected Pesticides													
4,4'-DDD	13	92	mg/kg	NA	NA	NA	NA	0.0070 JN	0.0097 U [0.0089 U]	0.027 JN	NA	NA	NA
4,4'-DDT	7.9	47	mg/kg	NA	NA	NA	NA	0.0075 J	0.011 J [0.0080 J]	0.022	NA	NA	NA
alpha-Chlordane	4.2	24	mg/kg	NA	NA	NA	NA	0.0044 U	0.0050 U [0.0046 U]	0.0041 J	NA	NA	NA
Dieldrin	0.039	1.4	mg/kg	NA	NA	NA	NA	0.0086 U	0.0097 U [0.0089 U]	**0.28 D**	NA	NA	NA
Endrin	11	89	mg/kg	NA	NA	NA	NA	0.080 JN	0.086 JN [0.15 DJN]	0.0080 U	NA	NA	NA
Endrin Ketone	- -	- -	mg/kg	NA	NA	NA	NA	0.0086 U	0.025 J [0.0089 U]	0.031 J	NA	NA	NA
Methoxchlor	- -	- -	mg/kg	NA	NA	NA	NA	0.041 J	0.034 JN [0.043 J]	0.054 J	NA	NA	NA
Detected Inorganics													
Aluminum	- -	- -	mg/kg	NA	NA	NA	NA	4,170	3,670 [3,370]	6,930	3,120	2,440	4,060
Antimony	- -	- -	mg/kg	NA	NA	NA	NA	0.740 BJ	0.480 BJ [0.440 BJ]	1.00 BJ	0.270 BJ	0.800 BJ	0.600 BJ
Arsenic	16	16	mg/kg	NA	NA	NA	NA	4.50	7.40 [6.50]	6.80	2.50	6.70	3.80
Barium	400	400	mg/kg	NA	NA	NA	NA	45.9	62.3 [55.8]	88.6	21.9 B	171	51.8
Beryllium	72	590	mg/kg	NA	NA	NA	NA	0.260 B	0.300 B [0.280 B]	0.480 B	0.180 B	0.220 B	0.280 B
Cadmium	4.3	9.3	mg/kg	NA	NA	NA	NA	0.180 B	0.420 B [0.330 B]	0.830	0.0500 U	0.370 B	0.290 B
Calcium	- -	- -	mg/kg	NA	NA	NA	NA	22,000	78,000 [71,200]	25,200	49,400	126,000	76,600
Chromium	- -	- -	mg/kg	NA	NA	NA	NA	9.50	8.60 [8.50]	16.9	6.00	7.70	10.3
Cobalt	- -	- -	mg/kg	NA	NA	NA	NA	2.90	4.00 [3.80]	5.10	2.20	3.30	3.80
Copper	270	270	mg/kg	NA	NA	NA	NA	24.2	24.3 [18.9]	47.5	8.60	25.4	20.6
Cyanide	27	27	mg/kg	**491 J**	6.60 J [13.5 J]	0.840 J	NA	6.70	1.20 [1.20]	2.90	0.250 B	0.300 B	0.410 B
Iron	- -	- -	mg/kg	NA	NA	NA	NA	8,920	8,990 [8,340]	18,300	6,490	7,040	10,300
Lead	400	1,000	mg/kg	NA	NA	NA	NA	40.8	49.7 [45.4]	221	15.6	200	160
Magnesium	- -	- -	mg/kg	NA	NA	NA	NA	9,720	37,000 [34,300]	10,800	21,700	60,500	34,600
Manganese	2,000	10,000	mg/kg	NA	NA	NA	NA	220	417 [375]	358	256	520	388
Mercury	0.81	2.8	mg/kg	NA	NA	NA	NA	0.120	0.100 [0.0990]	0.210	0.0360 U	0.220	0.150
Nickel	310	310	mg/kg	NA	NA	NA	NA	9.00	11.3 [10.4]	21.4	5.00	7.30	9.70
Potassium	- -	- -	mg/kg	NA	NA	NA	NA	398 BJ	781 J [751 J]	1,100 J	405 BJ	618 J	1,080 J
Selenium	180	1,500	mg/kg	NA	NA	NA	NA	0.870	0.570 B [0.740]	1.00	0.250 B	0.520 B	0.520 B
Silver	180	1,500	mg/kg	NA	NA	NA	NA	0.0900 U	0.100 U [0.0900 U]	0.180 B	0.0800 U	0.160 B	0.0800 U
Sodium	- -	- -	mg/kg	NA	NA	NA	NA	160 B	213 B [201 B]	212 B	237 B	293 B	376 B
Vanadium	- -	- -	mg/kg	NA	NA	NA	NA	25.1	25.8 [23.4]	22.2	11.3	13.3	19.3
Zinc	10,000	10,000	mg/kg	NA	NA	NA	NA	81.1	57.8 [49.7]	379	44.0	98.5	81.7

See Notes on Page 5.

TABLE 12
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NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Sample Depth(Feet): Date Collected:	Restricted Residential SCOs (1)	Commercial SCOs (1)	Units	SS-07 0 - 0.17 04/06/04	SS-08 0 - 0.17 04/06/04	SS-09 0 - 0.17 10/26/07	SS-10 0 - 0.17 10/26/07	SS-11 0 - 0.17 10/26/07	SS-12 0 - 0.17 10/26/07
Detected VOCs									
Acetone	100	500	mg/kg	0.013 U	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Benzene	4.8	44	mg/kg	0.013 U	0.014 U	0.0012 U [0.0012 U]	0.0012 U	0.0011 UJ	0.0011 U
Chloroform	49	350	mg/kg	0.013 U	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Ethylbenzene	41	390	mg/kg	0.013 U	0.014 U	0.0048 U [0.0050 U]	0.0048 U	0.0044 UJ	0.0043 U
Isopropylbenzene	- -	- -	mg/kg	0.013 U	0.014 U	NA	NA	NA	NA
Methyl Acetate	- -	- -	mg/kg	0.013 U	0.014 U	NA	NA	NA	NA
Methyl Ethyl Ketone	100	500	mg/kg	0.013 U	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Methylcyclohexane	- -	- -	mg/kg	0.013 U	0.014 U	NA	NA	NA	NA
Styrene	- -	- -	mg/kg	0.013 U	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Toluene	100	500	mg/kg	0.013 U	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Xylene (total)	100	500	mg/kg	0.013 U	0.014 U	0.0060 U [0.0063 U]	0.0060 U	0.0056 UJ	0.0054 U
Total BTEX	- -	- -	mg/kg	ND	ND	ND [ND]	ND	ND	ND
Total VOCs	- -	- -	mg/kg	ND	ND	ND [ND]	ND	ND	ND
Detected SVOCs									
1,1'-Biphenyl	- -	- -	mg/kg	0.44 U	0.45 U	NA	NA	NA	NA
2,4-Dimethylphenol	- -	- -	mg/kg	0.44 UJ	0.45 UJ	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
2-Methylnaphthalene	- -	- -	mg/kg	0.44 U	0.45 U	0.42 U [0.42 U]	0.014 J	0.38 U	0.38 U
2-Methylphenol	100	500	mg/kg	0.44 U	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
4-Methylphenol	34	500	mg/kg	0.44 U	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.0076 J
Acenaphthene	100	500	mg/kg	0.44 U	0.45 U	0.42 U [0.0088 J]	0.014 J	0.38 U	0.38 U
Acenaphthylene	100	500	mg/kg	0.27 J	0.095 J	0.036 J [0.051 J]	0.084 J	0.030 J	0.028 J
Anthracene	100	500	mg/kg	0.31 J	0.099 J	0.025 J [0.040 J]	0.060 J	0.019 J	0.032 J
Benzo(a)anthracene	1	5.6	mg/kg	**1.4**	0.56	0.17 [0.24]	0.28	0.17	0.15
Benzo(a)pyrene	1	1	mg/kg	**1.6**	0.62	0.19 [0.28]	0.29	0.17	0.17
Benzo(b)fluoranthene	1	5.6	mg/kg	**1.5**	0.56	0.21 [0.34]	0.23	0.18	0.17
Benzo(g,h,i)perylene	100	500	mg/kg	1.1	0.38 J	0.11 J [0.12 J]	0.11 J	0.19 J	0.11 J
Benzo(k)fluoranthene	3.9	56	mg/kg	1.2	0.62	0.22 [0.30]	0.34	0.24	0.17
Bis(2-ethylhexyl) phthalate	- -	- -	mg/kg	0.18 J	0.11 J	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Carbazole	- -	- -	mg/kg	0.14 J	0.45 U	0.012 J [0.022 J]	0.028 J	0.0087 J	0.012 J
Chrysene	3.9	56	mg/kg	1.6	0.60	0.20 J [0.28 J]	0.39 J	0.19 J	0.16 J
Dibenzo(a,h)anthracene	0.33	0.56	mg/kg	**0.51**	0.16 J	0.031 J [0.043]	0.040 J	0.052	0.034 J
Dibenzofuran	59	350	mg/kg	0.44 U	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Di-n-butyl phthalate	- -	- -	mg/kg	0.44 U	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Fluoranthene	100	500	mg/kg	2.5	1.1	0.41 J [0.55]	0.68	0.36 J	0.34 J
Fluorene	100	500	mg/kg	0.44 U	0.45 U	0.42 U [0.012 J]	0.035 J	0.38 U	0.010 J
Indeno(1,2,3-cd)pyrene	0.5	5.6	mg/kg	**1.2**	0.44 J	0.11 [0.12]	0.11	0.16	0.11
Naphthalene	100	500	mg/kg	0.44 U	0.45 U	0.0090 J [0.013 J]	0.019 J	0.38 U	0.014 J
NYSDOH BAP TEQ(-NDs Excluded)	- -	- -	mg/kg	2.6	0.95	NA	NA	NA	NA
Phenanthrene	100	500	mg/kg	0.94	0.39 J	0.11 J [0.20 J]	0.44	0.078 J	0.11 J

See Notes on Page 5.

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NATIONAL GRID
REMEDIAL INVESTIGATION
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OGDENSBURG, NEW YORK

Location ID: / Sample Depth(Feet): / Date Collected:	Restricted Residential SCOs (1)	Commercial SCOs (1)	Units	SS-07 0 - 0.17 04/06/04	SS-08 0 - 0.17 04/06/04	SS-09 0 - 0.17 10/26/07	SS-10 0 - 0.17 10/26/07	SS-11 0 - 0.17 10/26/07	SS-12 0 - 0.17 10/26/07
Phenol	100	500	mg/kg	0.44 U	0.45 U	0.42 U [0.42 U]	0.40 U	0.38 U	0.38 U
Pyrene	100	500	mg/kg	2.2	0.90	0.34 J [0.47]	0.74	0.31 J	0.30 J
Total CPAHs	- -	- -	mg/kg	9.0	3.6 J	1.1 J [1.6 J]	1.7 J	1.2 J	0.96 J
Total PAHs	- -	- -	mg/kg	16 J	6.5 J	2.2 J [3.1 J]	3.9 J	2.2 J	1.9 J
Total SVOCs	- -	- -	mg/kg	17 J	6.6 J	2.2 J [3.1 J]	3.9 J	2.2 J	1.9 J
Detected PCBs									
None Detected	- -	- -	- -	NA	NA	NA	NA	NA	NA
Detected Pesticides									
4,4'-DDD	13	92	mg/kg	NA	NA	NA	NA	NA	NA
4,4'-DDT	7.9	47	mg/kg	NA	NA	NA	NA	NA	NA
alpha-Chlordane	4.2	24	mg/kg	NA	NA	NA	NA	NA	NA
Dieldrin	0.039	1.4	mg/kg	NA	NA	NA	NA	NA	NA
Endrin	11	89	mg/kg	NA	NA	NA	NA	NA	NA
Endrin Ketone	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA
Methoxchlor	- -	- -	mg/kg	NA	NA	NA	NA	NA	NA
Detected Inorganics									
Aluminum	- -	- -	mg/kg	11,700	8,850	NA	NA	NA	NA
Antimony	- -	- -	mg/kg	0.840 BJ	0.340 BJ	NA	NA	NA	NA
Arsenic	16	16	mg/kg	7.20	3.60	NA	NA	NA	NA
Barium	400	400	mg/kg	139	69.6	NA	NA	NA	NA
Beryllium	72	590	mg/kg	0.610 B	0.400 B	NA	NA	NA	NA
Cadmium	4.3	9.3	mg/kg	0.190 B	0.0500 U	NA	NA	NA	NA
Calcium	- -	- -	mg/kg	35,600	21,400	NA	NA	NA	NA
Chromium	- -	- -	mg/kg	23.4	13.5	NA	NA	NA	NA
Cobalt	- -	- -	mg/kg	7.80	4.60	NA	NA	NA	NA
Copper	270	270	mg/kg	38.2	15.8	NA	NA	NA	NA
Cyanide	27	27	mg/kg	0.350 B	0.330 B	0.500 U [0.500 U]	0.500 U	0.500 U	0.500 U
Iron	- -	- -	mg/kg	18,500	12,900	NA	NA	NA	NA
Lead	400	1,000	mg/kg	166	39.3	NA	NA	NA	NA
Magnesium	- -	- -	mg/kg	20,200	9,130	NA	NA	NA	NA
Manganese	2,000	10,000	mg/kg	527	357	NA	NA	NA	NA
Mercury	0.81	2.8	mg/kg	0.210	0.0820	NA	NA	NA	NA
Nickel	310	310	mg/kg	20.3	9.70	NA	NA	NA	NA
Potassium	- -	- -	mg/kg	3,250 J	1,220 J	NA	NA	NA	NA
Selenium	180	1,500	mg/kg	0.820	0.270 B	NA	NA	NA	NA
Silver	180	1,500	mg/kg	0.250 B	0.0900 U	NA	NA	NA	NA
Sodium	- -	- -	mg/kg	458 B	337 B	NA	NA	NA	NA
Vanadium	- -	- -	mg/kg	44.2	24.8	NA	NA	NA	NA
Zinc	10,000	10,000	mg/kg	128	59.2	NA	NA	NA	NA

See Notes on Page 5.

TABLE 12
COMPARISON OF SURFACE SOIL DATA TO NYSDEC HUMAN HEALTH SOIL CLEANUP OBJECTIVES

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

(1) NYSDEC (2006) Soil Cleanup Objectives taken from New York State Brownfield Cleanup Program, Development of Soil Cleanup Objectives, Technical Support Document.
Results reported in milligrams per kilogram (mg/Kg); also expressed as parts per million (ppm).
Bolded values exceeded restricted residential SCO.
Shaded values exceed commercial SCO.
SCO = Soil Cleanup Objective.
NA = Not Analyzed.
-- = Criteria not available.

Data Qualifiers:

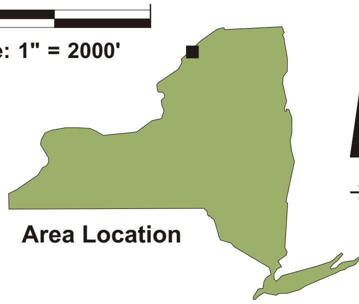
Qualifier Type	Lab Qualifiers	Definition
Inorganic	B	Indicates an estimated value between the instrument detection limit (IDL) and the practical quantitation limit (PQL).
Inorganic	J	The associated numerical value is an estimated concentration.
Inorganic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.
Organic	B	The compound has been found in the sample as well as its associated blank.
Organic	D	Concentration is based on a diluted sample analysis.
Organic	E	The compound was quantitated above the calibration range.
Organic	J	The associated numerical value is an estimated concentration.
Organic	ND	Not Detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

Figures

REFERENCE: Base Map USGS 7.5 Min. Quad., Ogdensburg East, New York, 1963.

2000' 0 2000'

Approximate Scale: 1" = 2000'



Area Location

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

SITE LOCATION MAP

ARCADIS

FIGURE
1

09/31/09 SYRACUSE, NY-ENV/CAD-DJHOWES
B0036671/0001/00017/CDR/36671N01.CDR

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:RCB AMS R.ALLEN LD:(Opt) PIC:(Opt) PM:S.POWLIN TM:(Opt) LYR:ON=*;OFF=*REF*
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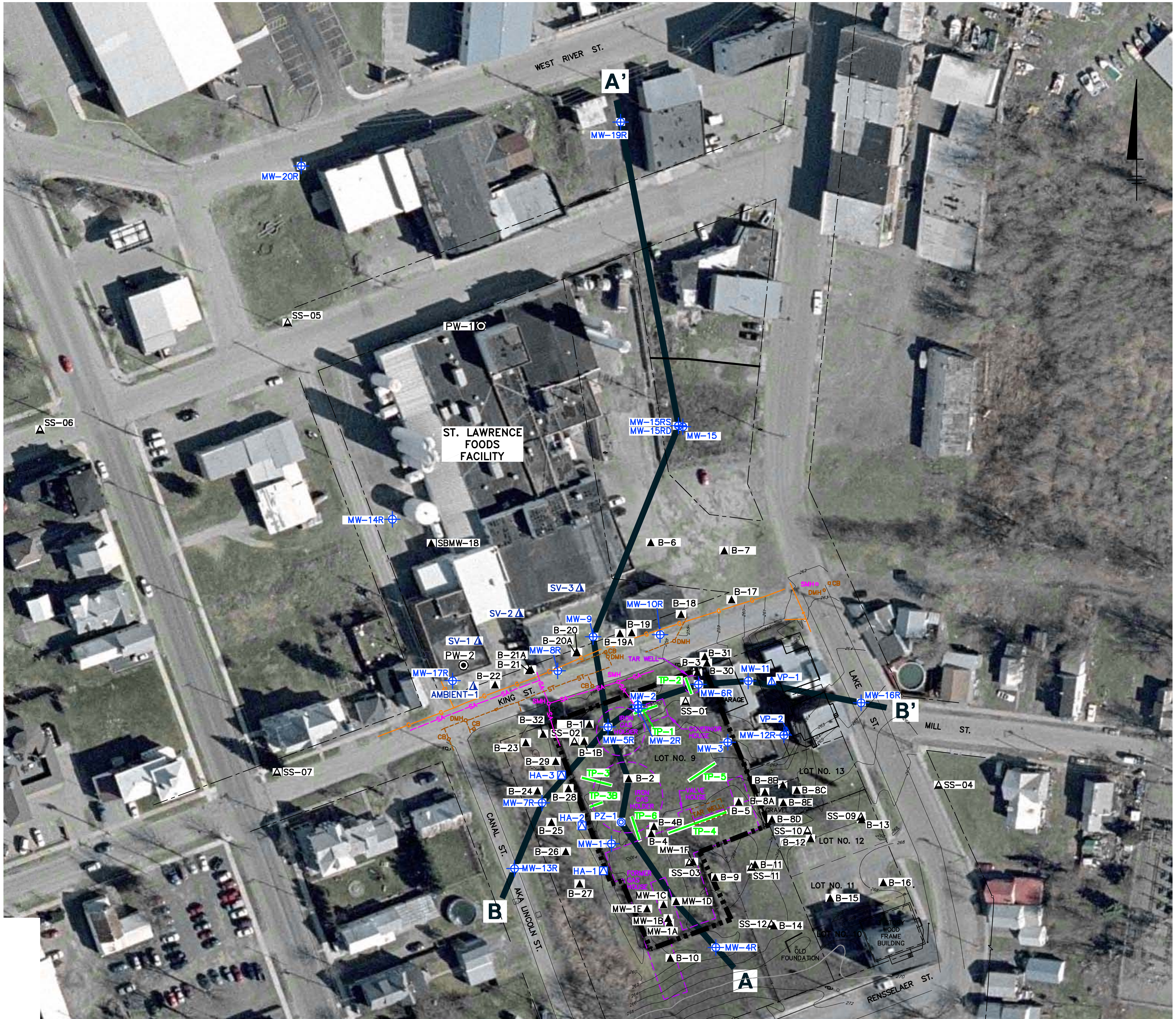


LEGEND:

MW-10	MONITORING WELL
VP-1	SOIL VAPOR SAMPLING POINT (PROPOSED)
SV-1	SOIL VAPOR SAMPLING POINT (EXISTING)
PZ-1	PIEZOMETER
HA-1	HAND-AUGER BORING
TP-1	TEST PIT
B-1	SOIL BORING
SS-01	SURFACE SOIL SAMPLE
PW-1	APPROXIMATE LOCATION OF PRODUCTION WELL LOCATED INSIDE PRIMO FOODS FACILITY
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF WAY
	CHAINLINK FENCE
G	GAS LINE
ST	STORM LINE
SA	SANITARY LINE
CB	STORM LINE CATCH BASIN
DMH	STORM LINE MANHOLE
SMH	SANITARY LINE MANHOLE
	UTILITY POLE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)
B — B'	LINE OF CROSS SECTION

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
3. MW-17R, SBMW-18, MW-19R, MW-20R, AND B-17 THROUGH B-32 SURVEYED BY C.T. MALE ON NOVEMBER 24, 2008.

0 100' 200'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

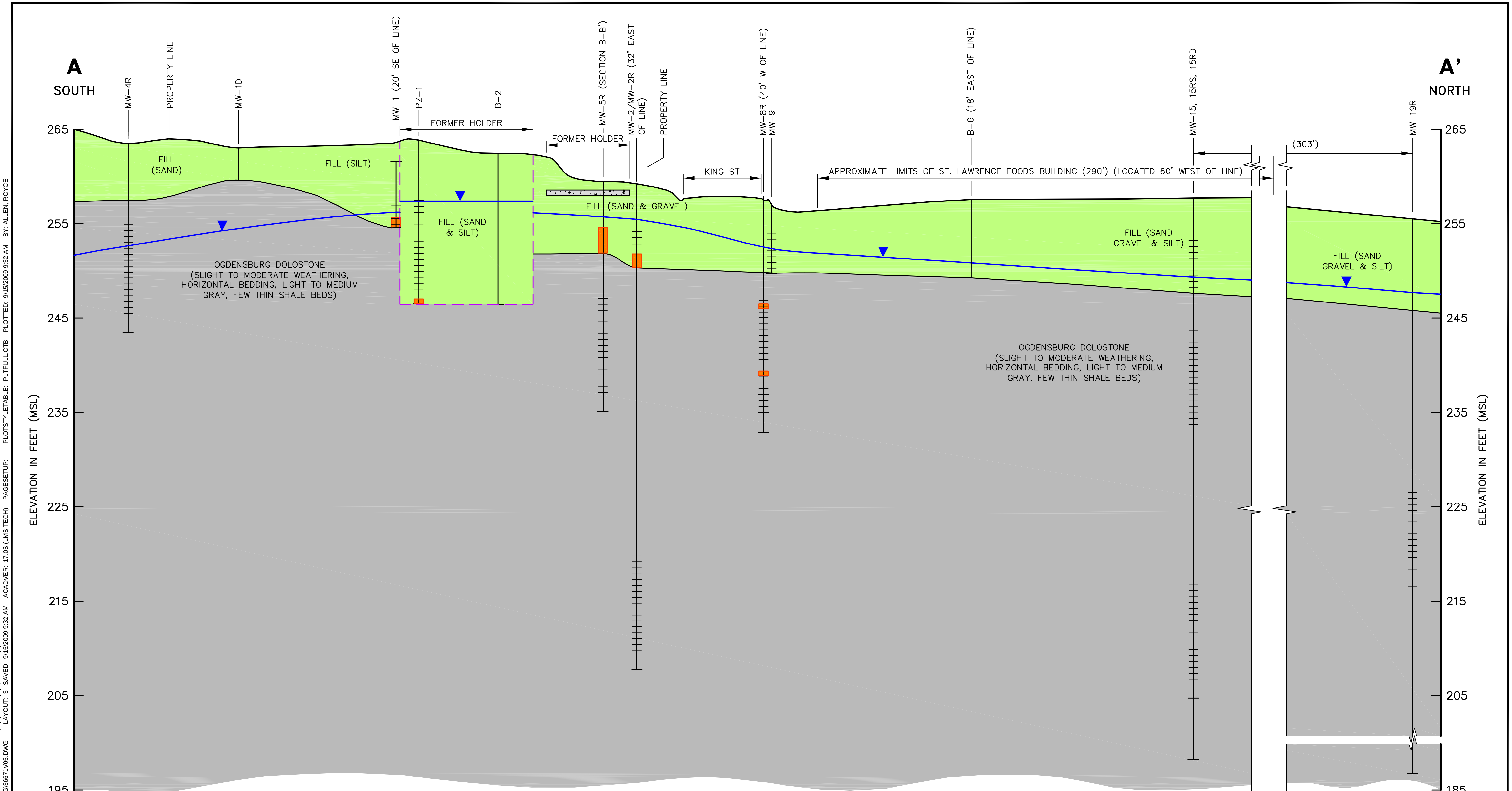
REMEDIAL INVESTIGATION

SITE MAP

ARCADIS

FIGURE

2



LEGEND:

MW-1D — BORING/WELL ID

TAR-LIKE NAPL OBSERVED IN SOIL/BEDROCK

SCREEN

BOTTOM OF BORING/WELL SCREEN

BOTTOM OF SUMP

APPROXIMATE WATER TABLE SURFACE

NOTES:

1. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
2. ELEVATIONS IN REFERENCE TO NAVD 1988.
3. GEOLOGIC CONTACT ARE INFERRED BETWEEN BORING/WELL LOCATIONS.

VERTICAL EXAGGERATION = 5X

0 10' 20'
VERT. SCALE IN FEET

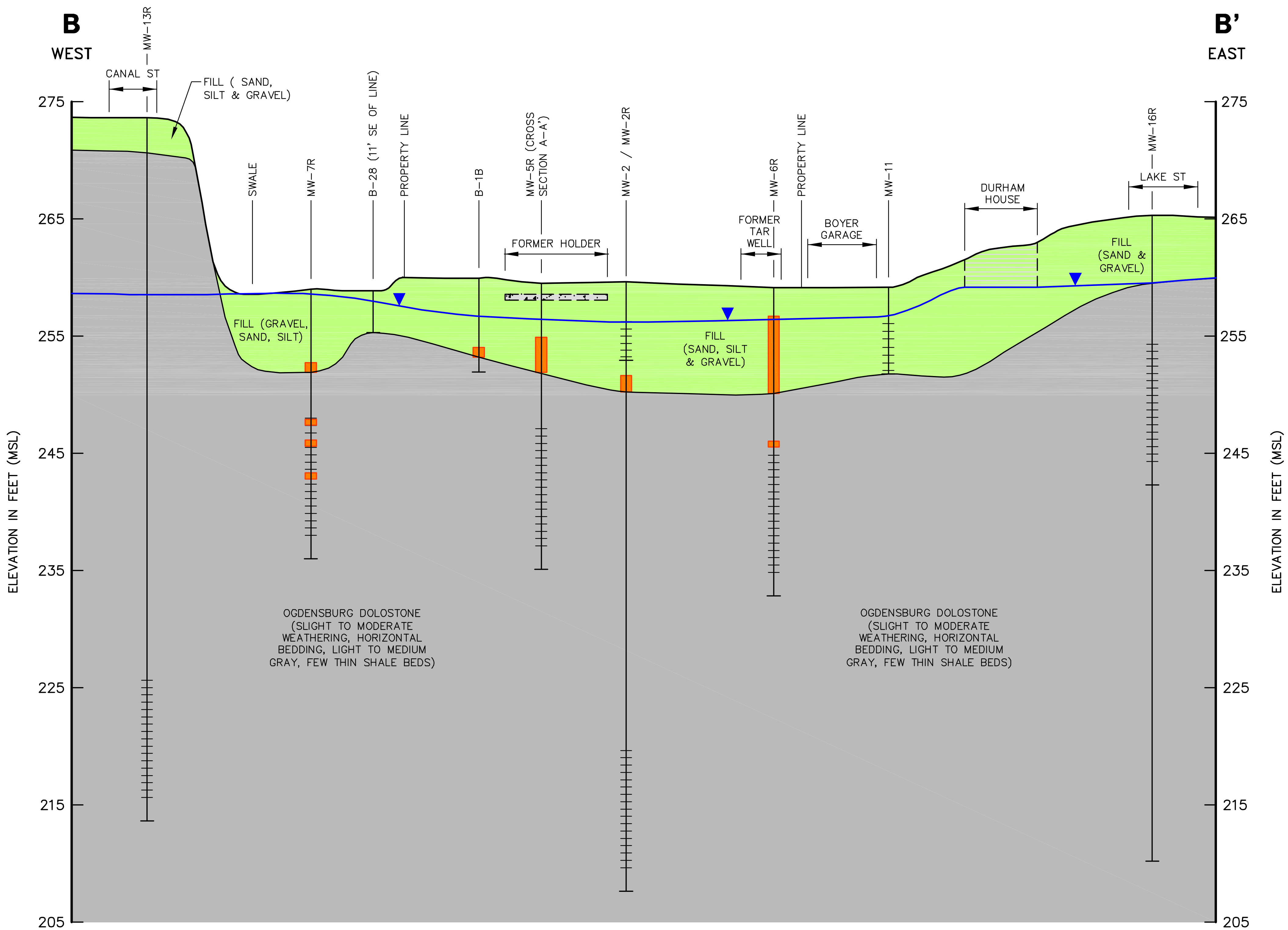
0 50' 100'
HORIZ. SCALE IN FEET

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

CROSS SECTION A-A'

ARCADIS

FIGURE
3



LEGEND:

MW-1D — BORING/WELL ID
TAR-LIKE NAPL OBSERVED IN SOIL/BEDROCK
SCREEN
BOTTOM OF BORING/WELL SCREEN
BOTTOM OF SUMP
APPROXIMATE WATER TABLE SURFACE

NOTES:

1. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
2. ELEVATIONS IN REFERENCE TO NAVD 1988.
3. GEOLOGIC CONTACT ARE INFERRED BETWEEN BORING/WELL LOCATIONS.

VERTICAL EXAGGERATION = 5X

0 10' 20'
VERT. SCALE IN FEET

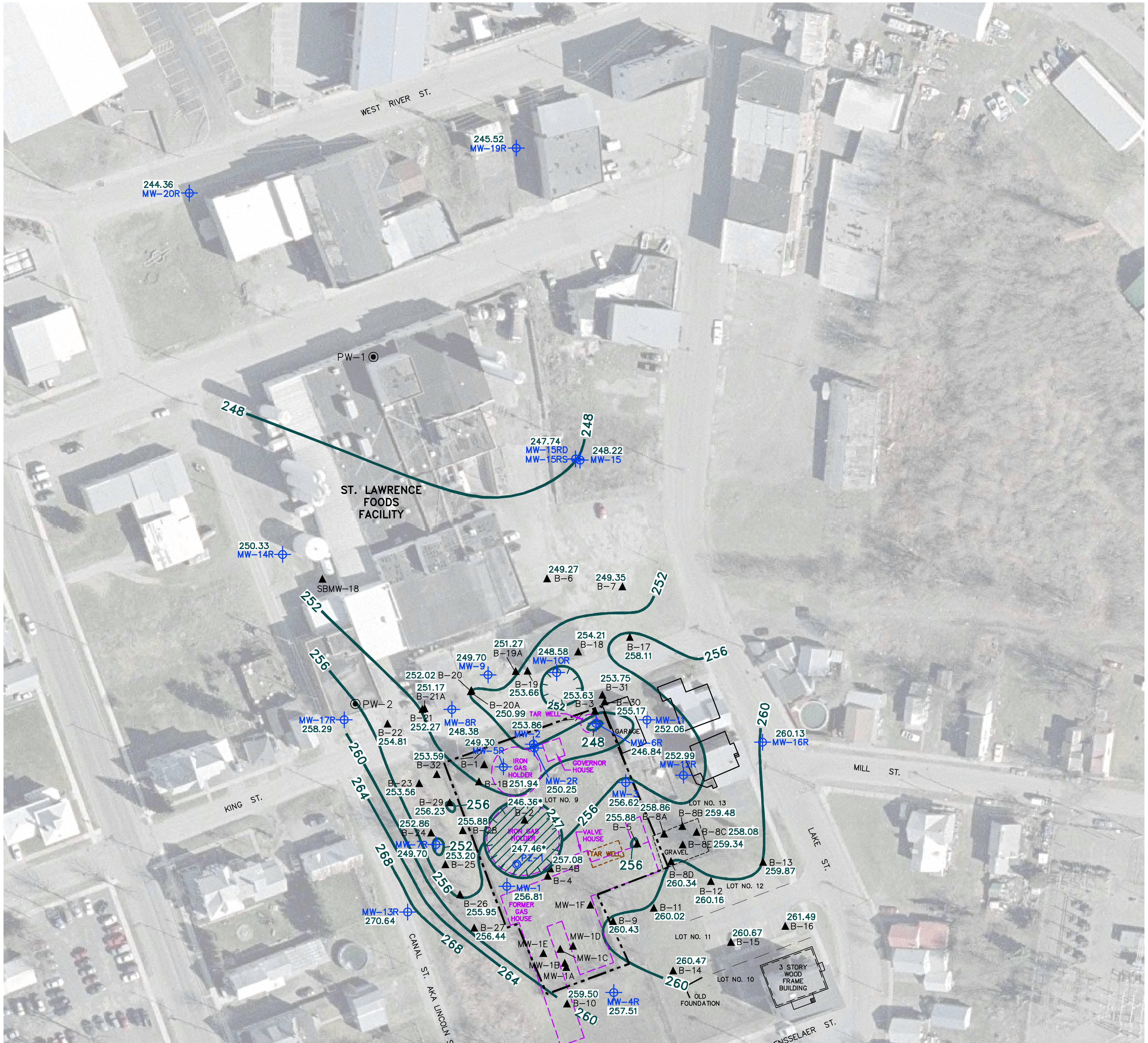
0 50' 100'
HORIZ. SCALE IN FEET

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

CROSS SECTION B-B'

ARCADIS

FIGURE
4



LEGEND:

MW-10 MONITORING WELL

PZ-1 PIEZOMETER

B-1 SOIL BORING

PW-1 APPROXIMATE LOCATION OF PRODUCTION WELL LOCATED INSIDE PRIMO FOODS FACILITY

TAR WELL FEATURE FROM 1909 SANBORN MAP

TAR WELL FEATURE FROM SEPTEMBER 1925 SANBORN MAP

APPROXIMATE SITE BOUNDARY

256 INFERRED BEDROCK SURFACE ELEVATION CONTOUR

256.81 BEDROCK SURFACE ELEVATION

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
3. MW-17R, SBMW-18, MW-19R, MW-20R, AND B-17 THROUGH B-32 SURVEYED BY C.T. MALE ON NOVEMBER 24, 2008.
4. BEDROCK ELEVATIONS FOR SOIL BORINGS AND OVERBURDEN MONITORING WELLS BASED ON THE DEPTH OF AUGER REFUSAL. BEDROCK ELEVATIONS FOR BEDROCK MONITORING WELLS BASED ON TOP OF BEDROCK AS OBSERVED DURING BEDROCK CORING.

0 100' 200'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

BEDROCK SURFACE ELEVATION CONTOUR MAP

ARCADIS

FIGURE
5

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:RCB AMS R.ALLEN LD:(Opt) PIC:(Opt) PM:S.POWLIN TM:(Opt) LYR:ON=*;OFF=*REF* PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/14/2009 11:38 AM BY: ALLEN, ROYCE
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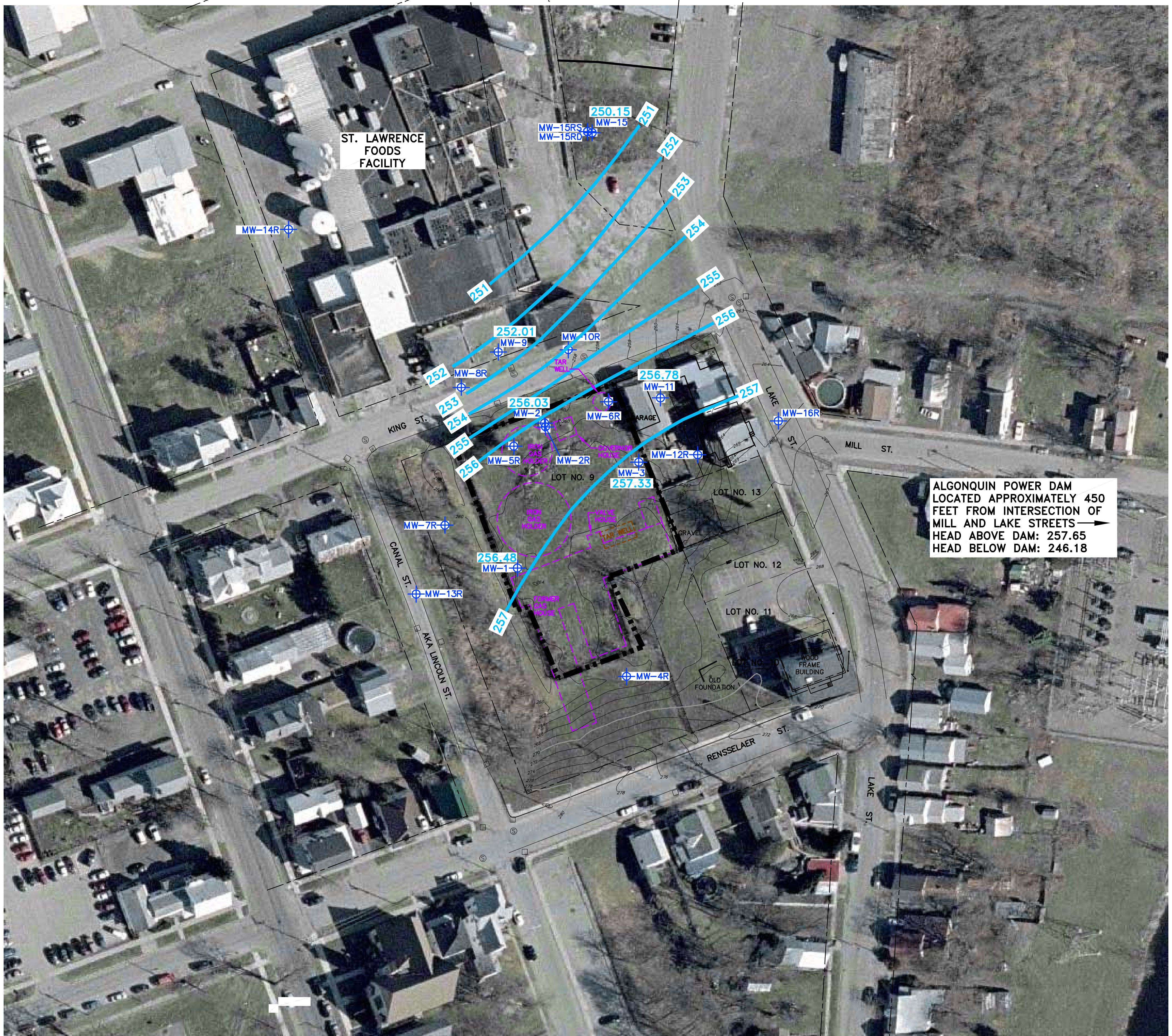


LEGEND:

MW-10	MONITORING WELL
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF WAY
	CHAINLINK FENCE
	UTILITY POLE
	CATCH BASIN
	MANHOLE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.

0 100' 200'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

WATER TABLE CONTOURS IN THE OVERBURDEN - 11/26/07

ARCADIS

FIGURE
6

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:RCB AMS R.ALLEN LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0036671\0001\00017\DWG\36671W01.DWG LAYOUT: 6 SAVED: 9/1/2009 3:56 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/1/2009 3:56 PM BY: ALLEN, ROYCE
XREFS: IMAGES: 36671X01.sid PROJECTNAME: ----

LEGEND:

- NAPL OBSERVED IN BEDROCK
- NAPL OBSERVED IN OVERBURDEN
- NAPL OBSERVED IN BOTH BEDROCK AND OVERBURDEN
- SHEEN/STAINING/BLEBS/ODOR OBSERVED IN OVERBURDEN
- MW-10 MONITORING WELL
- VP-1 SOIL VAPOR SAMPLING POINT
- PZ-1 PIEZOMETER
- HA-1 HAND-AUGER BORING
- TP-1 TEST PIT
- B-1 SOIL BORING
- SS-01 SURFACE SOIL SAMPLE
- PW-1 APPROXIMATE LOCATION OF PRODUCTION WELL LOCATED INSIDE PRIMO FOODS FACILITY
- TAR WELL FEATURE FROM 1909 SANBORN MAP
- TAR WELL FEATURE FROM SEPTEMBER 1925 SANBORN MAP
- APPROXIMATE SITE BOUNDARY
- APPROXIMATE ROAD RIGHT-OF WAY

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.

0 100' 200'

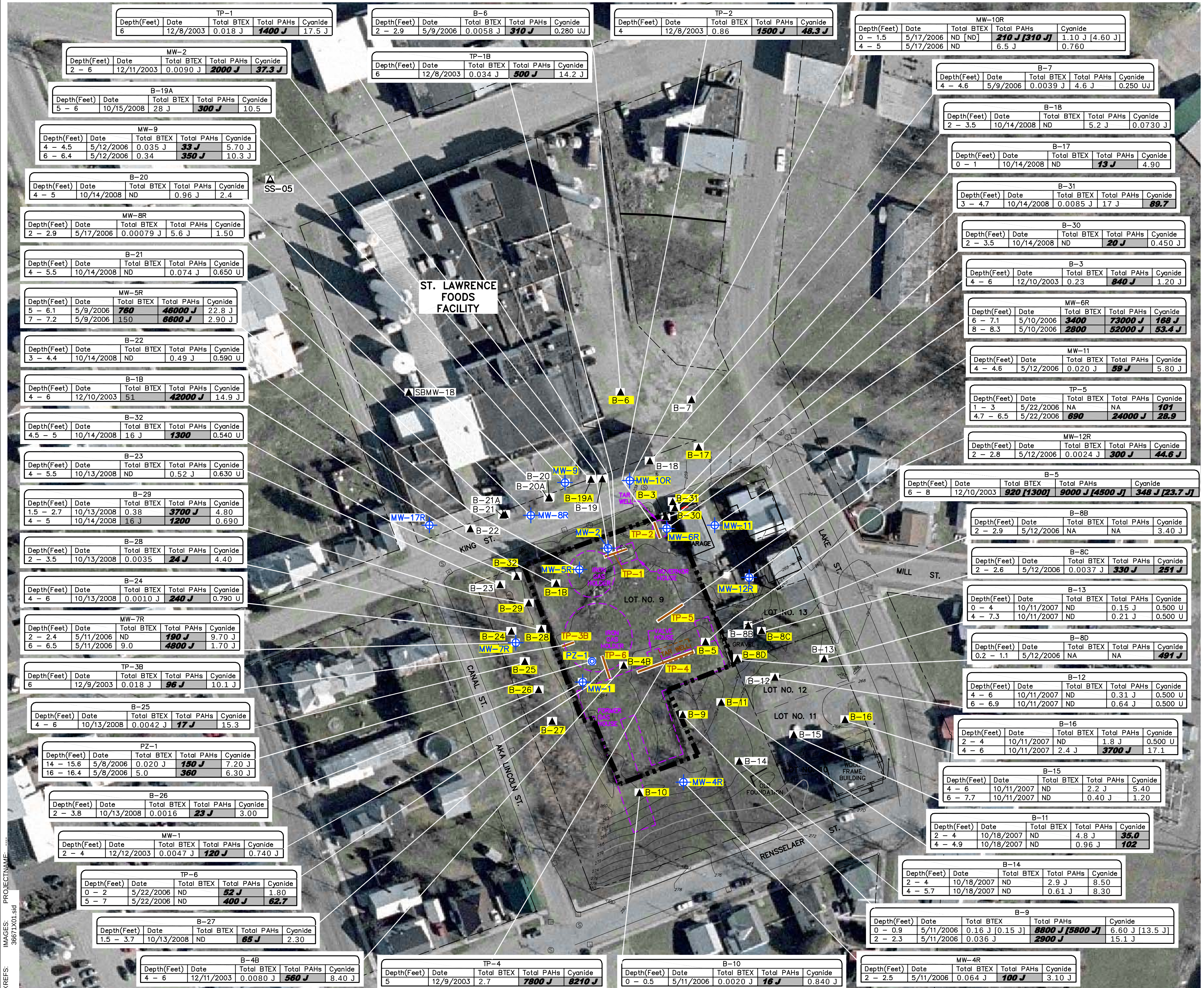
GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

NAPL/SHEEN OBSERVATION

ARCADIS

FIGURE
7



TP-1				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
6	12/8/2003	0.018 J	**1400 J**	17.5 J

MW-2				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 6	12/11/2003	0.0090 J	**2000 J**	**37.3 J**

B-19A				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
5 – 6	10/15/2008	28 J	**300 J**	10.5

MW-9				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 4.5	5/12/2006	0.035 J	**33 J**	5.70 J
6 – 6.4	5/12/2006	0.34	**350 J**	10.3 J

B-20				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 5	10/14/2008	ND	0.96 J	2.4

MW-8R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.9	5/17/2006	0.00079 J	5.6 J	1.50

B-21				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 5.5	10/14/2008	ND	0.074 J	0.650 U

MW-5R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
5 – 6.1	5/9/2006	**760**	**46000 J**	22.8 J
7 – 7.2	5/9/2006	150	**6600 J**	2.90 J

B-22				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
3 – 4.4	10/14/2008	ND	0.49 J	0.590 U

B-1B				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	12/10/2003	51	**42000 J**	14.9 J

B-32				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4.5 – 5	10/14/2008	16 J	**1300**	0.540 U

B-23				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 5.5	10/13/2008	ND	0.52 J	0.630 U

B-29				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
1.5 – 2.7	10/13/2008	0.38	**3700 J**	4.80
4 – 5	10/14/2008	16 J	**1200**	0.690

B-28				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 3.5	10/13/2008	0.0035	**24 J**	4.40

B-24				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	10/13/2008	0.0010 J	**240 J**	0.790 U

MW-7R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.4	5/11/2006	ND	**190 J**	9.70 J
6 – 6.5	5/11/2006	9.0	**4800 J**	1.70 J

TP-3B				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
6	12/9/2003	0.018 J	**96 J**	10.1 J

B-25				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	10/13/2008	0.0042 J	**17 J**	15.3

PZ-1				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
14 – 15.6	5/8/2006	0.020 J	**150 J**	7.20 J
16 – 16.4	5/8/2006	5.0	**360**	6.30 J

B-26				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 3.8	10/13/2008	0.0016	**23 J**	3.00

MW-1				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 4	12/12/2003	0.0047 J	**120 J**	0.740 J

TP-6				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0 – 2	5/22/2006	ND	**52 J**	1.80
5 – 7	5/22/2006	ND	**400 J**	**62.7**

B-27				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
1.5 – 3.7	10/13/2008	ND	**65 J**	2.30

B-4B				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	12/11/2003	0.0080 J	**560 J**	8.40 J

TP-4				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
5	12/9/2003	2.7	**7800 J**	**8210 J**

B-10				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0 – 0.5	5/11/2006	0.0020 J	**16 J**	0.840 J

B-6				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.9	5/9/2006	0.0058 J	**310 J**	0.280 UJ

TP-1B				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
6	12/8/2003	0.034 J	**500 J**	14.2 J

TP-2				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4	12/8/2003	0.86	**1500 J**	**48.3 J**

MW-10R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0 – 1.5	5/17/2006	ND [ND]	**210 J [310 J]**	1.10 J [4.60 J]
4 – 5	5/17/2006	ND	6.5 J	0.760

B-7				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 4.6	5/9/2006	0.0039 J	4.6 J	0.250 UJ

B-18				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 3.5	10/14/2008	ND	5.2 J	0.0730 J

B-17				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0 – 1	10/14/2008	ND	**13 J**	4.90

B-31				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
3 – 4.7	10/14/2008	0.0085 J	17 J	**89.7**

B-30				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 3.5	10/14/2008	ND	**20 J**	0.450 J

B-3				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	12/10/2003	0.23	**840 J**	1.20 J

MW-6R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
6 – 7.1	5/10/2006	**3400**	**73000 J**	**168 J**
8 – 8.3	5/10/2006	**2800**	**52000 J**	**53.4 J**

MW-11				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 4.6	5/12/2006	0.020 J	**59 J**	5.80 J

TP-5				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
1 – 3	5/22/2006	NA	NA	**101**
4.7 – 6.5	5/22/2006	**690**	**24000 J**	**28.9**

MW-12R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.8	5/12/2006	0.0024 J	**300 J**	**44.6 J**

B-5				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
6 – 8	12/10/2003	**920 [1300]**	**9000 J [4500 J]**	**348 J [23.7 J]**

B-8B				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.9	5/12/2006	NA	NA	3.40 J

B-8C				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.6	5/12/2006	0.0037 J	**330 J**	**251 J**

B-13				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0 – 4	10/11/2007	ND	0.15 J	0.500 U
4 – 7.3	10/11/2007	ND	0.21 J	0.500 U

B-8D				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0.2 – 1.1	5/12/2006	NA	NA	**491 J**

B-12				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	10/11/2007	ND	0.31 J	0.500 U
6 – 6.9	10/11/2007	ND	0.64 J	0.500 U

B-16				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 4	10/11/2007	ND	1.8 J	0.500 U
4 – 6	10/11/2007	2.4 J	**3700 J**	17.1

B-15				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4 – 6	10/11/2007	ND	2.2 J	5.40
6 – 7.7	10/11/2007	ND	0.40 J	1.20

B-11				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 4	10/18/2007	ND	4.8 J	**35.0**
4 – 4.9	10/18/2007	ND	0.96 J	**102**

B-14				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 4	10/18/2007	ND	2.9 J	8.50
4 – 5.7	10/18/2007	ND	0.61 J	8.30

B-9				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
0 – 0.9	5/11/2006	0.16 J [0.15 J]	**8800 J [5800 J]**	6.60 J [13.5 J]
2 – 2.3	5/11/2006	0.036 J	**2900 J**	15.1 J

MW-4R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
2 – 2.5	5/11/2006	0.064 J	**100 J**	3.10 J

LEGEND:

MW-10	MONITORING WELL
TP-1	TEST PIT
B-1	SOIL BORING
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF WAY
	CHAINLINK FENCE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)
J	APPROXIMATE VALUE
U	ANALYTE WAS NOT DETECTED AT ASSOCIATED DETECTION LIMITS
ND	NOT DETECTED
NA	NOT ANALYZED
SCO	SOIL CLEANUP OBJECTIVES
	ONE OR MORE CONSTITUENTS AT THIS LOCATION EXCEED ONE OR MORE APPLICABLE CRITERIA

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
3. SAMPLE RESULTS REPORTED IN MG/KG. DUPLICATE RESULTS PRESENTED IN BRACKETS.
4. BOLDED VALUES WERE DETECTED.
5. SHADING INDICATES THAT ONE OR MORE COMPOUNDS WERE DETECTED AT A CONCENTRATION ABOVE THE NYSDEC RESTRICTED USE RESIDENTIAL SCO.
6. ITALICS INDICATES THAT ONE OR MORE COMPOUNDS WERE DETECTED AT A CONCENTRATION ABOVE THE NYSDEC RESTRICTED USE COMMERCIAL SCO.

0 100' 200'

GRAPHIC SCALE

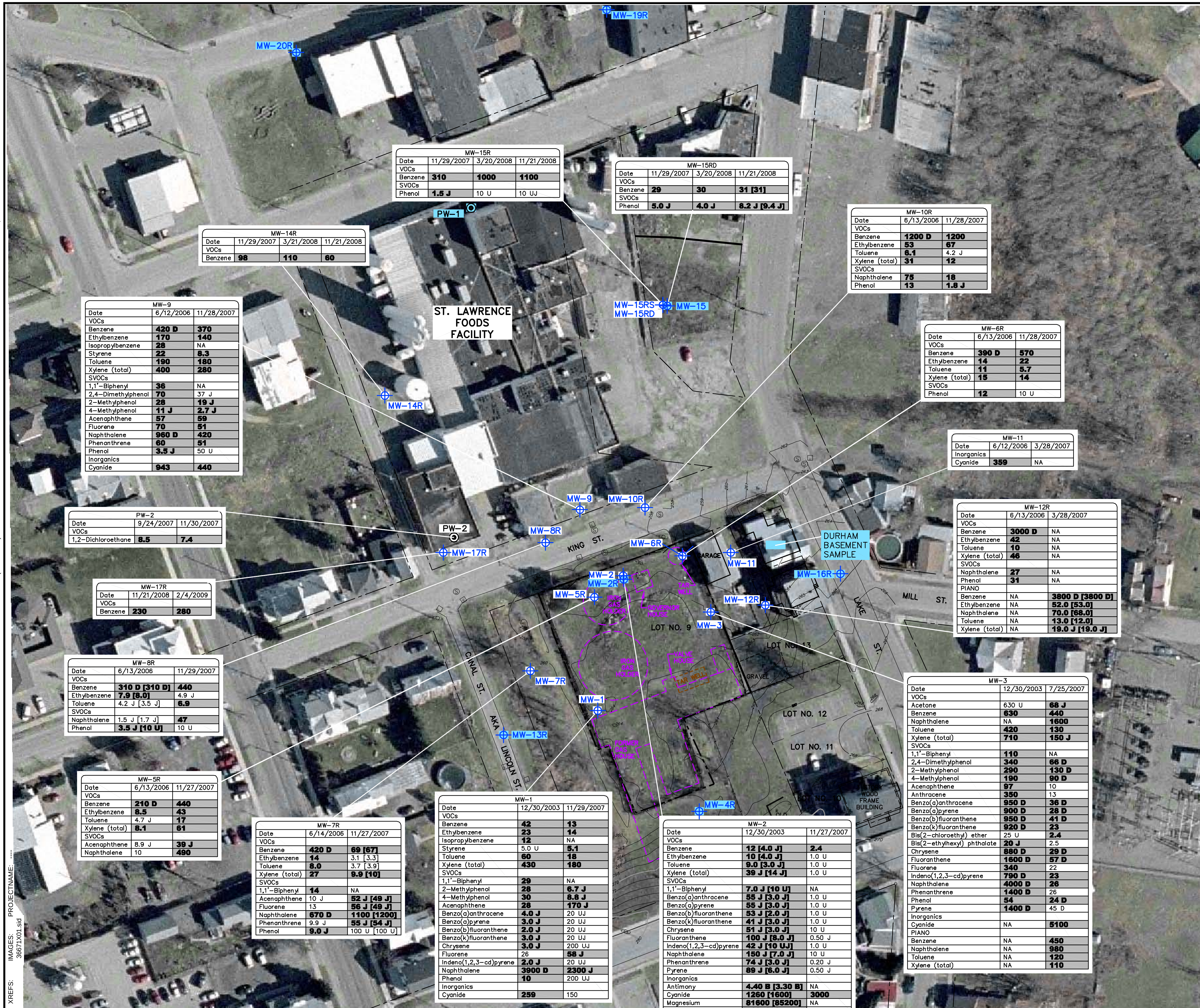
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

SUBSURFACE SOIL DATA

ARCADIS

FIGURE
8

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:RCB, AMS, R.ALLEN LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:ON=*;OFF=*REF* PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/1/2009 10:12 AM BY: ALLEN, ROYCE
G:\ENVCAD\SYRACUSE\ACT\B0036671\0001\00017\DWG\36671B10.DWG LAYOUT: 8 SAVED: 9/1/2009 10:12 AM ACADVER: 17.0S (LMS TECH)
XREFS: IMAGES: 36671X01.sid PROJECTNAME: ----



MW-15R			
Date	11/29/2007	3/20/2008	11/21/2008
VOCs			
Benzene	**310**	**1000**	**1100**
SVOCs			
Phenol	**1.5 J**	10 U	10 UJ

MW-15RD			
Date	11/29/2007	3/20/2008	11/21/2008
VOCs			
Benzene	**29**	**30**	**31 [31]**
SVOCs			
Phenol	**5.0 J**	**4.0 J**	**8.2 J [9.4 J]**

MW-14R			
Date	11/29/2007	3/21/2008	11/21/2008
VOCs			
Benzene	**98**	**110**	**60**

MW-10R		
Date	6/13/2006	11/28/2007
VOCs		
Benzene	**1200 D**	**1200**
Ethylbenzene	**53**	**67**
Toluene	**6.1**	4.2 J
Xylene (total)	**31**	**12**
SVOCs		
Naphthalene	**75**	**18**
Phenol	**13**	**1.8 J**

MW-9		
Date	6/12/2006	11/28/2007
VOCs		
Benzene	**420 D**	**370**
Ethylbenzene	**170**	**140**
Isopropylbenzene	**28**	NA
Styrene	**22**	**8.3**
Toluene	**190**	**180**
Xylene (total)	**400**	**280**
SVOCs		
1,1'-Biphenyl	**36**	NA
2,4-Dimethylphenol	**70**	37 J
2-Methylphenol	**28**	**19 J**
4-Methylphenol	**11 J**	**2.7 J**
Acenaphthene	**57**	**59**
Fluorene	**70**	**51**
Naphthalene	**960 D**	**420**
Phenanthrene	**60**	**51**
Phenol	**3.5 J**	50 U
Inorganics		
Cyanide	**943**	**440**

MW-6R		
Date	6/13/2006	11/28/2007
VOCs		
Benzene	**390 D**	**570**
Ethylbenzene	**14**	**22**
Toluene	**11**	**5.7**
Xylene (total)	**15**	**14**
SVOCs		
Phenol	**12**	10 U

MW-11		
Date	6/12/2006	3/28/2007
Inorganics		
Cyanide	**359**	NA

PW-2		
Date	9/24/2007	11/30/2007
VOCs		
1,2-Dichloroethane	**8.5**	**7.4**

MW-12R		
Date	6/13/2006	3/28/2007
VOCs		
Benzene	**3000 D**	NA
Ethylbenzene	**42**	NA
Toluene	**10**	NA
Xylene (total)	**46**	NA
SVOCs		
Naphthalene	**27**	NA
Phenol	**31**	NA
PIANO		
Benzene	NA	**3800 D [3800 D]**
Ethylbenzene	NA	**52.0 [53.0]**
Naphthalene	NA	**70.0 [68.0]**
Toluene	NA	**13.0 [12.0]**
Xylene (total)	NA	**19.0 J [19.0 J]**

MW-17R		
Date	11/21/2008	2/4/2009
VOCs		
Benzene	**230**	**280**

MW-8R		
Date	6/13/2006	11/29/2007
VOCs		
Benzene	**310 D [310 D]**	**440**
Ethylbenzene	**7.9 [8.0]**	4.9 J
Toluene	4.2 J [3.5 J]	**6.9**
SVOCs		
Naphthalene	1.5 J [1.7 J]	**47**
Phenol	**3.5 J [10 U]**	10 U

MW-3		
Date	12/30/2003	7/25/2007
VOCs		
Acetone	630 U	**68 J**
Benzene	**630**	**440**
Naphthalene	NA	**1600**
Toluene	**420**	**130**
Xylene (total)	**710**	**150 J**
SVOCs		
1,1'-Biphenyl	**110**	NA
2,4-Dimethylphenol	**340**	**66 D**
2-Methylphenol	**290**	**130 D**
4-Methylphenol	**190**	**90 D**
Acenaphthene	**97**	10
Anthracene	**350**	13
Benzo(a)anthracene	**950 D**	**36 D**
Benzo(a)pyrene	**900 D**	**28 D**
Benzo(b)fluoranthene	**950 D**	**41 D**
Benzo(k)fluoranthene	**920 D**	**23**
Bis(2-chloroethyl) ether	25 U	**2.4**
Bis(2-ethylhexyl) phthalate	**20 J**	2.5
Chrysene	**880 D**	**29 D**
Fluoranthene	**1600 D**	**57 D**
Fluorene	**340**	22
Indeno(1,2,3-cd)pyrene	**790 D**	**23**
Naphthalene	**4000 D**	**26**
Phenanthrene	**1400 D**	26
Phenol	**54**	**24 D**
Pyrene	**1400 D**	45 D
Inorganics		
Cyanide	NA	**5100**
PIANO		
Benzene	NA	**450**
Naphthalene	NA	**980**
Toluene	NA	**120**
Xylene (total)	NA	**110**

MW-5R		
Date	6/13/2006	11/27/2007
VOCs		
Benzene	**210 D**	**440**
Ethylbenzene	**8.5**	**43**
Toluene	4.7 J	**17**
Xylene (total)	**8.1**	**61**
SVOCs		
Acenaphthene	8.9 J	**39 J**
Naphthalene	10	**490**

MW-7R		
Date	6/14/2006	11/27/2007
VOCs		
Benzene	**420 D**	**69 [67]**
Ethylbenzene	**14**	3.1 [3.3]
Toluene	**8.0**	3.7 [3.9]
Xylene (total)	**27**	**9.9 [10]**
SVOCs		
1,1'-Biphenyl	**14**	NA
Acenaphthene	10 J	**52 J [49 J]**
Fluorene	13	**56 J [49 J]**
Naphthalene	**670 D**	**1100 [1200]**
Phenanthrene	9.9 J	**55 J [54 J]**
Phenol	**9.0 J**	100 U [100 U]

MW-1		
Date	12/30/2003	11/29/2007
VOCs		
Benzene	**42**	**13**
Ethylbenzene	**23**	**14**
Isopropylbenzene	**12**	NA
Styrene	5.0 U	**5.1**
Toluene	**60**	**18**
Xylene (total)	**430**	**180**
SVOCs		
1,1'-Biphenyl	**29**	NA
2-Methylphenol	**28**	**6.7 J**
4-Methylphenol	**30**	**8.8 J**
Acenaphthene	**28**	**170 J**
Benzo(a)anthracene	**4.0 J**	20 UJ
Benzo(a)pyrene	**3.0 J**	20 UJ
Benzo(b)fluoranthene	**2.0 J**	20 UJ
Benzo(k)fluoranthene	**3.0 J**	20 UJ
Chrysene	**3.0 J**	200 UJ
Fluorene	26	**58 J**
Indeno(1,2,3-cd)pyrene	**2.0 J**	20 UJ
Naphthalene	**3900 D**	**2300 J**
Phenol	**10**	200 UJ
Inorganics		
Cyanide	**259**	150

MW-2		
Date	12/30/2003	11/27/2007
VOCs		
Benzene	**12 [4.0 J]**	**2.4**
Ethylbenzene	**10 [4.0 J]**	1.0 U
Toluene	**9.0 [3.0 J]**	1.0 U
Xylene (total)	**39 J [14 J]**	1.0 U
SVOCs		
1,1'-Biphenyl	**7.0 J [10 U]**	NA
Benzo(a)anthracene	**55 J [3.0 J]**	1.0 U
Benzo(a)pyrene	**55 J [3.0 J]**	1.0 U
Benzo(b)fluoranthene	**53 J [2.0 J]**	1.0 U
Benzo(k)fluoranthene	**41 J [3.0 J]**	1.0 U
Chrysene	**51 J [3.0 J]**	10 U
Fluoranthene	**100 J [8.0 J]**	0.50 J
Indeno(1,2,3-cd)pyrene	**42 J [10 UJ]**	1.0 U
Naphthalene	**150 J [7.0 J]**	10 U
Phenanthrene	**74 J [3.0 J]**	0.20 J
Pyrene	**89 J [6.0 J]**	0.50 J
Inorganics		
Antimony	**4.40 B [3.30 B]**	NA
Cyanide	**1260 [1600]**	**3000**
Magnesium	**81600 [85200]**	NA
Manganese	**716 [692]**	NA

LEGEND:

- MW-10 — MONITORING WELL
- PW-1 — APPROXIMATE LOCATION OF PRODUCTION WELL LOCATED INSIDE PRIMO FOODS FACILITY
- TAR WELL — FEATURE FROM 1909 SANBORN MAP
- TAR WELL — FEATURE FROM SEPTEMBER 1925 SANBORN MAP
- APPROXIMATE SITE BOUNDARY
- APPROXIMATE ROAD RIGHT-OF WAY
- CHAINLINK FENCE
- UTILITY POLE
- CATCH BASIN
- MANHOLE
- 258 — TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)
- SAMPLING RESULTS DID NOT EXCEED NEW YORK STATE CLASS GA STANDARDS OR GUIDANCE VALUES

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
3. BOLDED/SHADED RESULTS EXCEED THE NEW YORK STATE CLASS GA STANDARDS OR GUIDANCE VALUES.
4. RESULTS WITH NO EXCEEDANCES ARE NOT SHOWN.
5. RESULTS GIVEN IN ug/L.

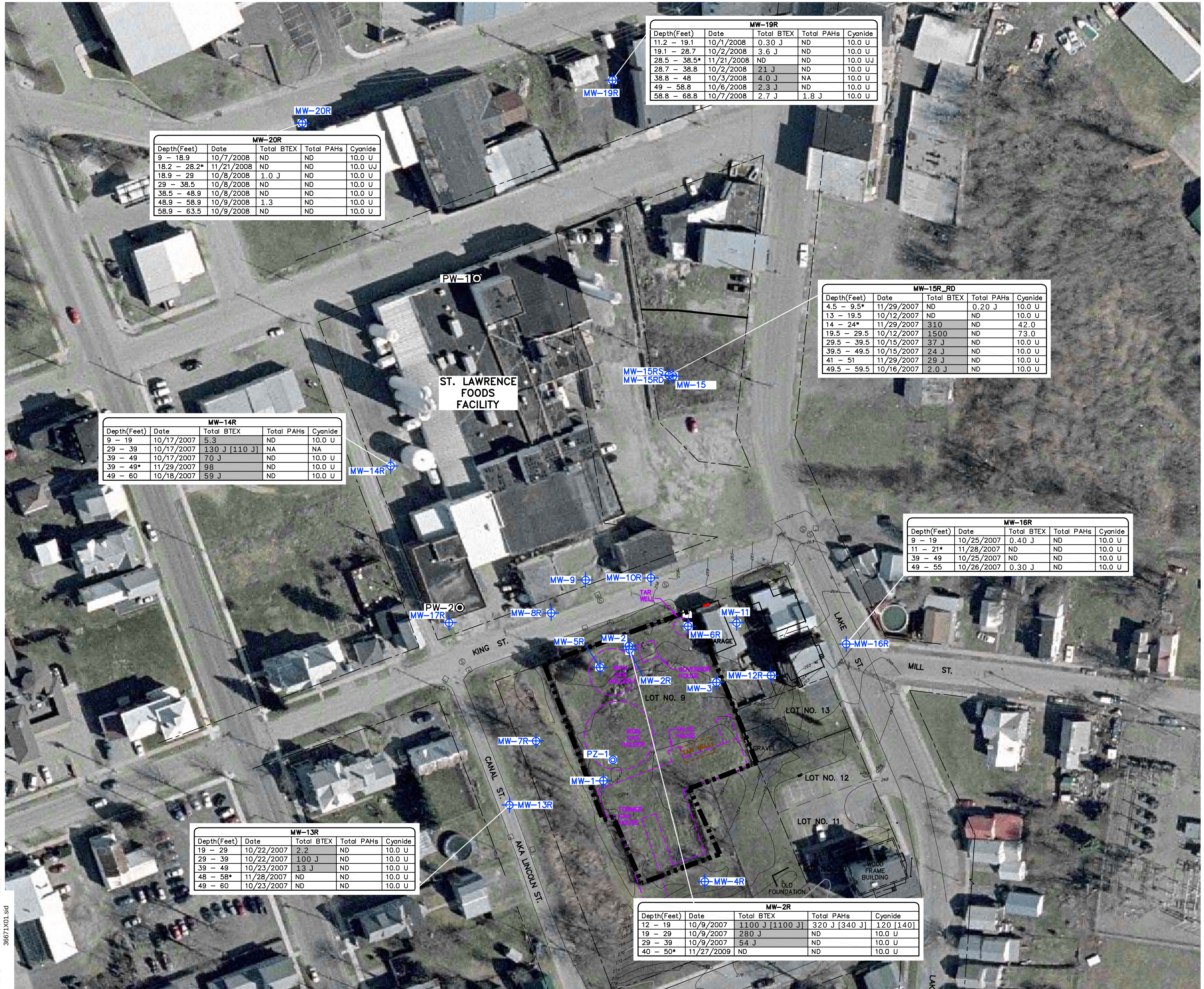
0 100' 200'
GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

MONITORING WELL GROUNDWATER ANALYTICAL RESULTS

ARCADIS

FIGURE 9



MW-19R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
11.2 – 19.1	10/1/2008	0.30 J	ND	10.0 U
19.1 – 28.7	10/2/2008	3.6 J	ND	10.0 U
28.5 – 38.5*	11/21/2008	ND	ND	10.0 UJ
28.7 – 38.8	10/2/2008	21 J	ND	10.0 U
38.8 – 48	10/3/2008	4.0 J	NA	10.0 U
49 – 58.8	10/6/2008	2.3 J	ND	10.0 U
58.8 – 68.8	10/7/2008	2.7 J	1.8 J	10.0 U

MW-20R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
9 – 18.9	10/7/2008	ND	ND	10.0 U
18.2 – 28.2*	11/21/2008	ND	ND	10.0 UJ
18.9 – 29	10/8/2008	1.0 J	ND	10.0 U
29 – 38.5	10/8/2008	ND	ND	10.0 U
38.5 – 48.9	10/8/2008	ND	ND	10.0 U
48.9 – 58.9	10/9/2008	1.3	ND	10.0 U
58.9 – 63.5	10/9/2008	ND	ND	10.0 U

MW-15R_RD				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
4.5 – 9.5*	11/29/2007	ND	0.20 J	10.0 U
13 – 19.5	10/12/2007	ND	ND	10.0 U
14 – 24*	11/29/2007	310	ND	42.0
19.5 – 29.5	10/12/2007	1500	ND	73.0
29.5 – 39.5	10/15/2007	37 J	ND	10.0 U
39.5 – 49.5	10/15/2007	24 J	ND	10.0 U
41 – 51	11/29/2007	29 J	ND	10.0 U
49.5 – 59.5	10/16/2007	2.0 J	ND	10.0 U

MW-14R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
9 – 19	10/17/2007	5.3	ND	10.0 U
29 – 39	10/17/2007	130 J [110 J]	NA	NA
39 – 49	10/17/2007	70 J	ND	10.0 U
39 – 49*	11/29/2007	98	ND	10.0 U
49 – 60	10/18/2007	59 J	ND	10.0 U

MW-16R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
9 – 19	10/25/2007	0.40 J	ND	10.0 U
11 – 21*	11/28/2007	ND	ND	10.0 U
39 – 49	10/25/2007	ND	ND	10.0 U
49 – 55	10/26/2007	0.30 J	ND	10.0 U

MW-13R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
19 – 29	10/22/2007	2.2	ND	10.0 U
29 – 39	10/22/2007	100 J	ND	10.0 U
39 – 49	10/23/2007	13 J	ND	10.0 U
48 – 58*	11/28/2007	ND	ND	10.0 U
49 – 60	10/23/2007	ND	ND	10.0 U

MW-2R				
Depth(Feet)	Date	Total BTEX	Total PAHs	Cyanide
12 – 19	10/9/2007	1100 J [1100 J]	320 J [340 J]	120 [140]
19 – 29	10/9/2007	280 J	ND	10.0 U
29 – 39	10/9/2007	54 J	ND	10.0 U
40 – 50*	11/27/2009	ND	ND	10.0 U

LEGEND:

MW-10	MONITORING WELL
PW-1	APPROXIMATE LOCATION OF PRODUCTION WELL LOCATED INSIDE PRIMO FOODS FACILITY
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF WAY
	CHAINLINK FENCE
	UTILITY POLE
	CATCH BASIN
	MANHOLE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)
J	APPROXIMATE VALUE
U	ANALYTE WAS NOT DETECTED AT ASSOCIATED DETECTION LIMITS
ND	NOT DETECTED
NA	NOT ANALYZED
*	SAMPLE COLLECTED FROM MONITORING WELL SCREENED AT GIVEN INTERVAL

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
3. SAMPLE RESULTS REPORTED IN UG/L. DUPLICATE RESULTS PRESENTED IN BRACKETS.
4. BOLDED VALUES WERE DETECTED. SHADED VALUES INDICATE THAT ONE OR MORE COMPOUNDS OF THE CONSTITUENT CLASS EXCEED NEW YORK STATE CLASS GA STANDARDS OR GUIDANCE VALUES.

0 100' 200'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

PACKER TEST AND MONITORING WELL GROUNDWATER DATA

ARCADIS

FIGURE
10

CITY:SYRACUSE, N.Y. DIV/GROUP:ENVCAD-141 DB:RCB, AMS, R.ALLEN LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:ON=*;OFF=*REF* PAGESETUP: ---- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 9/1/2009 4:06 PM BY: ALLEN, ROYCE
G:\ENVCAD\SYRACUSE\ACT\B0036671\0001\00017\DWG\36671B11.DWG LAYOUT: 10 SAVED: 9/1/2009 4:06 PM ACADVER: 17.0S (LMS TECH)
XREFS: IMAGES: 36671X01.sid PROJECTNAME: ---

LEGEND:

- UPLAND SCRUB/SHRUB
- MOWED FIELD
- DRAINAGE DITCH/SWALE
- RESIDENTIAL/COMMERCIAL/INDUSTRIAL

0 120' 240'
GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

COVERTYPE MAP

ARCADIS

FIGURE
11

CITY: SYR DIV/GROUP: AIT DB: JCR KEW LD: PIC: PM: TM: TR:
NAT GIRD (36671.0.10)
Q:\NationalGrid\Ogdensburg\mxd\NYSDEC_Wetlands.mxd - 8/28/2009 @ 10:09:08 AM

LEGEND:

NYSDEC FRESHWATER WETLAND

0 0.5 1 Miles

GRAPHIC SCALE

NOTES:

1. NEW YORK STATE REGULATORY FRESHWATER WETLANDS DATA FOR ST. LAWRENCE COUNTY WAS PUBLISHED BYTHE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND OBTAINED FROM THE CORNELL UNIVERSITY GEOSPATIAL INFORMATION REPOSIITORY AT HTTP://CUGIR.MANNLIB.CORNELL.EDU.

2. 2006 ORTHOIMAGERY OBTAINED FROM THE NEW YORK STATE GIS CLEARINGHOUSE AT HTTP://WWW.NYSGIS.STATE.NY.US/

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS

NEW YORK STATE FRESHWATER WETLANDS MAP

ARCADIS

FIGURE
12

CITY: SYR DIV/GROUP: AIT DB: JCR LD: PIC: PM: TM: TR:
NAT GIRD (36671.0.10)
Q:\NationalGrid\Ogdensburg\mxd\NWI_Wetlands.mxd - 8/28/2009 @ 10:10:37 AM

LEGEND:

NATIONAL WETLANDS INVENTORY WETLAND

0 0.5 1 Miles

GRAPHIC SCALE

NOTES:

1. NATIONAL WETLANDS DATA FOR ST. LAWRENCE COUNTY WAS PUBLISHED BY THE U.S. FISH AND WILDLIFE SERVCE AND OBTAINED FROM HTTP://WWW.FWS.GOV/WETLANDS/

2. 2006 ORTHOIMAGERY OBTAINED FROM THE NEW YORK STATE GIS CLEARINGHOUSE AT HTTP://WWW.NYSGIS.STATE.NY.US/

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

FISH AND WILDLIFE RESOURCES IMPACT ANALYSIS

NATIONAL WETLANDS INVENTORY MAP

ARCADIS

FIGURE 13

ARCADIS

Appendices

ARCADIS

Appendix A

Test Pit Logs, Soil Boring, and Monitoring Well Completion Logs

Date Start/Finish: 12/10/2003
Drilling Company: Parratt-Wolff
Driller's Name: Jim Lansing
Drilling Method: Hollow Stem Auger
Auger Size: 4-1/4"
Rig Type: Ingersoll Rand 8300
Sampling Method: 2" Split Spoon

Northing: 2136557.0938
Easting: 232924.3761
Casing Elevation: NA

Borehole Depth: 8' below grade
Surface Elevation: 259.94 ft. AMSL

Geologist: Matthew Kohberger

Well/Boring ID: B-1B

Client: Niagara Mohawk
A National Grid Company

Location: King Street Former MGP Site
Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	260	1	0-2	0.3	8 6 4 3	10	ND			Brown SILT, trace fine to medium Sand, stiff, dry. [FILL]	Borehole backfilled with cement-bentonite grout to grade.
		2	2-4	0.5	5 3 24 16	27	ND			Brown to black SILT, trace fine to medium Sand, Brick cobbles, very stiff, dry. [FILL]	
5	255	3	4-6	1.8	4 7 9 10	16	ND	X		Black CLAY, some fine to medium Sand, very stiff, moist. Heavy black staining, strong coal tar odor, NAPL at 5.5' - 8' bgs.	
		4	6-8	0.3	17 50/0.2 NA NA	50	ND			Black CLAY and fine GRAVEL, trace fine to medium Sand, very stiff, wet, heavy black staining, strong coal tar odor, NAPL. Gray Limestone/Dolostone chips in shoe of split spoon.	
10	250									Auger refusal at 8.0' bgs.	

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sampes B-1b-4-6 collected from 4' - 6' bgs for Full TCL/TAL parameter and TOC.

Boring B-1 attempted 15' south of the fence on the northern edge of the site, and 35' east of the fence on the western edge of the site. Refusal at 2' bgs, caused by former at-grade holder foundation.

Project: 36671.002
Data File:B-1B.dat
Template:J:\rockware\LogPlot2001\Logfiles\36671\boring_well03.ldf
Date: 12/17/2003

Date Start/Finish: 12/9/2003
Drilling Company: Parratt-Wolff
Driller's Name: Jim Lansing
Drilling Method: Hollow Stem Auger
Auger Size: 4-1/4"
Rig Type: Ingersoll Rand 8300
Sampling Method: 2" Split Spoon

Northing: 2136520.4164
Easting: 232968.0848
Casing Elevation: NA

Borehole Depth: 16' below grade
Surface Elevation: 262.46 ft. AMSL

Geologist: Matthew Kohberger

Well/Boring ID: B-2

Client: Niagara Mohawk
A National Grid Company

Location: King Street Former MGP Site
Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0		1	0-2	0.9	16, 62, 34, 20	96	ND			Brown SILT, trace fine Sand, hard, dry. [FILL] Broken LIMESTONE (Cobble). [FILL]	
	260	2	2-4	0.5	5, 42, 26, 17	68	ND			Brown CLAY, little fine to medium SAND, hard, moderate plasticity, moist. [FILL]	Borehole backfilled with grout to grade.
5		3	4-6	0.6	6, 25, 11, 6	36	ND			Brown SILT, little fine to medium Sand, dense, moist. [FILL]	
	255	4	6-8	0.3	4, 2, 4, 8	6	ND			Gray SILT, little fine to medium Sand, trace coarse Gravel, loose, very moist. [FILL]	
		5	8-10	0.3	11, 4, 2, 2	6	ND			Dark brown to dark gray SILT, some fine to coarse Sand, Brick fragments, loose, wet. [FILL]	
10					4					Gray fine SAND and SILT, some Brick fragments, very loose, wet, slight coal tar odor. [FILL]	

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
No sample collected.

Project: 36671.002
Data File:B-2.dat
Template:J:\rockware\LogPlot2001\Logfiles\36671\boring_well03.ldf
Date: 12/17/2003

Client:
Niagara Mohawk
A National Grid Company

Site Location:
King Street Former MGP Site
Ogdensburg, New York

Well/Boring ID: B-2

Borehole Depth: 16' below grade

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
		6	10-12	0.5	2 1 1	3	ND			Gray fine SAND and SILT, some Brick fragments, very loose, wet, slight coal tar odor. [FILL]	
	250	7	12-14	NA	NA NA NA NA	NA	NA				
15		8	14-16	0.5	4 4 7 9	11	ND			Gray fine to medium SAND and SILT, some Brick fragments, very loose, wet, slight coal tar odor. [FILL]	
		9	16-16.1	0.1	25/0.1	NA	ND			Brick fragment in shoe of spoon.	
	245									Split spoon refusal at 16.1' bgs.	
20											
	240										

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
No sample collected.

Project: 36671.002
Data File:B-2.dat

Template:J:\rockware\LogPlot2001\Logfiles\36671\boring_well03.ldf
Date: 12/17/2003

Date Start/Finish: 12/10/2003 **Drilling Company:** Parratt-Wolff **Driller's Name:** Jim Lansing **Drilling Method:** Hollow Stem Auger **Auger Size:** 4-1/4" **Rig Type:** Ingersoll Rand 8300 **Sampling Method:** 2" Split Spoon	**Northing:** 2136624.7601 **Easting:** 233035.4124 **Casing Elevation:** NA **Borehole Depth:** 5.3' below grade **Surface Elevation:** 258.93 ft. AMSL **Geologist:** Matthew Kohberger	**Well/Boring ID:** B-3 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	260										
0					NA					Auger through ASPHALT to 0.5' bgs.	Borehole backfilled with cement-bentonite grout to grade.
		1	0-2	0.3	34 24 15	39	ND			Gray SILT, some fine to coarse Sand, little fine Gravel, dense, dry.	
		2	2-4	0.3	9 5 4 9	9	ND			Black SILT, little fine to coarse Sand, trace Gravel, loose, moist, slight coal tar odor.	
	255	3	4-5.3	1.0	3 2 50/0.3	52	ND	X		Black CLAY, little fine to medium Sand, high plasticity, stiff, moist, heavy black staining, sheen, strong coal tar odor, NAPL. Shake test indicated the presence of apparent LNAPL and DNAPL. Bottom 0.1' is wet. Gray Limestone/Dolostone in shoe of split spoon.	
5										Auger refusal at approximately 5.3' bgs.	
	250										
10											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil samples B-3-4-6 collected from 4' - 6' bgs for BTEX, PAH, Total Cyanide, and TOC.

Date Start/Finish: 12/11/2003 **Drilling Company:** Parratt-Wolff **Driller's Name:** Jim Lansing **Drilling Method:** Hollow Stem Auger **Auger Size:** 4-1/4" **Rig Type:** Ingersoll Rand 8300 **Sampling Method:** 2" Split Spoon	**Northing:** 2136473.8186 **Easting:** 232992.8277 **Casing Elevation:** NA **Borehole Depth:** 6.8' below grade **Surface Elevation:** 263.88 ft. AMSL **Geologist:** Matthew Kohberger	**Well/Boring ID:** B-4B **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	265										
0		1	0-2	0.8	24 17 9 6	22	ND			Brown SILT, some fine to coarse Sand, little fine to coarse Gravel, medium dense, moist.	
		2	2-4	1.0	4 3 4 10	7	ND	X		Dark brown CLAY, some fine to medium Sand, moderate plasticity, moist, slight black staining, slight coal tar odor.	Borehole backfilled with cement-bentonite grout to grade.
5	260	3	4-6	0.9	2 3 4 4	7	0.8	X		Dark brown to dark gray CLAY, some fine Sand, moderate plasticity, medium stiff, moist, heavy black staining, sheen, coal tar odor.	
		4	6-6.8	0.0	2 50/0.2	NA	NA			NAPL at 6.8' bgs.	
										Auger refusal at 6.8' bgs.	
	255										
10											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample B-4b collected from 2' - 4' bgs on hold.
Soil samples B-4b-4-6 collected from 4' - 6' bgs for BTEX, PAHs, Total Cyanide, and TOC.

Boring B-4 attempted, approximately 10' southwest of B-4b. Refusal at 4.4' bgs.

Date Start/Finish: 12/10/2003	**Northing:** 2136497.8665
Drilling Company: Parratt-Wolff	**Easting:** 233075.8717
Driller's Name: Jim Lansing	**Casing Elevation:** NA
Drilling Method: Hollow Stem Auger	**Borehole Depth:** 8.6' below grade
Auger Size: 4-1/4"	**Surface Elevation:** 264.48 ft. AMSL
Rig Type: Ingersoll Rand 8300	**Geologist:** Matthew Kohberger
Sampling Method: 2" Split Spoon	

Well/Boring ID: B-5

Client: Niagara Mohawk
A National Grid Company

Location: King Street Former MGP Site
Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	265										
0		1	0-2	0.9	11, 8, 11, 10	19	ND			Brown to gray SILT, some fine to medium Sand, medium dense, dry.	
		2	2-4	0.9	8, 8, 9, 14	17	ND			Gray SILT, little fine Sand, medium dense, dry.	Borehole backfilled with cement-bentonite grout to grade.
5	260	3	4-6	0.7	9, 5, 3, 4	8	ND			Gray CLAY and SILT, trace fine Sand, low plasticity, medium stiff, moist. Bottom 0.1' stained black with strong coal tar odor.	
		4	6-8	1.2	4, 5, 3, 26	8	5.7	X		Black CLAY and SILT, trace fine Sand, low plasticity, medium stiff, very moist to wet, heavy black staining, sheen, strong coal tar odor, NAPL.	
		5	8-8.6	0.1	22, 50/0.1	NA	ND			DOLOMITE/LIMESTONE (chips), wet, heavy black staining, sheen, strong coal tar odor, NAPL.	
										Auger refusal at 8.6' bgs. Gray Limestone/Dolostone in split spoon.	
10	255										

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample B-5-6-8 and duplicate B-55-6-8 collected from 6' - 8' bgs for BTEX, PAHs, Total Cyanide, and TOC.

Date Start/Finish: 5/9/2006
Drilling Company: Parratt Wolff
Driller's Name: Rick Nvatka
Drilling Method: Hollow Stem Auger

Sampler Size: 2" x 2'
Auger Size: 4-1/4"
Rig Type: CME 75 Truck-Mount

Northing: 2136740.003
Easting: 232995.2685

Casing Elevation: NA
Surface Elevation: 257.57' AMSL
Borehole Depth: 8.3' bgs

Geologist: Kristina Gross

Well ID: B-6

Client: National Grid

Location: King St. Former MGP Site
Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										ASPAHLT.	
		1	0.5-2	5 5 4		1.1	10.7			Light brown fine SAND, trace Coal fragments, medium dense, dry.	
										WOOD, soft, dry.	
	255	2	2-4	5 4 8 8	12	0.9	22.1			Dark gray subangular fine to medium GRAVEL, loose, dry.	Cement-bentonite grout tremied to grade with Asphalt surface patch.
5		3	4-6	1 2 2 2	4	0.6	11.1			WOOD, little to trace gray SILT, yellow fine SAND, and decomposed Mortar, loose, moist.	
	250	4	6-8	3 2 2 3	4	0.5	6.9			WOOD, trace gray fine Sand, soft, moist to wet.	
		5	8-8.3	50/0.3	NA	0.2	8.0				
										Refusal at 8.3' bgs.	
10											
	245										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 5/9/2006	**Northing:** 2136732.292	**Well ID:**	**B-7**
Drilling Company: Parratt Wolff	**Easting:** 233067.338	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 258.75' AMSL		
Sampler Size: 2" x 2'	**Borehole Depth:** 9.4' bgs		
Auger Size: 4-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										ASPAHLT.	
		1	0.5-2	4 14 6		1.2	5.7			Light brown fine SAND, trace subrounded medium Gravel, loose, dry.	
	255	2	2-4	2 3 4 3	7	0.7	2.3			Gray fine SAND, little Silt and Wood, trace medium Sand and subrounded fine Gravel, medium dense, dry to moist.	Cement-bentonite grout tremied to grade with Asphalt surface patch.
5		3	4-6	2 1 2 1	3	0.6	250				
		4	6-8	2 2 2 2	4	0.4	81.7			Medium brownish-black WOOD and fine SAND, little Silt, organic decay-type odor, loose, moist to wet.	
	250	5	8-9.4	2 2 50/0.4	NA	0.8	180				
10										Refusal at 9.4' bgs.	
	245										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	5/12/2006
Drilling Company:	Parratt Wolff
Driller's Name:	Rick Nvatka
Drilling Method:	Hollow Stem Auger
Sampler Size:	2" x 2' Split Spoon
Auger Size:	4-1/4"
Rig Type:	CME 75 Truck-Mount
Northing:	2136495.816
Easting:	233107.1641
Casing Elevation:	NA
Surface Elevation:	263.66' AMSL
Borehole Depth:	4.8' bgs
Geologist:	Kristina Gross
Well ID:	**B-8a**
Client:	National Grid
Location:	King St. Former MGP Site Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	265										
0		1	0-2	1 3 3 2	6	0.9	2.2			Brown SILT, some fine Sand, little Roots and Grass, loose, wet due to rain. [FILL] Brown fine to medium SAND, CINDERS, and crushed red and tan BRICK, little Porcelaine, loose, moist due to rain. [FILL]	Cement-bentonite grout tremied to grade.
	260	2	2-4	1 1 1 1	2	1.1	1.7				
		3	4-4.8	1 50/0.3	NA	0.2	1.4				
5										Refusal at 4.8' bgs.	
	255										
10											
	250										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Project: 36671.001 Template: J:\LogPlot\36671\Well2006BR.ldf
Data File:J:\LogPlot\36671\B-8a.dat Date: 6/5/2006

Date Start/Finish: 5/12/2006	**Northing:** 2136503.091	**Well ID:**	**B-8b**
Drilling Company: Parratt Wolff	**Easting:** 233124.7798	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 263.78' AMSL		
Sampler Size: 2" x 2' Split Spoon	**Borehole Depth:** 4.3' bgs		
Auger Size: 4-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	265										
0		1	0-2	3, 3, 2, 2	5	0.8	0.4			Brown SILT, some fine Sand, little Roots and Grass, loose, wet due to rain. [FILL] Dark brown fine to medium SAND and CINDERS, little crushed red and tan Brick and Coal, loose, moist due to rain. [FILL]	Cement-bentonite grout tremied to grade.
	260	2	2-4	1, 2, 3, 2	5	0.9	0.5			Dark brown fine to medium SAND, CINDERS, and SILT, little crushed red and tan Brick, trace blue-staining on tan Brick, moist due to rain. [FILL] Dark brown fine to medium SAND and CINDERS, little crushed red and tan Brick and Coal, loose, moist due to rain. [FILL]	
		3	4-4.3	50/0.3	NA	0.1	0.3				
5										Refusal at 4.3' bgs.	
	255										
10											
	250										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 5/12/2006	**Northing:** 2136497.558	**Well ID:**	**B-8c**
Drilling Company: Parratt Wolff	**Easting:** 233138.4412	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 263.78' AMSL		
Sampler Size: 2" x 2' Split Spoon	**Borehole Depth:** 5.7' bgs		
Auger Size: 4-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	265										
0		1	0-2	1 5 6 4	11	1.3	1.2			Dark brown SILT, little fine Sand, Roots, and Grass, loose, wet due to rain. [FILL] Dark brown fine SAND, some Cinders, little to trace crushed red and tan Brick, trace Coal fragments and Silt, loose, moist due to rain. [FILL]	Cement-bentonite grout tremied to grade.
	260	2	2-4	5 8 7 6	15	0.4	2.0				
5		3	4-5.7	1 1 1 50/0.2	2	0.3	0.9				
										Refusal at 5.7' bgs.	
	255										
10											
	250										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 5/12/2006	**Northing:** 2136469.44	**Well ID:**	**B-8d**
Drilling Company: Parratt Wolff	**Easting:** 233113.927	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 264.04		
Sampler Size: 2" x 2' Split Spoon	**Borehole Depth:** 3.7' bgs		
Auger Size: 4-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	265										
0		1	0-2	1 2 3 3	5	1.1	2.2			Brown SILT, little fine Sand, Roots, and Grass, loose, wet due to rain. [FILL] Dark brown fine to medium SAND and CINDERS, little Silt, trace crushed red and tan Brick, trace blue staining, loose, moist due to rain. [FILL]	Cement-bentonite grout tremied to grade.
		2	2-3.7	2 1 48 50/0.3	49	0.8	1.7			Reddish-brown SILT, little to some Ash, Cinders, and crushed tan Brick, loose, moist due to rain. [FILL]	
	260									Refusal at 3.7' bgs.	
5											
	255										
10											
	250										
15											

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

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Project: 36671.001 Template: J:\LogPlot\36671\Well2006BR.ldf

Data File:J:\LogPlot\36671\B-8d.dat Date: 6/5/2006

Date Start/Finish: 5/12/2006	**Northing:** 2136485.445	**Well ID:**	**B-8e**
Drilling Company: Parratt Wolff	**Easting:** 233125.0989	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 263.84' AMSL		
Sampler Size: 2" x 2' Split Spoon	**Borehole Depth:** 4.5' bgs		
Auger Size: 4-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	265										
0		1	0-2	WOH 1 2 1	3	0.9	0.2			Dark brown fine to medium SAND, some Cinders, trace Ash, loose, moist to wet due to rain. [FILL] Trace blue staining from 2.0' - 2.6' bgs.	Cement-bentonite grout tremied to grade.
	260	2	2-4	1 2 2 1	4	1.1	0.5			Crushed red and tan BRICK and SILT, loose, moist due to rain. [FILL]	
		3	4-4.5	3 50/0.0	NA	0.3	0.3				
5										Refusal at 4.5' bgs.	
	255										
10											
	250										
15											

Remarks:
bgs = below ground surface; NA = Not Applicable/Available;
WOH = Weight of Hammer.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

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Infrastructure, environment, facilities

Date Start/Finish:	5/11/2006	**Northing:**	2136412.245	**Well ID:**	**B-9**
Drilling Company:	Parratt Wolff	**Easting:**	233058.3216	**Client:**	National Grid
Driller's Name:	Rick Nvatka	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	263.13' AMSL		
Sampler Size:	2" x 2'	**Borehole Depth:**	2.7' bgs		
Auger Size:	4-1/4"	**Geologist:**	Kristina Gross		
Rig Type:	CME 75 Truck-Mount				

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	265										
0		1	0-2	3 2 4 7	6	0.9	15.6			Medium brown fine SILT, little fine Sand and Roots, loose, dry. Dark brown fine to medium SAND, little Coal and Cinders, trace red and tan Brick fragments, loose, dry.	Cement-bentonite grout tremied to grade.
		2	2-2.7	16 50/0.2	NA	0.3	86.5			Medium to dark brown fine SAND and SILT, trace crushed red Brick, loose, dry to moist.	
	260									Refusal at 2.7' bgs.	
5											
	255										
10											
	250										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 5/11/2006	**Northing:** 2136333.207	**Well ID:** **B-10**
Drilling Company: Parratt Wolff	**Easting:** 233014.4708	**Client:** National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** NA	**Location:** King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 261.4' AMSL	
Sampler Size: 2" x 2'	**Borehole Depth:** 1.9' bgs	
Auger Size: 4-1/4"	**Geologist:** Kristina Gross	
Rig Type: CME 75 Truck-Mount		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
0										Medium brown fine SAND, little Silt and Roots, loose, dry.	Cement-bentonite grout tremied to grade.
	260	1	0-1.9	2 5 5 50/0.4	10	0.5	0.0			Dark brown fine SAND, little angular fine Gravel, medium dense, dry to moist.	
										Refusal at 1.9' bgs.	
5	255										
10	250										
15											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	10/18/07	**Northing:**	2136424.8682	**Well ID:**	**B-11**
Drilling Company:	Parratt Wolff	**Easting:**	233097.4391	**Client:**	National Grid
Driller's Name:	Glenn Lansing	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	264.92		
Sampler Size:	2" x 2'	**Borehole Depth:**	4.9' bgs		
Auger Size:	4-1/4"	**Geologist:**	Jennifer Sandorf		
Rig Type:	CME 55 Truck-Mount				

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
0	265	1	0-2	2 2 3 3	5	1.4	0.2			Brown fine to medium SAND, little Roots, loose, dry. Dark brown fine to coarse SAND, little gray Rock fragments, moderately loose, dry.	Borehole backfilled with bentonite to grade.
		2	2-4	4 9 9 6	18	1.8	0.0			Brown fine to coarse SAND, little fine to medium Gravel, trace Ash and black Coal fragments, trace Glass fragments, medium dense, dry.	
		3	4-4.9	6 50/ 0.4	50/ 0.4	0.8	0.0			As above, gray Rock fragments stuck in tip of shoe, dry.	
5	260									Refusal at 4.9' bgs.	
10	255										
15	250										

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Analytical samples collected 2-4' and 4-4.9' bgs.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	10/11/07	**Northing:**	2136450.2874	**Well ID:**	**B-12**
Drilling Company:	Parratt Wolff	**Easting:**	233152.0436	**Client:**	National Grid
Driller's Name:	Glenn Lansing	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	267.06		
Sampler Size:	2" x 2'	**Borehole Depth:**	6.9' bgs		
Auger Size:	4-1/4"	**Geologist:**	Jennifer Sandorf		
Rig Type:	CME 55 Truck-Mount				

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	270										
0		1		2, 2, 3, 4	5	1.0	NA			TOPSOIL and Grass.	Borehole backfilled with bentonite to grade.
										Gray-brown fine to medium SAND, little fine to medium Gravel, trace Silt, moderately loose, moist from rain.	
	265									Brown fine to medium SAND, some Silt, trace fine to coarse Gravel, moderately loose, dry.	
		2	2-4	9, 8, 2, 3	10	0.8	NA				
		3	4-6	4, 2, 2, 3	4	0.8	NA			Dry to moist.	
5											
		4	6-6.9	8, 50/0.4	50/0.4	0.8	NA			Wet, grading to gray weathered Rock fragments in tip of spoon.	
	260									Refusal at 6.9' bgs.	
10											
	255										
15											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.
NA = PID not functioning due to rain.
Analytical samples collected 4-6' and 6-6.9' bgs.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/11/07	**Northing:** 2136468.8803	**Well ID:**	**B-13**
Drilling Company: Parratt Wolff	**Easting:** 233201.9432	**Client:**	National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 267.17		
Sampler Size: 2" x 2'	**Borehole Depth:** 7.3' bgs		
Auger Size: 4-1/4"	**Geologist:** Jennifer Sandorf		
Rig Type: CME 55 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	270										
0		1	0-2	WOH, 1, 1, 2	2	0.5	NA			Brown TOPSOIL and Grass over brown fine SAND and SILT, trace fine to medium Gravel, moderately soft, slightly plastic, moist from rain.	Borehole backfilled with bentonite to grade.
	265	2	2-4	2, 8, 2, 2	10	0.2	NA			Light brown fine to coarse SAND and fine to medium GRAVEL, little Silt, moderately loose, wet.	
										Dark brown fine SAND and SILT, trace Roots, moderately soft, slightly plastic, wet.	
5		3	4-6	2, 3, 3, 2	6	0.9	NA			Tan fine to medium SAND, little Silt, little fine to coarse Gravel, Cobble stuck in tip of shoe, moderately soft, wet.	
	260	4	6-7.3	6, 4, 50/0.3	54/0.8	0.3	NA			Tan ROCK fragments, loose, wet.	
										Refusal at 7.3' bgs.	
10											
	255										
15											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available;
WOH = Weight of Hammer.
NA = PID not functioning due to rain.
Analytical samples collected 0-4' and 4-7.3' bgs.
Attempted to collect groundwater sample through temporary well point, but water did not come into well.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/18/07	**Northing:** 2136364.9162	**Well ID:**	**B-14**
Drilling Company: Parratt Wolff	**Easting:** 233115.8209	**Client:**	National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 266.17		
Sampler Size: 2" x 2'	**Borehole Depth:** 5.7' bgs		
Auger Size: 4-1/4"	**Geologist:** Jennifer Sandorf		
Rig Type: CME 55 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
0											
	265	1	0-2	2 6 2 3	8	0.8	0.0			Brown fine to medium SAND, little Roots, trace coarse Gravel, trace black natural Organics, moderately loose, dry.	Borehole backfilled with bentonite to grade.
		2	2-4	2 4 13 4	17	1.6	0.1			Brown fine to medium SAND, trace Silt, little gray Rock fragments, trace black Coal fragments, moderately loose to medium dense, dry.	
5		3	4-6	4 4 6 50/ 0.2	10	0.6	0.0			Dark brown fine to coarse SAND, some gray Rock fragments, moderately loose, dry. Refusal at 5.7' bgs.	
	260										
10											
	255										
15											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Analytical samples collected 2-4' and 4-5.7' bgs.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/11/07	**Northing:** 2136392.0165	**Well ID:**	**B-15**
Drilling Company: Parratt Wolff	**Easting:** 233171.1651	**Client:**	National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 268.37		
Sampler Size: 2" x 2'	**Borehole Depth:** 7.7' bgs		
Auger Size: 4-1/4"	**Geologist:** Jennifer Sandorf		
Rig Type: CME 55 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	270										
0		1	0-2	NA, 6, 6, 8	12	1.0	NA			ASPHALT. GRAVEL subbase. Brown fine to coarse SAND, little fine to medium Gravel, trace red Brick fragments and black Coal fragments, moderately loose to medium dense, dry.	Borehole backfilled with bentonite to grade.
	265	2	2-4	23, 14, 10, 11	24	0.6	NA			Gray ROCK fragments, loose, dry. SLAG.	
5		3	4-6	4, 6, 3, 3	9	1.0	NA			Red BRICK fragments, moderately loose, moist. Brown fine SAND and SILT, trace fine Gravel, slightly plastic, moderately soft, moist.	
		4	6-7.7	2, 2, 4, 50/0.2	6	0.9	NA			Gray-brown fine to medium SAND, some Silt, trace fine Gravel, trace Ash. Very weathered Rock fragments at bottom of spoon with orange-rust discoloration. Rock fragment stuck in tip of spoon.	
	260									Refusal at 7.7' bgs.	
10											
	255										
15											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.
NA = PID not functioning due to rain.
Analytical samples collected 4-6' and 6-7.7' bgs.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	10/11/07	**Northing:**	2136407.3636	**Well ID:**	**B-16**
Drilling Company:	Parratt Wolff	**Easting:**	233223.1524	**Client:**	National Grid
Driller's Name:	Glenn Lansing	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	268.39		
Sampler Size:	2" x 2'	**Borehole Depth:**	6.9' bgs		
Auger Size:	4-1/4"	**Geologist:**	Jennifer Sandorf		
Rig Type:	CME 55 Truck-Mount				

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	270										
0		1	0-2	NA, 5, 6, 6	11	1.2	NA			ASPHALT.	Borehole backfilled with bentonite to grade.
										GRAVEL subbase.	
										Tan fine SAND, little fine Gravel, moderately loose, dry.	
										Gray fine to medium SAND, little fine to coarse Gravel, trace black Coal fragments, moderately loose, dry.	
	265	2	2-4	5, 4, 4, 5	8	0.9	NA			Brown fine to medium SAND, little fine to coarse Gravel, moderately loose, dry.	
										Gray fine to coarse SAND and fine to coarse GRAVEL, trace Slag, loose, dry.	
5		3	4-6	3, 2, 1, 2	3	1.4	NA			Red BRICK fragments, moderately loose, dry.	
										Gray fine to coarse SAND and fine to coarse GRAVEL, loose, dry.	
										Black COAL fragments, faint hydrocarbon-type odor, medium dense, dry.	
		4	6-6.9	8, 50/0.4	50/0.4	0.2	NA			Gray ROCK fragments, moderately loose, moist to wet, no odor observed.	
										Refusal at 6.9' bgs.	
	260										
10											
	255										
15											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.
NA = PID not functioning due to rain.
Analytical samples collected 2-4' and 4-6' bgs.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/14/2008	**Northing:** 2136684.0461	**Well ID:**	**B-17**
Drilling Company: Parratt Wolff	**Easting:** 233074.4886	**Client:**	National Grid
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Push/Percussion	**Surface Elevation:** 259.11		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 1.0' bgs.		
Auger Size: NA	**Geologist:** Marcus Eriksson		
Rig Type: Tractor-mounted Direct Push			

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Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	1.0	0.0			ASPHALT	Asphalt Patch (0.0' - 0.5')
										Brown Silty CLAY, little fine Gravel, trace Cinders, red Brick, Coal fragments, and Slag, moist, non-plastic.	Bentonite Grout Slurry (0.5' - 1.0')
										Refusal at 1.0' bgs.	
	255										
5											
	250										
10											
	245										
15											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 0 - 1.0' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish: 10/14/08	**Northing:** 2136669.9672	**Well ID:**	**B-18**
Drilling Company: Parratt Wolff	**Easting:** 233025.0436	**Client:**	National Grid
Driller's Name: Doug Richmond	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Push/Percussion	**Surface Elevation:** 257.71		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 3.5' bgs		
Auger Size: NA	**Geologist:** Marcus Eriksson		
Rig Type: Tractor-mounted Direct Push			

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Brown fine to medium SAND and fine GRAVEL, moist, non-plastic.	Sand (0.0' - 0.5')
		1	02	NA	NA	1.3	0.0			COBBLE fragments(layered), moist, non-plastic.	
										Brown fine to medium SAND, little Slag, Cinders, red Brick, and fine to medium Gravel, moist, non-plastic.	
	255	2	2-4	NA	NA	1.0	0.0			Brown Silty CLAY, trace fine Gravel, and fine Sand, moist, non-plastic.	Bentonite Grout Slurry (0.5' - 3.5')
										Refusal at 3.5' bgs.	
5											
	250										
10											
	245										
15											

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 2 - 3.5' bgs. for VOC, SVOC, Total Cyanide, Free Cyanide

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Date Start/Finish:	10/14/2008	**Northing:**	2136651.7110	**Well ID:**	**B-19**
Drilling Company:	Parratt Wolff	**Easting:**	232976.6523	**Client:**	National Grid
Driller's Name:	Doug Richmond, Rod Trask	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Push/Percussion	**Surface Elevation:**	257.16		
Sampler Size:	2" Split Spoon	**Borehole Depth:**	3.5' bgs.		
Auger Size:	NA	**Geologist:**	Marcus Eriksson		
Rig Type:	Tractor-mounted Direct Push				

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	1.6	0.1			Brown fine to medium SAND and fine GRAVEL, trace Organics, moist, non-plastic COBBLE Fragments(layered) moist, non-platic. Brown Silty CLAY, little Cinders (0.8-1.1' bgs.) and fine Sand, trace Coal fragments, and red Brick, moist, moderately plastic.	Sand (0.0' - 0.5')
	255	2	2-4	NA	NA	0.7	0.1			Similar Soils, increased Sand with depth, saturated, non-plastic.	Bentonite Grout Slurry (0.5' - 3.5')
										Refusal at 3.5' bgs.	
5											
	250										
10											
	245										
15											

ARCADIS
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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 2 - 3.5' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish:	10/15/08	**Northing:**	2136651.1723	**Well ID:**	**B-19A**
Drilling Company:	Parratt Wolff	**Easting:**	232965.1981	**Client:**	National Grid
Driller's Name:	Doug Richmond	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	CME - 55	**Surface Elevation:**	257.27		
Sampler Size:	2" Split Spoon	**Borehole Depth:**	6.0' bgs.		
Auger Size:	3 1/4" ID	**Geologist:**	Marcus Eriksson		
Rig Type:	CME - 55				

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Drilled to 4.0'	Sand (0.0' - 0.5')
	255										Bentonite Grout Slurry (0.5' - 6.0')
5		1	4-6	NA	NA	2.0	164			Brown Silty CLAY and fine SAND, little fine Gravel, trace red Brick, moist, non-plastic. Little Black MGP-like Odor/Stain (5.7' - 6.0'), trace Sheen	
										Refusal at 6.0' bgs.	
	250										
10											
	245										
15											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 5 - 6' bgs. for VOC, SVOC, Total Cyanide, Free Cyanide.

Date Start/Finish:	10/14/2008	**Northing:**	2136632.9035	**Well ID:**	**B-20**
Drilling Company:	Parratt Wolff	**Easting:**	232922.9279	**Client:**	National Grid
Driller's Name:	Doug Richmond, Rod Trask	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Push/Percussion	**Surface Elevation:**	257.02		
Sampler Size:	2" Split Spoon	**Borehole Depth:**	5.0' bgs.		
Auger Size:	NA	**Geologist:**	Marcus Eriksson		
Rig Type:	Tractor-mounted Direct Push				

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	1.4	0.0			ASPHALT Brown fine to medium SAND and GRAVEL, little Cinders, trace red Brick, Coal fragments, moist, non-plastic. Brown Silty CLAY, some fine Sand, trace Cinders, red Brick, fine to medium Gravel, moist, moderately-plastic.	Sand (0.0' - 0.5')
	255	2	2-4	NA	NA	NR	NA			No Recovery (rock in tip of shoe)	Bentonite Grout Slurry (0.5' - 5.0')
		3	4-6	NA	NA	0.5	0.2			Brown Silty CLAY, little fine Gravel and fine Sand, trace Cinders, red Brick, saturated, moderately-plastic.	
5										Refusal at 5.0' bgs.	
	250										
10											
	245										
15											

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 4 - 5' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

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Date Start/Finish: 10/15/08	**Northing:** 2136632.1446	**Well ID:**	**B-20A**
Drilling Company: Parratt Wolff	**Easting:** 232922.2220	**Client:**	National Grid
Driller's Name: Doug Richmond	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow-Stem Auger	**Surface Elevation:** 256.99		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 6.0' bgs.		
Auger Size: 3 1/4" ID	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Drilled to 5.0'	Sand (0.0' - 0.5')
	255										Bentonite Grout Slurry (0.5' - 6.0')
5		1	5-6	NA	NA	2.0	1.3			Brown Silty CLAY, trace fine Gravel, saturated, moderately-plastic.	
										Refusal at 6.0' bgs.	
	250										
10											
	245										
15											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 5 - 6' bgs. for VOC, SVOC, Total Cyanide, Free Cyanide.

Date Start/Finish: 10/14/2008	**Northing:** 2136614.8631	**Well ID:** **B-21**
Drilling Company: Parratt Wolff	**Easting:** 232875.9122	**Client:** National Grid
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:** King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Push/Percussion	**Surface Elevation:** 257.77	
Sampler Size: 2" Split Spoon	**Borehole Depth:** 5.5' bgs.	
Auger Size: NA	**Geologist:** Marcus Eriksson	
Rig Type: Tractor-mounted Direct Push		

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	1.8	2.0			ASPHALT Brown fine to medium SAND, little fine Gravel and Silt, trace Coal fragments, red Brick, and Cinders, moist, non-plastic Brown Silty CLAY, some fine Sand, and fine to medium Gravel, trace Cinders, Coal fragments, red Brick, and possible fire Brick, moist, non-plastic.	Sand (0.0' - 0.5')
	255	2	2-4	NA	NA	1.4	0.0			Brown Silty CLAY, trace fine Sand, fine Gravel, and Wood chips(2.8' - 2.9') moist, non-plastic.	Bentonite Grout Slurry (0.5' - 5.5')
5		3	4-6	NA	NA	1.5	0.0				
										Refusal at 5.5' bgs.	
	250										
10											
	245										
15											

ARCADIS
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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 4 - 5.5' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish: 10/15/2008	**Northing:** 2136614.8631	**Well ID:**	**B-21A**
Drilling Company: Parratt Wolff	**Easting:** 232875.9122	**Client:**	National Grid
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow-Stem Auger	**Surface Elevation:** 257.77		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 6.0' bgs.		
Auger Size: NA	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Drilled to 5.0' bgs.	Sand (0.0' - 0.5')
	255										Bentonite Grout Slurry (0.5' - 6.0')
5		1	5-6	NA	NA	0.3	1.3			Brown Silty CLAY, little fine Sand, Organics, saturated, non-plastic (organic odor)	
										Refusal at 6.0' bgs.	
	250										
10											
	245										
15											

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 4 - 5.5' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

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Date Start/Finish: 10/14/2008	**Northing:** 2136600.9522	**Well ID:** **B-22**	
Drilling Company: Parratt Wolff	**Easting:** 232842.6522	**Client:** National Grid	
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:** King St. Former MGP Site, Ogdensburg, New York	
Drilling Method: Push/Percussion	**Surface Elevation:** 259.21		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 4.4' bgs.		
Auger Size: NA			
Rig Type: Tractor-mounted Direct Push	**Geologist:** Marcus Eriksson		

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
0	259.21									ASPHALT	Sand (0.0' - 0.5')
		1	0-2	NA	NA	1.0	0.0			Brown fine to medium SAND and fine GRAVEL, trace Silt, moist, non-plastic	
										Brown fine Silty SAND, some Silty Clay, and fine Gravel, trace Cinders, and Coal fragments, moist, non-plastic	
	255	2	2-4	NA	NA	1.4	0.0			Brown Silty CLAY, little fine Gravel, trace Cinders, saturated, non-plastic.	Bentonite Grout Slurry (0.5' - 4.4')
		3	4-6	NA	NA	0.4	0.0				
5										Refusal at 4.4' bgs.	
	250										
10											
	245										
15											

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 3 - 4.4' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 10/13/2008	**Northing:** 2136544.1794	**Well ID:**	**B-23**
Drilling Company: Arcadis	**Easting:** 232872.8654	**Client:**	National Grid
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Push/Percussion	**Surface Elevation:** 259.06		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 5.5		
Auger Size: NA			
Rig Type: Tractor-mounted Direct Push	**Geologist:** Marcus Eriksson		

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Brown fine to medium SAND, little Silty Clay, fine Gravel, and trace Organics, moist, non-plastic	Sand (0.0' - 0.5')
		1	0-2	NA	NA	1.2	0.8			Dark Brown fine to medium SAND, little Silty Clay, trace Organics, fine Gravel, and Coal fragments, moist, non-plastic	
	255	2	2-4	NA	NA	0.4	0.0				Bentonite Grout Slurry (0.5' - 5.5')
										Brown fine SAND, some fine Gravel (sub-rounded), trace Organics, red Brick, and Cinder-like material, moist, non-plastic	
5		3	4-6	NA	NA	1.5	0.0				
										Refusal at 5.5' bgs.	
	250										
10											
	245										
15											

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available.

Date Start/Finish:	10/13/2008
Drilling Company:	Parratt Wolff
Driller's Name:	Doug Richmond, Rod Trask
Drilling Method:	Push/Percussion
Sampler Size:	2" Split Spoon
Auger Size:	NA
Rig Type:	Tractor-mounted Direct Push
Northing:	2136496.8812
Easting:	232884.3028
Casing Elevation:	NA
Surface Elevation:	259.06
Borehole Depth:	6.2' bgs.
Geologist:	Marcus Eriksson
Well ID:	**B-24**
Client:	National Grid
Location:	King St. Former MGP Site Ogdensburg, New York

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	1.1	0.0			Brown fine to medium SAND, little fine Gravel, trace Silt, and Organics, moist, non-plastic.	Sand (0.0' - 0.5')
										Dark Brown fine to medium SAND, little Silty Clay, fire Brick, fine Gravel, trace red Brick, and Coal fragments, moist, non-plastic.	
	255	2	2-4	NA	NA	0.9	0.0			Brown fine Silty SAND, little fine Gravel, Wood in shoe, trace Organics, saturated, non-plastic.	Bentonite Grout Slurry (0.5'6.2')
5		3	4-6	NA	NA	0.5	0.0				
	250									Refusal at 6.2' bgs.	
10											
	245										
15											

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 4 - 6' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

ARCADIS
Infrastructure, environment, facilities

Date Start/Finish: 10/13/2008	**Northing:** 2136466.2788	**Well ID:** **B-25**	
Drilling Company: Parratt Wolff	**Easting:** 232897.9852	**Client:** National Grid	
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:** King St. Former MGP Site Ogdensburg, New York	
Drilling Method: Push/Percussion	**Surface Elevation:** 259.20		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 6.0' bgs.		
Auger Size: NA	**Geologist:** Marcus Eriksson		
Rig Type: Tractor-mounted Direct Push			

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	1.2	0.8			Brown fine to medium SAND, little Silt, fine Gravel, trace Organics, moist, non-plastic. Dark Brown fine to medium SAND, little Silt, fine Gravel, trace Organics, red Brick, fire Brick, Coal frags, and possible Slag, moist, non-plastic.	Sand (0.0' - 0.5')
	255	2	2-4	NA	NA	0.4	0.3			Brown fine to medium Silty SAND, little fine Gravel, trace Organics, light and dark banding 1-2mm. thick throughout sample, saturated, non-plastic	Bentonite Grout Slurry (0.5' - 6.0')
5		3	4-6	NA	NA	1.5	0.4			Brown fine Silty SAND, little fine Gravel, saturated, non-plastic	
										Refusal at 6.0' bgs.	
	250										
10											
	245										
15											

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 4 - 6' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish: 10/13/2008 **Drilling Company:** Parratt Wolff **Driller's Name:** Doug Richmond, Rod Trask **Drilling Method:** Push/Percussion **Sampler Size:** 2" Split Spoon **Auger Size:** NA **Rig Type:** Tractor-mounted Direct Push	**Northing:** 2136437.6841 **Easting:** 232911.9785 **Casing Elevation:** NA **Surface Elevation:** 259.75 **Borehole Depth:** 3.8' bgs. **Geologist:** Marcus Eriksson	**Well ID:** **B-26** **Client:** National Grid **Location:** King St. Former MGP Site Ogdensburg, New York	**DRAFT**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	0.5	0.1			Brown fine SAND, little fine Gravel, Organics, trace Silt, moist, non-plastic Brown fine to medium SAND, little fine Gravel, trace Coal fragments, red Brick, fire Brick, Silt, and Organics, moist, non-plastic.	Sand (0.0' - 0.5')
	255	2	2-4	NA	NA	0.4	1.7			Brown fine Silty SAND, some fine to medium Gravel, saturated, non-plastic	Bentonite Grout Slurry (0.5' - 3.8')
										Refusal at 3.8' bgs.	
5											
	250										
10											
	245										
15											

ARCADIS
Infrastructure, environment, facilities

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 2 - 3.5' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish: 10/13/2008	**Northing:** 2136405.8678	**Well ID:** B-27
Drilling Company: Parratt Wolff	**Easting:** 232925.6576	**Client:** National Grid
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:** King St. Former MGP Site Ogdensburg, New York
Drilling Method: Push/Percussion	**Surface Elevation:** 260.14	
Sampler Size: 2" Split Spoon	**Borehole Depth:** 3.8' bgs.	
Auger Size: NA	**Geologist:** Marcus Eriksson	
Rig Type: Tractor-mounted Direct Push		

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Brown fine to medium SAND, little Silt, fine Gravel, trace Organics, moist, non-plastic.	Sand (0.0' - 0.5')
		1	0-2	NA	NA	0.4	0.0			Brown fine SAND, some fine Gravel, Silt, trace red Brick, fire Brick, Coal fragments, and Organics, moist, non-plastic	
	255	2	2-4	NA	NA	0.4	0.1				Bentonite Grout Slurry (0.5' - 3.7')
										Refusal at 3.7' bgs.	
5											
	250										
10											
	245										
15											

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 1.5 - 3.7' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

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Date Start/Finish:	10/13/2008	**Northing:**	2136499.1966	**Well ID:**	**B-28**
Drilling Company:	Parratt Wolff	**Easting:**	232914.6344	**Client:**	National Grid
Driller's Name:	Doug Richmond, Rod Trask	**Casing Elevation:**	NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Push/Percussion	**Surface Elevation:**	258.88		
Sampler Size:	2" Split Spoon	**Borehole Depth:**	3.0' bgs.		
Auger Size:	NA				
Rig Type:	Tractor-mounted Direct Push	**Geologist:**	Marcus Eriksson		

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Brown fine SAND, little fine Gravel, Organics, trace Silt, moist, non-plastic	Sand (0.0' - 0.5')
		1	0-2	NA	NA	2.0	0.0			Brown fine to medium SAND, little fine Gravel, trace Coal fragments, red Brick, fire Brick, Silt, and Organics, moist, non-plastic.	Bentonite Grout Slurry (0.5' - 3.0')
	255	2	2-4	NA	NA	0.5	1.4			Brown fine Silty SAND, some fine to medium Gravel, saturated, non-plastic	
										Refusal at 3.0' bgs.	
5											
	250										
10											
	245										
15											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 2 - 3.5' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish: 10/13/2008	**Northing:** 2136525.8003	**Well ID:**	**B-29**
Drilling Company: Parratt Wolff	**Easting:** 232902.0907	**Client:**	National Grid
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Push/Percussion	**Surface Elevation:** 258.93		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 2.7' bgs.		
Auger Size: NA	**Geologist:** Marcus Eriksson		
Rig Type: Tractor-mounted Direct Push			

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Brown fine SAND, little fine Gravel, and Organics, trace Silt, moist, non-plastic.	Sand (0.0' - 0.5')
		1	0-2	NA	NA	1.7	0.0			Brown fine SAND, little Silty Sand, and fine Gravel, trace red Brick, fire Brick, and Cinders, moist, non-plastic.	Bentonite Grout Slurry (0.5' - 2.7')
	255	2	2-4	NA	NA	0.4	13.9			Black fine to medium SAND, little Slag, little MGP-like odor, moist, non-plastic.	
										Refusal at 2.7' bgs.	
5											
	250										
10											
	245										
15											

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Augured through weathered rock to sample at 4 - 5' bgs.
Sample at 4 -5'' bgs. for VOC, SVOC, Total Cyanide, and Free Cyanide

Date Start/Finish: 10/14/08
Drilling Company: Parratt Wolff
Driller's Name: Doug Richmond, Rod Trask
Drilling Method: Push/Percussion

Sampler Size: 2" Split Spoon
Auger Size: NA
Rig Type: Tractor-mounted Direct Push

Northing: 2136622.2802
Easting: 233050.3637

Casing Elevation: NA
Surface Elevation: 258.67
Borehole Depth: 3.5' bgs.

Geologist: Marcus Eriksson

Well ID: **B-30**

Client: National Grid

Location: King St. Former MGP Site
Ogdensburg, New York

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
0		1	0-2	NA	NA	1.7	0.0			Brown fine to medium SAND, some Silty Sand, little Organics, moist, non-plastic.	Sand (0.0' - 0.5')
										Brown fine to medium SAND, some Silt, little Coal fragments, red Brick, and Cinders, moist, non-plastic.	
	255	2	2-4	NA	NA	0.4	0.0			Brown Silty CLAY, some fine Sand, trace red Brick, and Cinders, moist, non-plastic.	Bentonite Grout Slurry (0.5' - 3.5')
										Refusal at 3.5' bgs.	

Depth scale: 0, 5, 10, 15. Elevation scale: 260, 255, 250, 245.

Remarks: bgs = below ground surface; NA = Not Applicable/Available.

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Date Start/Finish: 10/14/08	**Northing:** 2136628.5085	**Well ID:** **B-31**	
Drilling Company: Parratt Wolff	**Easting:** 233048.2450	**Client:** National Grid	
Driller's Name: Doug Richmond, Rod Trask	**Casing Elevation:** NA	**Location:** King St. Former MGP Site Ogdensburg, New York	
Drilling Method: Push/Percussion	**Surface Elevation:** 258.45		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 4.7' bgs.		
Auger Size: NA			
Rig Type: Tractor-mounted Direct Push	**Geologist:** Marcus Eriksson		

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0		1	0-2	NA	NA	2.0	0.0			Brown fine to medium SAND, little Silt, and fine Gravel, trace Organics, moist, non-plastic.	Sand (0.0' - 0.5')
										Brown fine Silty SAND, little fine Gravel, trace red Brick, Cinders, and Coal fragments, moist, non-plastic.	
	255	2	2-4	NA	NA	1.3	0.0			Brown Silty SAND, little Silty Clay, trace red Brick, and Cinders, saturated, non-plastic.	Bentonite Grout Slurry (0.5' - 4.7')
										Dark Brown SILT and SAND	
		3	4-6	NA	NA	0.7	0.3				
5										Refusal at 4.7' bgs.	
	250										
10											
	245										
15											

ARCADIS
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Remarks: bgs = below ground surface; NA = Not Applicable/Available.

Date Start/Finish: 10/14/08	**Northing:** 2136552.6617	**Well ID:**	**B-32**
Drilling Company: Parratt Wolff	**Easting:** 232889.7723	**Client:**	National Grid
Driller's Name: Doug Richmond	**Casing Elevation:** NA	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow-Stem Auger	**Surface Elevation:** 258.59		
Sampler Size: 2" Split Spoon	**Borehole Depth:** 5.0' bgs.		
Auger Size: 3 1/4" ID	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

DRAFT

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	260										
0										Drilled to 4.5'	Sand (0.0' - 0.5')
	255										Bentonite Grout Slurry (0.5' - 5.0')
		3	4-6	NA	NA	0.7	17.3			Weathered Rock (Dolostone-like), trace Blebs, Sheen.	
5										Refusal at 5.0' bgs.	
	250										
10											
	245										
15											

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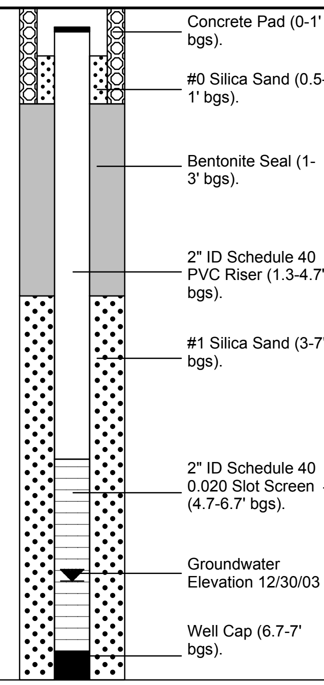
Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Sample at 4.5 - 5' bgs. for VOC, SVOC, Total Cyanide, Free Cyanide.

Date Start/Finish: 12/11/2003 **Drilling Company:** Parratt-Wolff **Driller's Name:** Jim Lansing **Drilling Method:** Hollow Stem Auger **Auger Size:** 4-1/4" **Rig Type:** Ingersoll Rand 8300 **Sampling Method:** 2" Split Spoon	**Northing:** 2136457.9047 **Easting:** 232951.0547 **Casing Elevation:** 263.51 ft. AMSL **Borehole Depth:** 7' below grade **Surface Elevation:** 263.81 ft. AMSL **Geologist:** Matthew Kohberger	**Well/Boring ID:** MW-1 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	265										
0		1	0-2	1.0	7 9 6 5	15	ND			Gray CLAY, little fine to medium Sand, little fine to coarse Gravel, trace Brick fragments, low plasticity, stiff, dry. Slight black staining and coal tar odor below approximately 0.9' bgs. [FILL]	
		2	2-4	0.6	6 8 5 5	13	ND	X		Dark gray CLAY, little fine to medium Sand, trace coarse Gravel, low plasticity, stiff, moist, slight black staining and coal tar odor.	
	260										
5		3	4-6	0.3	2 3 5 13	8	ND			Dark gray CLAY, little fine to medium Sand, low plasticity, medium stiff, moist.	
		4	6-7	0.7	4 5	NA	1.3			Dark gray CLAY, some fine to medium Sand, low plasticity, medium stiff, wet. Slight black staining and coal tar odor from 6.0' - 6.2' bgs. Heavy black staining, strong coal tar odor, and NAPL from 6.2' - 7.0' bgs.	
										Auger refusal at 7.0' bgs.	
	255										
10											



BBL
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engineers & scientists

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample MW-1g-2-4 collected at 2.0' - 4.0' bgs for BTEX, PAHs, Total Cyanide, and TOC.

Borings attempted: MW-1, refusal at 2.4' bgs; MW-1b, refusal at 2.5' bgs; MW-1c, refusal 2' bgs; MW-1d, refusal at 3.4' bgs; MW-1e, refusal at 2.5' bgs; MW-1f, refusal at 2' bgs.

Date Start/Finish: 12/11/2003 **Drilling Company:** Parratt-Wolff **Driller's Name:** Jim Lansing **Drilling Method:** Hollow Stem Auger **Auger Size:** 4-1/4" **Rig Type:** Ingersoll Rand 8300 **Sampling Method:** 2" Split Spoon	**Northing:** 2136593.9166 **Easting:** 232976.6488 **Casing Elevation:** 259.24 ft. AMSL **Borehole Depth:** 6.3' below grade **Surface Elevation:** 259.56 ft. AMSL **Geologist:** Matthew Kohberger	**Well/Boring ID:** MW-2 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
	260										
0		1	0-2	0.2	11 6 5 5	11	ND			Brown SILT, little fine to medium Sand, moist.	Concrete Pad (0-1' bgs). #0 Silica Sand (0.5-1' bgs). Bentonite Seal (1-1.5' bgs). #0 Silica Sand (1.5-2' bgs).
		2	2-4	0.4	3 2 2 3	4	NA			Dark gray CLAY, little fine to medium Sand, moderate plasticity, soft, moist.	2" ID Schedule 40 PVC Riser (0.3-3' bgs). Groundwater Elevation 12/30/03
5	255	3	4-6	0.8	4 6 4 50/0.1	NA	NA	X		Dark gray to black CLAY, little fine to medium Sand, low plasticity, stiff, wet, black staining, strong coal tar odor.	#1 Silica Sand (2-6.3' bgs). 2" ID Schedule 40 0.020 Slot Screen (3-6' bgs). Well Cap (6-6.3' bgs).
		NA	NA	NA	NA	NA	NA			Split spoon refusal at 5.7' bgs.	
										Auger refusal at 6.3' bgs.	
10	250										

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engineers & scientists

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample MW-2-4-6 collected at 4.0' - 6.0' bgs for BTEX, PAHs, Total Cyanide, and TOC.

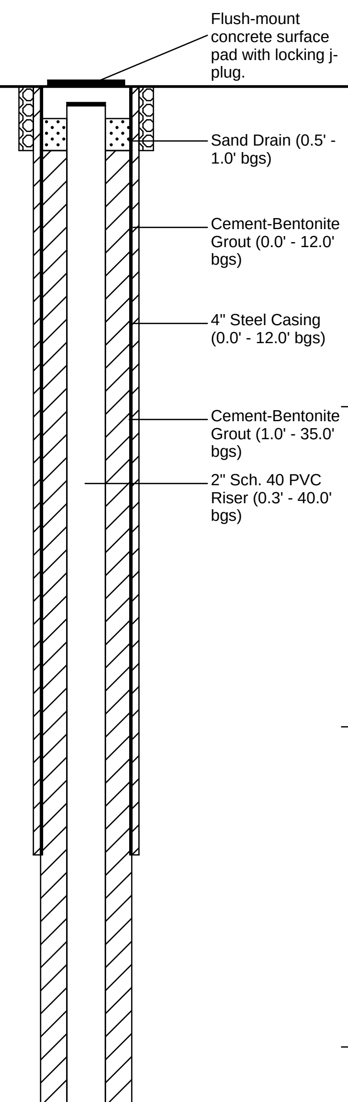
Project: 36671.002
Data File:MW-2.dat

Template:J:\rockware\LogPlot2001\Logfiles\36671\boring_well03.ldf
Date: 12/17/2003

Date Start/Finish: 10/8/07 - 10/10/07	**Northing:** 2136578.7338	**Well ID:**	**MW-2R**
Drilling Company: Parratt Wolff	**Easting:** 232983.0601	**Client:**	National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** 259.07	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 259.65		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 52.0' bgs		
Auger Size: 4-1/4"			
Rig Type: CME 55 Truck-Mount	**Geologist:** Jennifer Sandorf		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	3 50/ 0.4	50/ 0.4	0.9	0.0			Brown fine to medium SAND, little Silt, trace Grass and Roots, moderately loose, dry.
		2	2-4	3 1 1 1	2	0.9	0.0			Brown to dark brown fine to medium SAND, trace medium to coarse subangular Gravel, trace Ash and Slag, moderately loose, dry. No Slag or Ash.
5	255	3	4-6	2 3 10 5	13	1.0	NA			Brown to gray fine to coarse SAND, little fine to medium Gravel, trace Silt, moderately loose, moist to wet, faint MGP-type odor.
		4	6-8	7 10 7 13	17	1.3	NA			Brown to black stained fine to medium SAND, some medium to coarse Gravel, trace Clay, moderately loose, wet, trace iridescent sheen, moderate MGP-type odor.
		5	8-9.4	17 14 50/ 0.4	64/ 0.9	0.8	NA		HZ	Moderate coal tar-like material (black, sticky, viscous), trace Wood fragments, medium dense.
10	250	6	9-12	NA	93	3.0	NA		HZ unopened HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white fine to medium grained Calcite, horizontal bedding, slightly weathered, very hard.
		7	12-14	NA	100	2.0	0.0		HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly weathered, very hard.
15	245	8	14-19	NA	86	5.0	0.0		HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly weathered, very hard. Trace white Calcite-filled void. Color change to light gray at 17.9' bgs.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.
NA = PID not working due to high humidity.
LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

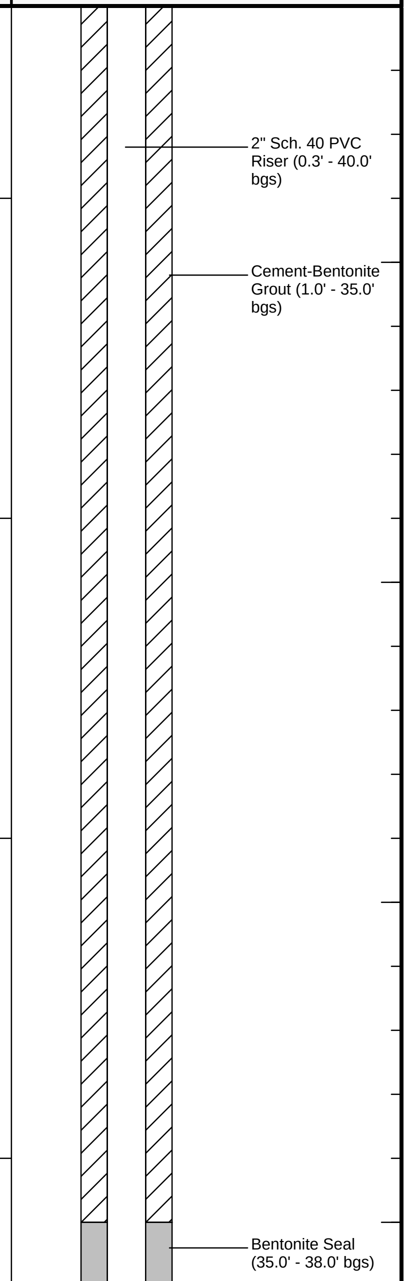
Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-2R**

Borehole Depth: 52.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
		8	14-19	NA	86	5.0	0.0		HZ HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly weathered, very hard. Trace white Calcite-filled void. Color change to light gray at 17.9' bgs.
20	240	9	19-24	NA	82	4.9	0.0		HZ HZ/F HZ HZ HZ unopened HZ HZ HZ HZ/F LA/F	Light gray DOLOMITE, as above, trace white Calcite-filled fractures, horizontal bedding, slightly weathered, very hard.
25	235	10	24-29	NA	96	5.1	0.0		HZ HZ LA HZ HZ HZ/MW	Rock type as above, trace white Calcite infilling of fractures, very hard.
30	230	11	29-34	NA	100	5.0	NA		HZ HZ HZ HZ HZ	Rock type as above, fractures slightly weathered.
35	225	12	34-39	NA	78	5.0	NA		HZ HZ HZ	Rock type as above, fractures slightly weathered.

Well Construction



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Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.
NA = PID not working due to high humidity.
LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-2R**

Borehole Depth: 52.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
		12	34-39	NA	78	5.0	NA		HZ HZ HA HZ HZ HZ HZ	Light gray DOLOMITE, trace white Calcite infilling of fractures, horizontal bedding, slightly weathered, very hard.	Bentonite Seal (35.0' - 38.0' bgs); 2" Sch. 40 PVC Riser (0.3' - 40.0' bgs)
40	220	13	39-44	NA	96	5.0	0.0		HZ HZ HZ MZ HZ MZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white Calcite, horizontal bedding, slightly weathered on fracture surfaces, very hard.	#1 Silica Sand Pack (38.0' - 50.0' bgs)
45	215	14	44-49	NA	80	4.9	0.0		HZ unopened HA HA HZ HZ	Rock type as above, trace white and pink Calcite, slightly weathered, very hard.	2" Sch. 40 0.020" Slot PVC Screen (40.0' - 50.0' bgs)
50	210	15	49-50	NA	80	1.1	0.0		HZ HZ	Rock type as above, no Calcite inclusions observed.	
		16	50-52	NA	70	2.0	0.0		HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, trace dark gray/black banding (possible Shale?), slightly weathered, very hard.	2" Sch. 40 PVC Sump (50.0' - 52.0' bgs); Cement-Bentonite Grout (50.0' - 52.0' bgs)
55	205										

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Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 12/11/2003
Drilling Company: Parratt-Wolff
Driller's Name: Jim Lansing
Drilling Method: Hollow Stem Auger
Auger Size: 4-1/4"
Rig Type: Ingersoll Rand 8300
Sampling Method: 2" Split Spoon

Northing: 2136557.1934
Easting: 233064.9740
Casing Elevation: 261.05 ft. AMSL

Borehole Depth: 4.7' below grade
Surface Elevation: 261.32 ft. AMSL

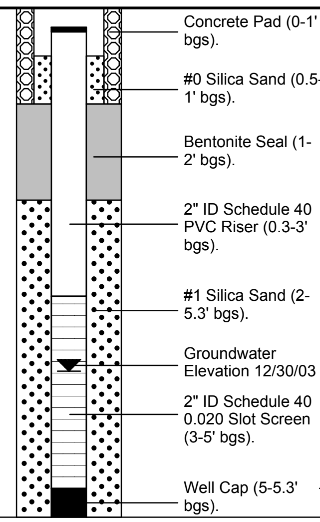
Geologist: Matthew Kohberger

Well/Boring ID: MW-3

Client: Niagara Mohawk
A National Grid Company

Location: King Street Former MGP Site
Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Recovery (feet)	Blows / 6 Inches	N - Value	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
0	260	1	0-2	0.8	9, 8, 6, 4	14	ND			Dark gray Clayey SILT, trace fine to medium Sand, low plasticity, stiff, moist. [FILL]	
		2	2-4	0.4	1, 1, 1, 1	2	ND			White ASH, some fine Sand, very loose, moist. [FILL]	
		3	4-4.7	0.2	6, 50/0.1	NA	ND			Dark gray CLAY, trace fine Sand, moderate plasticity, medium stiff, slight black staining, slight coal tar odor.	
5		NA	NA	NA	NA	NA	NA			Split spoon refusal at 4.7' bgs.	
	255									Auger refusal at 5.3' bgs.	
10											



BBL
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engineers & scientists

Remarks: bgs = below ground surface; NA = Not Applicable/Available.
No samples collected due to poor recovery.

Project: 36671.002
Data File:MW-3.dat
Template:J:\rockware\LogPlot2001\Logfiles\36671\boring_well03.ldf
Date: 12/17/2003

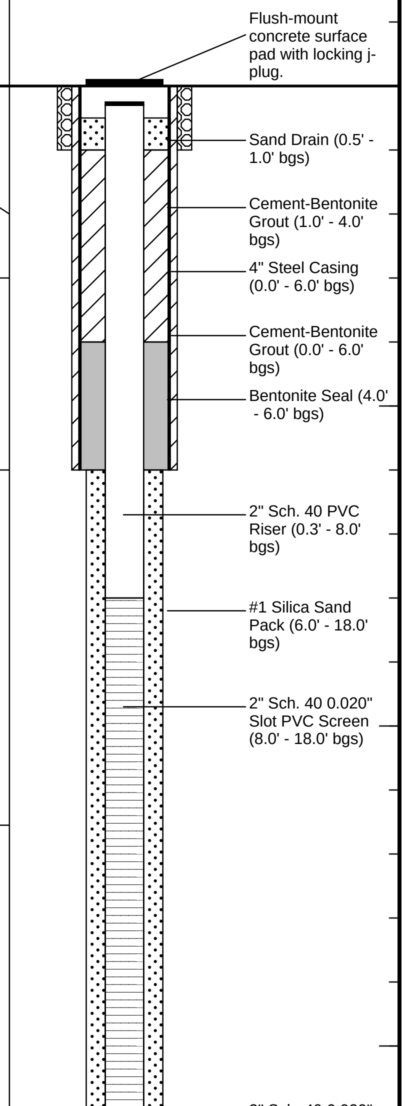
Date Start/Finish:	5/11/2006 - 5/25/2006
Drilling Company:	Parratt Wolff
Driller's Name:	Rick Nvatka
Drilling Method:	Hollow Stem Auger/ Convential Coring
Sampler Size:	2" x 2'/5' NX Corebarrel
Auger Size:	6-1/4"
Rig Type:	CME 75 Truck-Mount

Northing:	2136344.854
Easting:	233059.0428
Casing Elevation:	263.15' AMSL
Surface Elevation:	263.51' AMSL
Borehole Depth:	20.0' bgs
Geologist:	Kristina Gross

Well ID:	**MW-4R**
Client:	National Grid
Location:	King St. Former MGP Site Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	265									
0		1	0-2	6 6 10 7	16	0.3	0.0			Medium brown fine SAND, little Silt and Roots, loose, dry. [FILL]
		2	2-3	7 3 50/0.0	NA	0.5	25.7			Medium brown fine SAND, little subanguler to subrounded fine Gravel, trace Silt and red crushed Brick, weak MGP-type odor, trace black staining, medium dense, moist. [FILL]
	260									Air hammer to 6.0' bgs without sampling.
5										
	255	3	6-10	NA	57	3.75	0.0		HZ/SW HZ/SW LA/SW HZ/SW HZ/SW HZ/SW HZ/SW	Medium gray fine to medium grained Ogdensburg DOLOMITE, some Shale laminations to bands, some fine grained white Calcite throughout, trace 1/4" diameter white Calcite inclusions, horizontal bedding, moderate response to HCL, fresh to slightly weathered, hard. Trace black staining (2 spots 0.1" to 0.2" diameter) in horizontal break at 9.25' bgs. Trace black staining (2 spots 0.1" to 0.2" diameter) in horizontal break at 9.75' bgs.
10	250	4	10-15	NA	95	5.1	0.0		HZ/SW HZ/F HZ/F HZ/SW HZ/SW	Light gray Ogdensburg DOLOMITE, well graded, medium to coarse from 11.55' - 13.0' bgs, grades to fine from 13.0' - 13.9' bgs, coarse 13.0' - 14.15' bgs grading to fine from 14.15' - 14.4' bgs, coarse 14.4' - 14.8' bgs grading to fine from 14.8' - 15.0' bgs, massive (trace Shale laminations), trace fine grained white Calcite, trace 1/4" to 1/2 diameter white Calcite inclusions in coarse grained layers, horizontal bedding, weak response to HCL, fresh to slightly weathered, hard.
15		5	10-15	NA	95	5.1	0.0		HZ/F HZ/SW	

Well Construction



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Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-4R**

Borehole Depth: 20.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	245	6	15-20	NA	83	5.15	0.0		LA/SW LA/SW HZ/SW HZ/SW HZ/F HA/F	Light gray fine grained Ogdensburg DOLOMITE, massive (trace Shale laminations), trace fine grained white Calcite, weak response to HCL, fresh to slightly weathered, hard. Coarse grained 17.05' - 17.2' bgs with plentiful coarse grained white Calcite and trace 1/4" to 1/2" white Calcite inclusions. Trace black staining (2 spots 0.1" diameter) in horizontal break at 17.92' bgs. Shale laminations increase below 19.0' bgs.	Slot PVC Screen (8.0' - 18.0' bgs) #1 Silica Sand Pack (6.0' - 18.0' bgs) 2" Sch. 40 PVC Sump (18.0' - 20.0' bgs) Cement-Bentonite Grout (18.0' - 20.0' bgs)
20										End of boring at 20.0' bgs.	
	240										
25											
	235										
30											
	230										
35											

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Water Level Data

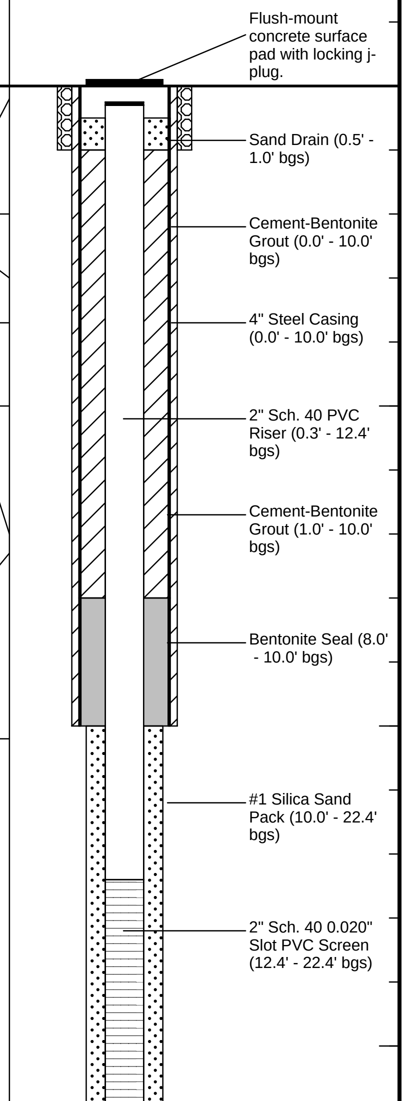
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 5/9/2006 - 5/23/2006	**Northing:** 2136560.653	**Well ID:**	**MW-5R**
Drilling Company: Parratt Wolff	**Easting:** 232953.3572	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** 259.19' AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 259.5' AMSL		
Sampler Size: 2" x 2'/ 5' HX Corebarrel	**Borehole Depth:** 24.4' bgs		
Auger Size: 6-1/4"			
Rig Type: CME 75 Truck-Mount	**Geologist:** Kristina Gross		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	21 11 13 50/0.3	24	1.1	186			Brown SILT, little Roots and Grass, loose, dry. Light brown fine SAND, trace medium subrounded Gravel, loose, dry.
										Refusal at 1.8' bgs. Auger to 3.0' bgs without sampling.
	255	2	3-5	4 3 9 8	12	1.8	351			Light brown fine SAND, some red crushed Brick, trace medium subrounded Gravel, loose, dry. [FILL] Black-stained fine to medium SAND, little fine subrounded Gravel in sticky (tar-like) black NAPL, strong MGP-type odor, medium dense, moist.
5		3	5-7	9 7 6 11	13	1.1	601			Black-stained fine to medium SAND, little fine subrounded Gravel, strong MGP-type odor, pockets/globules (approx. 1/2" - 3/4" diameter) of sticky (tar-like) black NAPL surrounded with NAPL stringers, medium dense, moist.
		4	7-7.2	50/0.2	NA	0.2	352			Black-stained fine to medium SAND, little fine angular Gravel, strong MGP-type odor, trace brownish-black oily NAPL blebs (approx. 1/4" diameter), medium dense, wet.
	250									Air hammer to 10.2' bgs without sampling.
10		5	10-14.9	NA	74	4.4	0.0		HZ HZ HZ LA HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, little Shale laminations to bands, trace white fine to medium grained Calcite, horizontal bedding, weak response to HCL, slightly weathered, hard. Little rainbow sheen on gravel at top of Run 5. Weathered solution filled horizontal hairline fracture at 11.7' bgs. Bedrock fractures HZ at approximately 12.8' and 12.82' bgs.
15	245	6	14.9-19.9	NA	65	5.3	0.0		HZ/SW LA/SW	

Well Construction



ARCADIS BBL
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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered. Fractures from 10.2' - 15.0' bgs fresh to slightly

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

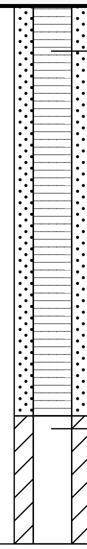
Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-5R**

Borehole Depth: 24.4' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
		6	14.9-19.9	NA	65	5.3	0.0		HZ/F HZ/F HZ/F HZ/F HZ/MW HZ/F HZ/SW	Medium gray fine to medium grained Ogdensburg DOLOMITE, little Shale laminations to bands, trace white fine to medium grained Calcite, horizontal bedding, weak response to HCL, slightly weathered, hard. Bedrock fractures LA/F at approximately 17.18' bgs and HZ/F at approximately 17.3' bgs. White Calcite inclusion, 1/2" diameter, at 18.72' bgs.
20	240	7	19.9-24.4	NA	85	4.6	0.0		HZ/SW HZ/MW HZ/F HZ/F HZ/SW HZ/VW	Light gray medium to coarse grained Ogdensburg DOLOMITE, massive (no laminations), trace white medium grained Calcite, horizontal bedding, fresh to slightly weathered, hard. Little to some coarse white and pink Calcite inclusions (1/2" to 2" diameter) from 19.9' - 24.4' bgs. Bedrock fractures HZ/SW at approximately 20.8' and 20.9' bgs. Trace Shale laminations (21.45', 22.38', 22.55', and 23.3' bgs). Fine Gravel/weathered ROCK and Silt in horizontal break at 23.65' bgs.
25	235									End of boring at 24.4' bgs.
30	230									
35	225									

Well Construction



ARCADIS BBL
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Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered. Fractures from 10.2' - 15.0' bgs fresh to slightly

Water Level Data

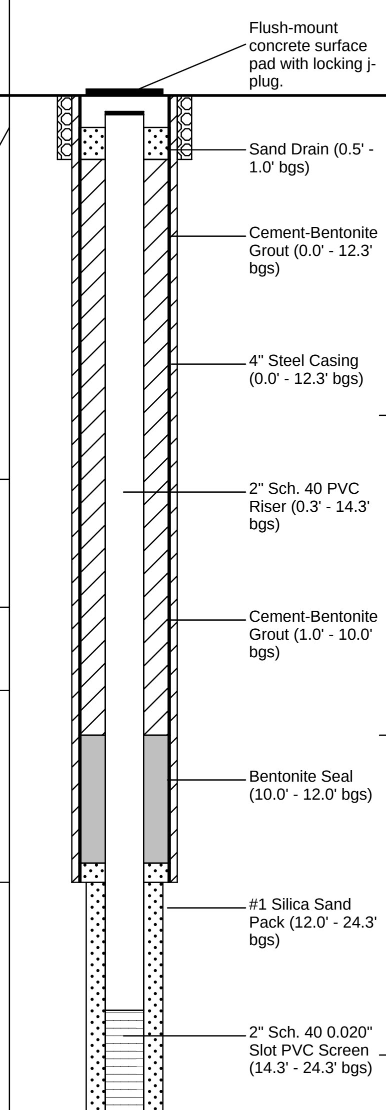
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 5/10/2006 - 5/22/2006	**Northing:** 2136602.403	**Well ID:**	**MW-6R**
Drilling Company: Parratt Wolff	**Easting:** 233042.0218	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** 258.83' AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Convential Coring	**Surface Elevation:** 259.14' AMSL		
Sampler Size: 2" x 2'/ 5' HX Corebarrel	**Borehole Depth:** 26.3' bgs		
Auger Size: 6-1/4"			
Rig Type: CME 75 Truck-Mount	**Geologist:** Kristina Gross		

Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Bedrock Fractures	Stratigraphic Description
1	0-2	9 9 5 2	14	1.0	50.2		Light gray fine SAND, little medium to coarse Sand and fine angular to subrounded Gravel, loose, dry. [FILL] Dark grayish-black fine SAND, little Silt, trace fine subrounded Gravel and Coal fragments, medium dense, moist. [FILL]
2	2-4	5 2 2 3	4	0.7	149		Trace red crushed Brick, moderate MGP-type odor, trace to little sticky black NAPL throughout from 2.3' - 2.7' bgs.
3	4-6	8 5 3 8	8	0.7	119		Moderate MGP-type odor, moist to wet, from 4.0' - 4.7' bgs. Trace sticky black NAPL from 4.6' - 4.7' bgs.
4	6-8	12 17 12 28	19	1.1	879		Dark gray fine SAND, some fine angular to subrounded Gravel, little Silt, medium dense, moist to wet. Sample coated in very sticky NAPL, strong MGP-type odor, trace rainbow sheen from 6.6' - 7.1' bgs.
5	8-9.3	5 5 50/0.3	NA	0.3	380		Black very sticky (taffy-like) NAPL with fine SAND and little fine to medium Gravel, medium plasticity.
							Air hammer without sampling to 12.3' bgs.
6	12.3-14.8	NA	46	2.35	0.0	HZ HZ HZ HZ	Medium gray medium grained Ogdensburg DOLOMITE, some Shale laminations and medium grained pink and white Clacite, horizontal bedding, strong response to HCL, slightly weathered, hard. Trace black NAPL (3 spots approx. 1/4" diameter) at 13.08' bgs. Trace rainbow sheen at 13.2' bgs.
7	14.8-19.8	NA	100	5	0.0	HZ HZ	

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Bedrock breaks fresh to slightly weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: MW-6R

Borehole Depth: 26.3' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	240	7	14.8-19.8	NA	100	5	0.0		HZ, HZ, LA, HZ	Light gray coarse grained Ogdesnburg DOLOMITE, trace Shale laminations, horizontal bedding, weak response to HCL, fresh to slightly weathered, hard. White Calcite inclusion from 19.0' - 19.3' bgs.	2" Sch. 40 0.020" Slot PVC Screen (14.3' - 24.3' bgs); #1 Silica Sand Pack (12.0' - 24.3' bgs)
20	235	8	19.8-24.8	NA	65	5.3	0.0		LA, VF, VF, HZ, HZ, HZ, LA, HZ, HZ	Vertical fracture (90 degrees) from 20.2' - 20.9' bgs. Bedrock fractures HZ at approximately 20.75' and 20.9' bgs and VF at approximately 20.8' bgs. Grades to light gray fine to medium grained Ogdesnburg DOLOMITE, little Shale laminations, trace fine to medium white Calcite, horizontal to 5 degree bedding, weak response to HCL, slightly weathered, hard. Strong MGP-type odor and black staining (approx. 3/4" diameter) at 23.15' bgs.	
25		9	24.8-26.3	NA	100	2.5	0.0		LA, HZ, HZ	White Calcite inclusion (2" diameter) at 25.0' bgs.	2" Sch. 40 PVC Sump (24.3' - 26.3' bgs); Cement-Bentonite Grout (24.3' - 26.3' bgs)
30	230									End of boring at 26.3' bgs.	
35	225										

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
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Bedrock breaks fresh to slightly weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

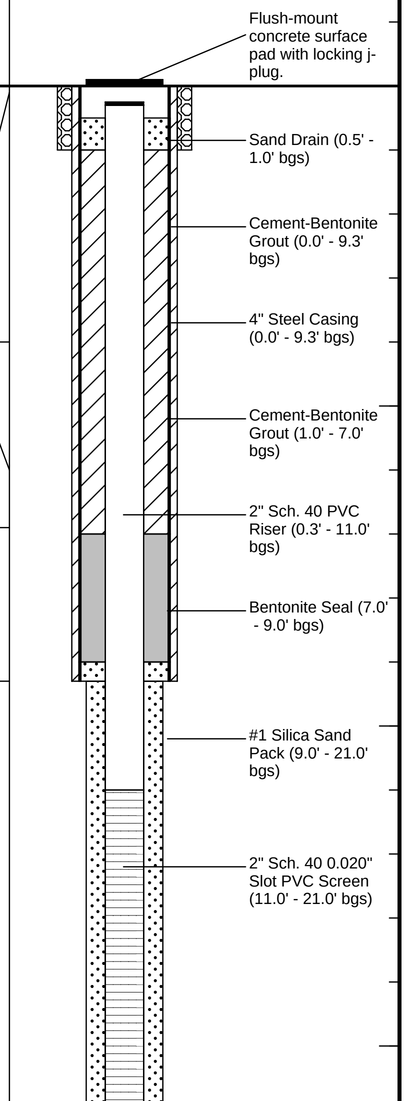
Project: 36671.001 Template: J:\LogPlot\36671\Well2006BR.ldf

Data File:J:\LogPlot\36671\MW-6R.dat Date: 6/5/2006

Date Start/Finish:	5/11/2006 - 5/25/2006	**Northing:**	2136486.498	**Well ID:**	**MW-7R**
Drilling Company:	Parratt Wolff	**Easting:**	232888.7742	**Client:**	National Grid
Driller's Name:	Rick Nvatka	**Casing Elevation:**	258.76' AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Hollow Stem Auger/ Conventional Coring	**Surface Elevation:**	259' AMSL		
Sampler Size:	2" x 2'/ 5' HX Corebarrel	**Borehole Depth:**	23.0' bgs		
Auger Size:	6-1/4"	**Geologist:**	Kristina Gross		
Rig Type:	CME 75 Truck-Mount				

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	1 / 1/1' / 1	NA	0.9	1.7			Medium brown SILT and fine SAND, some Leaves and Roots, loose, moist. [FILL] Dark brownish-black fine SAND, little medium Sand and Coal fragments, trace Silt, loose, moist. [FILL]
		2	2-4	1 / 1 / 1 / 6	2	0.4	1.0			Wet at 2.0' bgs. Some Silt and trace medium Gravel from 2.0' - 4.0' bgs.
	255	3	4-6	6 / 7 / 6 / 23	13	0.6	150			Dark grayish-black SILT, little fine Sand and Wood, moderate MGP-type odor, medium dense, wet. [FILL]
5		4	6-6.9	6 / 50/0.4	NA	0.5	261			Black-stained fine to medium SAND, little coarse Sand, subangular fine Gravel, and red and tan crushed Brick, moderate MGP-type odor, little black sticky (tar-like) NAPL throughout, loose, wet. [FILL]
										Air hammer to 9.3' bgs without sampling.
	250									
10		5	9.3-13.9	NA	76	4.7	0.0		HZ/F-SW; HZ/SW; HZ/F; HZ/MW; HZ/F; HZ/SW; LA/SW	Medium gray fine to medium grained Ogdensburg DOLOMITE, some Shale laminations, little to some fine grained white Calcite throughout with trace 1/4" to 1/2" diameter White Calcite inclusions, horizontal bedding, moderate response to HCL, fresh to slightly weathered, hard. Little Silt and fine Gravel/weathered Rock and 1" diameter black sticky NAPL in horizontal break at 10.7' bgs. Trace black sticky NAPL (4 spots 0.1" diameter) in low angle (5 degrees) break at 12.5' bgs.
	245									High angle (65 degrees) break from 15.2' - 15.8' bgs intersected by high angle (50 degree) break from 15.4' - 15.5' bgs. Trace black NAPL (0.1" diameter) and trace black staining on high angle break from 15.2' - 15.8' bgs. Trace black staining on intersecting high angle break from 15.4' - 15.5' bgs.
15		6	13.9-18.6	NA	67	5.0	0.0		HZ/F-SW; HZ/F-SW; HZ/SW; HA/SW	Bedrock fractures HA/SW at approximately 15.45' and 15.5' bgs.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-7R**

Borehole Depth: 23.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
20	240	6	13.9-18.6	NA	67	5.0	0.0		HZ/SW, HZ/SW, HZ/F, HZ/SW, HZ/SW	Light gray medium to coarse grained Ogdensburg DOLOMITE, massive (no laminations), little to trace fine grained white and pink Calcite throughout and little 1/4" to 3" diameter white and pink Clacite inclusions, horizontal bedding, moderate to weak response to HCL, fresh to slightly weathered, hard. Bedrock fractures HZ/SW at approximately 16.15' bgs and LA/SW at approximately 16.2' bgs. Little black staining (4 spots 0.1" to 0.2" diameter) in horizontal break at 18.57' bgs.	2" Sch. 40 0.020" Slot PVC Screen (11.0' - 21.0' bgs); #1 Silica Sand Pack (9.0' - 21.0' bgs)
		7	18.6-21.6	NA	78	3.4	0.0		LA/SW, LA/MW, HA/F-SW, LA/MW, LA/F, HZ/SW	Fine to medium grained from 18.6' - 21.6' bgs. Trace Silt and fine Gravel/weathered Rock in low angle (5 degree) break at 19.2' bgs. Shale lamination from 20.3' - 20.35' bgs. Pinkish-white Calcite inclusion from 20.75' - 20.95' bgs. Bedrock fractures LA/MW at approximately 20.3' bgs and LA/SW at approximately 20.35' bgs.	2" Sch. 40 PVC Sump (21.0' - 23.0' bgs)
		8	21.6-23.0	NA	93	2.0	0.0		HZ/SW	Fine grained, very hard, from 21.6' - 23.0' bgs. Bedrock fractures LA/F at approximately 20.65' bgs, HA/F at approximately 20.75' bgs, and HZ/F at approximately 20.85' bgs. Slightly weathered horizontal hairline fracture at 22.5' bgs.	Cement-Bentonite Grout (21.0' - 23.0' bgs)
25	235									End of boring at 23.0' bgs.	
30	230										
35	225										

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

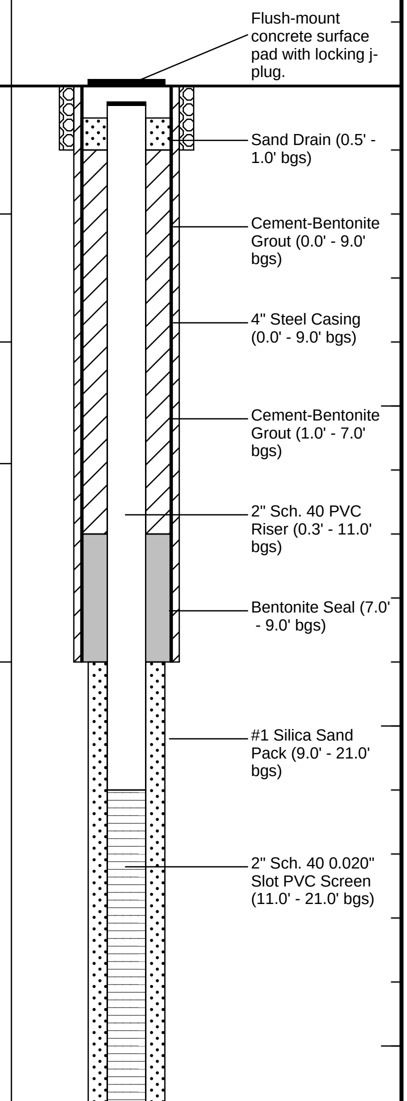
Project: 36671.001 Template: J:\LogPlot\36671\Well2006BR.ldf

Data File:J:\LogPlot\36671\MW-7R.dat Date: 6/5/2006

Date Start/Finish: 5/17/2006 - 5/24/2006	**Northing:** 2136615.728	**Well ID:**	**MW-8R**
Drilling Company: Parratt Wolff	**Easting:** 232904.091	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** 256.97' AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 257.38' AMSL		
Sampler Size: 2" x 2'/ 5' HX Corebarrel	**Borehole Depth:** 23.0' bgs		
Auger Size: 6-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	17 7 5 4	12	0.3	4.6			Medium brown fine to corase SAND, loose, wet due to rain. [FILL]
	255	2	2-4	3 23 6 4	29	0.9	18.6			Tan and black banded SILT, litle fine Sand, trace fine Gravel, stiff, moist to wet due to rain.
5		3	4-5.9	3 4 6 50/0.4	10	0.1	31.7			Tan SILT and fine GRAVEL, medium dense, moist.
	250									Air hammer to 9.0' bgs without sampling.
10	245	4	9-14.2	NA	71	5.1	0.0		HZ/SW HZ/SW LA/SW HZ/SW HZ/SW HZ/SW HZ/SW	Medium gray fine to medium grained Ogdensburg DOLOMITE, little Shale laminations to bands, little to some white fine grained Calcite, trace 1/4" to 1.5" diameter white Calcite inclusions, horizontal bedding, moderate response to HCL, fresh to slightly weathered, hard. Bedrock fractures HZ/SW at approximately 10.05', 10.1', 10.5', and 10.9' bgs. 1" diameter black sticky NAPL in horizontal break at 10.9' bgs. Bedrock fractures HZ/SW at approximately 11.55' bgs, VF/F at approximately 11.65' bgs, and HZ/F at approximately 11.7' bgs.
15		5	14.2-19.2	NA	75	5.3	0.0		LA/SW LA/F HZ/SW HZ/F HZ/F	Trace black staining (3 spots 0.1" diameter) in horizontal break at 15.28' bgs.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-8R**

Borehole Depth: 23.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	240	5	14.2-19.2	NA	75	5.3	0.0		HZ/F HZ/F HZ/F HZ/F	Medium gray fine to medium grained Ogdensburg DOLOMITE, little Shale laminations to bands, little to some white fine grained Calcite , trace 1/4" to 1.5" diameter white Calcite inclusions, horizontal bedding, moderate response to HCL, fresh to slightly weathered, hard. Bedrock fractures HZ/F at approximately 18.05' bgs and HZ/MW at approximately 18.15' bgs. Little black sticky NAPL (8 spots 0.2" diameter, 1 spot 1" diameter) with little black staining in horizontal break at 18.15' bgs.	2" Sch. 40 0.020" Slot PVC Screen (11.0' - 21.0' bgs) #1 Silica Sand Pack (9.0' - 21.0' bgs)
20	235	6	19.2-23.0	NA	78	3.4	0.0		HZ/SW HZ/SW HZ/SW HZ/SW LA/SW	Bedrock fractures HZ/SW at approximately 21.42' and 21.52' bgs. 0.2" diameter black stain at 22.5' bgs.	2" Sch. 40 PVC Sump (21.0' - 23.0' bgs) Cement-Bentonite Grout (21.0' - 23.0' bgs)
25	230									End of boring at 23.0' bgs.	
30	225										
35											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	5/12/2006 - 5/15/2006	**Northing:**	2136648.909
Drilling Company:	Parratt Wolff	**Easting:**	232938.7441
Driller's Name:	Rick Nvatka	**Casing Elevation:**	256.78' AMSL
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	257' AMSL
Sampler Size:	2" x 2'	**Borehole Depth:**	7.3' bgs
Auger Size:	4-1/4"	**Geologist:**	Kristina Gross
Rig Type:	CME 75 Truck-Mount		

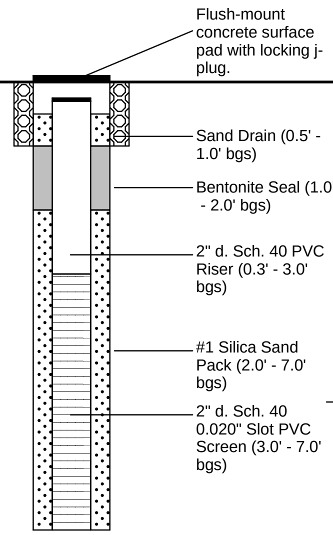
Well ID: **MW-9**

Client: National Grid

Location: King St. Former MGP Site
Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	5, 2, 2, 1	4	0.8	NA			Medium brown fine SAND, some fine Gravel and medium to coarse Sand, little Brick, loose, dry. [FILL]
	255	2	2-4	2, 3, 41, 9	44	0.9	NA			
5		3	4-6	2, 5, 6, 10	11	0.5	NA			Dark brown fine to medium SAND and fine GRAVEL, loose, wet.
	250	4	6-7.3	8, 11, 50/0.3	NA	0.4	NA			Heavy black staining, slight MGP-type odor, from 6.0' - 7.3' bgs.
										Refusal at 7.3' bgs.
10										
	245									
15										

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Headspace readings not available due to heavy rain/PID malfunctioning.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	5/17/2006 - 5/24/2006	**Northing:**	2136651.037
Drilling Company:	Parratt Wolff	**Easting:**	233004.4591
Driller's Name:	Rick Nvatka	**Casing Elevation:**	257.23' AMSL
Drilling Method:	Hollow Stem Auger/ Conventional Coring	**Surface Elevation:**	257.58' AMSL
Sampler Size:	2" x 2'/ 5' HX Corebarrel	**Borehole Depth:**	23.75' bgs
Auger Size:	6-1/4"	**Geologist:**	Kristina Gross
Rig Type:	CME 75 Truck-Mount		

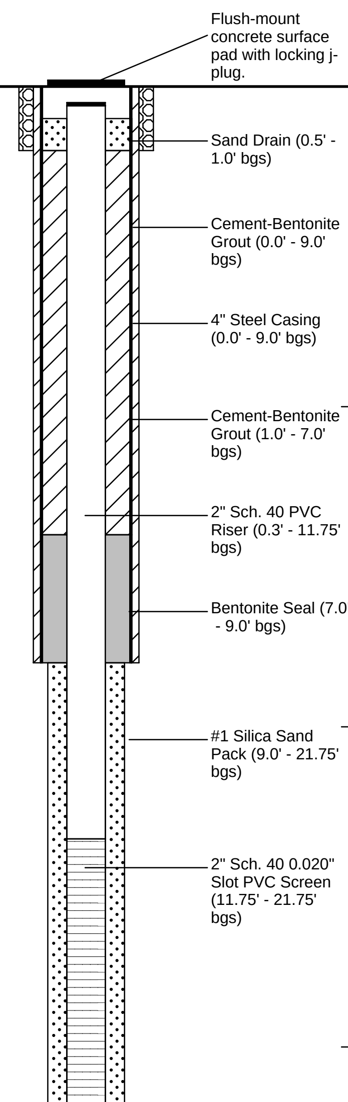
Well ID: **MW-10R**

Client: National Grid

Location: King St. Former MGP Site
Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	6 7 5 8	12	1.5	2.3			Medium brown SILT, some fine SAND, lttle Coal fragments, trace angular to subangular fine Gravel, medium dense, dry to moist due to rain. [FILL]
	255	2	2-4	6 2 5 3	7	0.4	5.2			Dark brown SILT and CINDERS, little fine Sand and red and tan crushed Brick, loose, moist. [FILL]
5		3	4-5.9	2 3 5 50/0.4	8	1.0	15.2			Black-stained SILT, some Cinders, little fine Sand, trace angular fine Gravel, soft, moist to wet. [FILL] Tan SILT, little fine Gravel, hard, moist.
	250									Air hammer to 9.0' bgs without sampling.
10		4	9-9.75	NA	47	0.7	0.0		HZ/F	Light to medium gray medium to coarse grained Ogdensburg DOLOMITE, trace Shale laminations and fine grained white Calcite, horizontal bedding, weak response to HCL, slightly weathered, hard. 1/4" diameter white Calcite inclusions from 9.75' - 11.25' bgs. Approximately 24 black NAPL spots 0.01" to 0.1" diameter in horizontal break at 10.1' bgs.
	245	5	9.75-14.75	NA	71	4.8	0.0		HZ/SW HZ/SW HZ/SW HZ/F HZ/SW HZ/SW HZ/F LA/F HZ/F HZ/F HZ/F HZ/F	Medium gray fine to medium grained Ogdensburg DOLOMITE, some Shale laminations to bands and fine grained to 1/2" diameter white Calcite inclusions, horizontal bedding, moderate response to HCL, slightly weathered, hard. Solution filled hairline fracture at 14.5' bgs.
15		6	14.75-19.75	NA	87	5.1	0.0		HZ/F HZ/F	

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-10R**

Borehole Depth: 23.75' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	240	6	14.75-19.75	NA	87	5.1	0.0		HZ/F HZ/SW HZ/F-SW HZ/SW HZ/F LZ/MW HZ/F	Medium gray fine to medium grained Ogdensburg DOLOMITE, some Shale laminations to bands and fine grained to 1/2" diameter white Calcite inclusions, horizontal bedding, moderate response to HCL, slightly weathered, hard. Bedrock fractures HZ/F at approximately 16.46' bgs and HZ/F-SW at approximately 16.5' bgs.	2" Sch. 40 0.020" Slot PVC Screen (11.75' - 21.75' bgs) #1 Silica Sand Pack (9.0' - 21.75' bgs)
20	235	7	19.75-23.75	NA	87	3.4	0.0		HZ/SW HZ/SW LA/SW HZ/SW	Light gray medium to corase grained Ogdensburg DOLOMITE, massive (no laminations), some to 25% of total composition fine grained to 1.5" diameter white Calcite inclusions, horizontal bedding, strong response to HCL, fresh to slightly weathered, hard.	2" Sch. 40 PVC Sump (21.75' - 23.75' bgs) Cement-Bentonite Grout (21.75' - 23.75' bgs)
25	230									End of boring at 23.75' bgs.	
30	225										
35											

Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

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Project: 36671.001 Template: J:\LogPlot\36671\Well2006BR.ldf

Data File:J:\LogPlot\36671\MW-10R.dat Date: 6/6/2006

Date Start/Finish:	5/12/2006 - 5/15/2006	**Northing:**	2136605.776
Drilling Company:	Parratt Wolff	**Easting:**	233090.8447
Driller's Name:	Rick Nvatka	**Casing Elevation:**	258.89' AMSL
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	259.16' AMSL
Sampler Size:	2" x 2' Split Spoon	**Borehole Depth:**	7.1' bgs
Auger Size:	4-1/4"	**Geologist:**	Kristina Gross
Rig Type:	CME 75 Truck-Mount		

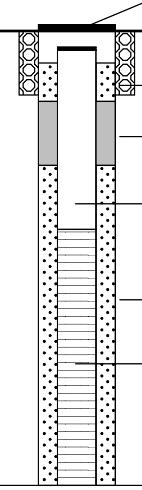
Well ID: **MW-11**

Client: National Grid

Location: King St. Former MGP Site
Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	2 2 1 2	3	0.8	1.2			Medium brown Silt, little fine Sand, Grass, and Roots, loose, moist due to rain. Dark brown fine to medium SAND, little Silt, Cinders, and red crushed Brick, loose, moist.
		2	2-4	2 1 1 2	2	0.8	0.0			
5	255	3	4-6	2 3 4 6	7	0.6	252			Black CINDERS, little red and tan crushed Brick and fine Sand, loose, wet.
		4	6-7.1	1 10 50/0.1	NA	0.4	110			Gray medium GRAVEL/ crushed ROCK, little Cinders and fine Sand, loose, wet.
										Refusal at 7.1' bgs.
10	250									
15	245									

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

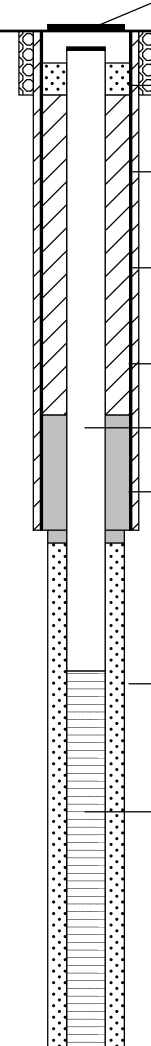
Depth measured from top of casing.

Project: 36671.001 Template: J:\LogPlot\36671\Well2006BR.ldf
Data File:J:\LogPlot\36671\MW-11.dat Date: 6/5/2006

Date Start/Finish: 5/12/2006 - 5/25/2006	**Northing:** 2136552.667	**Well ID:**	**MW-12R**
Drilling Company: Parratt Wolff	**Easting:** 233125.6773	**Client:**	National Grid
Driller's Name: Rick Nvatka	**Casing Elevation:** 260.49' AMSL	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 260.79' AMSL		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 22.0' bgs		
Auger Size: 6-1/4"	**Geologist:** Kristina Gross		
Rig Type: CME 75 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
0										Brown SILT, little fine Sand and Grass, loose, wet due to rain.
	260	1	0-2	4 5 5 5	10	0.5	0.0			Tan BRICKS, BRICK fragments, and SILT (weathered/decomposed Brick), hard, moist.
		2	2-4	4 5 5 6	10	0.8	132			Dark blackish-brown SILT and CINDERS, trace tan crushed Brick, Coal, and fine Sand, little reddish-brown staining and burnt-type odor, medium dense, moist.
		3	4-4.8	2 50/0.3	NA	0.2	15.2			Medium brown SILT, little Cinders and fine Sand, trace red Brick, loose, moist.
5	255									Air hammer to 7.8' bgs without sampling.
10	250	4	7.8-10.8	NA	91	2.9	0.0		HZ/SW LA/SW LA/SW	Medium gray fine to medium grained Ogdensburg DOLOMITE, some Shale laminations, some fine grained white Calcite throughout, trace 1/4" to 1/2" diameter white Calcite inclusions, horizontal bedding, moderate response to HCL, fresh to slightly weathered, hard.
									HZ/SW LA/F	Bedrock fractures HZ/SW at approximately 10.7', 10.75', 11.05', 11.15', 11.6', 11.85', and 11.9' bgs.
15	245	5	10.8-15.8	NA	76	5.1	0.0		HZ/SW LA/SW LA/F	Light gray Ogdensburg DOLOMITE, well graded horizontal bedding grading from corase to fine grained from 13.0' - 13.7', 13.7' - 14.7' and 14.7' - 15.8' bgs, trace Shale laminations, trace fine grained white Calcite throughout, 1/4" to 1" diameter white Calcite inclusions plentiful in coarse grained layers, weak response to HCL, fresh to slightly weathered, hard.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-12R**

Borehole Depth: 22.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
20	240	6	15.8-20.8	NA	90	5.0	0.0		HZ/MW HZ/MW HZ/F LA/F LA/MW HZ/SW HZ/F HZ/MW	Light gray Ogdensburg DOLOMITE, well graded horizontal bedding grading from corase grained from 15.8' - 16.4' bgs grading to fine grained from 16.4' - 19.2.' bgs, trace Shale laminations, trace fine grained white Calcite throughout, 1/4" to 1" diameter white Calcite inclusions plentiful in coarse grained layers, weak response to HCL, fresh to slightly weathered, hard. Some Silt in horizontal break at 16.4' bgs. Band of coarse grained DOLOMITE and CALCITE (Calcite approx. 50% minimum content) from 18.25' - 18.45' bgs. Medium gray Ogdensburg DOLOMOTE, well graded horizontal bedding, medium grained 19.2' - 20.8' bgs, grading to medium to coarse from 20.8' - 21.4' bgs, grading to fine from 21.4' - 22.0' bgs, trace Shale laminations from 20.8' - 21.4' bgs, trace fine grained white Calcite throughout, 1/4" to 1" diameter white Calcite inclusions plentiful in coarse grained layers, weak response to HCL, fresh to slightly weathered, hard. Bedrock fractures HZ/SW at approximately 19.4' and 19.45' bgs.	2" Sch. 40 0.020" Slot PVC Screen (10.0' - 20.0' bgs) #1 Silica Sand Pack (8.0' - 20.0' bgs) 2" Sch. 40 PVC Sump (20.0' - 22.0' bgs) Cement-Bentonite Grout (20.0' - 22.0' bgs)
		7	20.8-22.0	NA	97	1.8	0.0		HZ/SW HZ/MW		
25	235									End of boring at 22.0' bgs.	
30	230										
35	225										

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

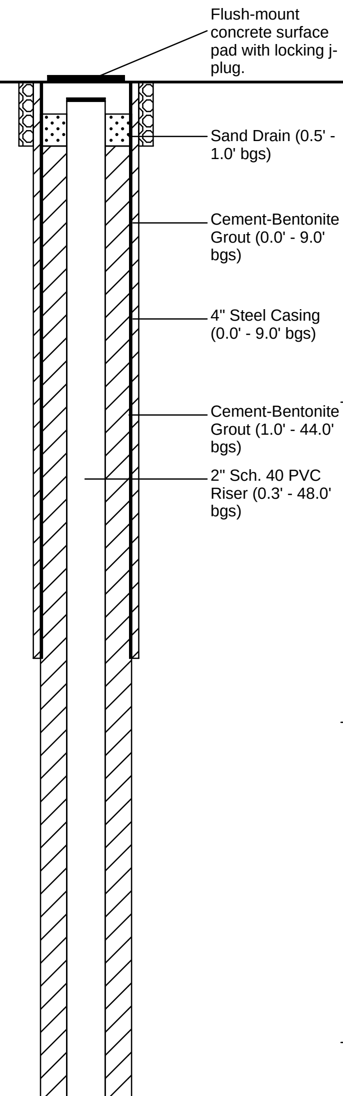
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/19/07 - 10/23/07	**Northing:** 2136421.9382	**Well ID:**	**MW-13R**
Drilling Company: Parratt Wolff	**Easting:** 232861.8676		
Driller's Name: Glenn Lansing		**Client:**	National Grid
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Casing Elevation:** 272.87		
	Surface Elevation: 273.64		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 60.0' bgs	**Location:**	King St. Former MGP Site Ogdensburg, New York
Auger Size: 4-1/4"			
Rig Type: CME 55 Truck-Mount	**Geologist:** Jennifer Sandorf		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	275									
0		1	0-2	42, 6, 4, 3	10	0.5	0.2			ASPHALT. Trace amount of brown fine to coarse SAND, some fine to coarse gray Gravel, dense, dry. Dark brown fine to medium SAND, little fine to medium Gravel, moderately loose, moist.
	270	2	2-4	39, 50/ 0.5	50/ 0.5	1.0	0.0			Brown fine to medium SAND and SILT, slightly plastic, moist. Gray ROCK fragments, very dense, dry. Refusal at 3.0' bgs, auger to 4.0' to begin rock coring.
5	265	3	4-9	NA	64	4.9	0.0		HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly to moderately weathered along fracture surfaces, very hard.
10	260	4	9-14	NA	72	5.0	0.0		HZ V HA LA HZ HZ HZ HZ HZ HZ HZ HZ V	Medium gray fine to medium grained DOLOMITE, horizontal bedding, slightly weathered, very hard.
15		5	14-19	NA	96	5.2	0.0		V HZ HZ HZ	Rock type as above, slightly to moderately weathered.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-13R**

Borehole Depth: 60.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	255	5	14-19	NA	96	5.2	0.0		HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, horizontal bedding, slightly to moderately weathered, very hard.	2" Sch. 40 PVC Riser (0.3' - 48.0' bgs)
20	250	6	19-24	NA	74	4.8	0.0		LA LA HZ HZ HZ HZ HZ	Rock type as above, trace white Calcite inclusions.	Cement-Bentonite Grout (1.0' - 44.0' bgs)
25	245	7	24-29	NA	100	4.8	0.0		HZ HZ HZ LA LA		
30	240	8	29-34	NA	88	4.6	0.0		HZ HZ HZ HZ HZ HZ HZ	Medium and light gray fine to medium grained DOLOMITE, predominantly horizontal bedding, slightly weathered fracture surfaces, very hard. Broken zone at bottom of core run.	
35		9	34-39	NA	100	5.3	0.1		HZ HZ HZ	Medium and dark gray DOLOMITE, trace small (1-2mm wide) calcite inclusions, very hard. Losing some drilling water.	

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-13R**

Borehole Depth: 60.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	235	9	34-39	NA	100	5.3	0.1		HZ HZ	Medium and dark gray DOLOMITE, trace small (1-2mm wide) calcite inclusions, very hard. Losing some drilling water. Unopened vertical fractures 38.8-39.3' bgs.	2" Sch. 40 PVC Riser (0.3' - 48.0' bgs)
40	230	10	39-44	NA	100	5.2	NA - Rain		HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, horizontal bedding, trace white Calcite inclusions, slightly weathered (trace Silt on fracture surfaces), very hard. Moderate water loss during coring.	Cement-Bentonite Grout (1.0' - 44.0' bgs)
45	225	11	44-49	NA	97	4.8	NA - Rain		HZ HZ HZ HZ HZ HZ HZ	Rock type as above, trace white and pinkish-white Calcite veins. Some water loss during coring.	Bentonite Seal (44.0' - 47.0' bgs)
50	220	12	49-54	NA	100	5.0	NA - Rain		HZ HZ	Medium gray DOLOMITE, as above, trace white Calcite infilling.	2" Sch. 40 0.020" Slot PVC Screen (48.0' - 58.0' bgs) #1 Silica Sand Pack (47.0' - 58.0' bgs)
55		13	54-59	NA	84	4.5	NA - Rain		HZ HZ	Rock type as above, trace white and pinkish-white Calcite veins.	

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-13R**

Borehole Depth: 60.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	215	13	54-59	NA	84	4.5	NA - Rain		HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, horizontal bedding, trace white and pinkish-white Calcite veins, slightly weathered, very hard.	2" Sch. 40 0.020" Slot PVC Screen (48.0' - 58.0' bgs); #1 Silica Sand Pack (47.0' - 58.0' bgs); 2" Sch. 40 PVC Sump (58.0' - 60.0' bgs)
60		14	59-60	NA	90	2.0	NA - Rain		HZ HZ HZ	Rock type as above, trace Calcite veins. Coring picked up extra rock from last run.	Cement-Bentonite Grout (58.0' - 60.0' bgs)
65	210										
70	205										
75	200										

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

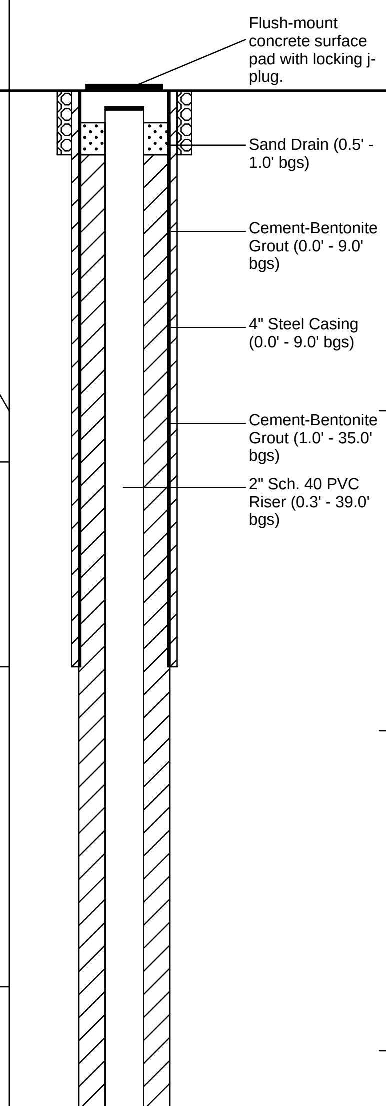
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish:	10/16/07 - 10/18/07	**Northing:** 2136763.9461	**Well ID:** **MW-14R**
Drilling Company:	Parratt Wolff	**Easting:** 232742.1593	**Client:** National Grid
Driller's Name:	Glenn Lansing	**Casing Elevation:** 255.77	**Location:** King St. Former MGP Site, Ogdensburg, New York
Drilling Method:	Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 256.13	
Sampler Size:	2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 60.0' bgs	
Auger Size:	4-1/4"		
Rig Type:	CME 55 Truck-Mount	**Geologist:** Jennifer Sandorf	

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
0										Hand clear location to approximately 3 feet bgs. Materials consist of concrete rip rap and rebar. Auger through to 5 feet bgs.
	255									
5		1	5-7	10 50/ 0.3	50/ 0.3	0.6	0.4		HZ HZ HZ HZ	Gray CONCRETE fragments, little brown fine to medium Sand, dense, dry. Spoon is warm from hammering. Split spoon and auger refusal at 5.8' bgs.
	250	2	5-9	NA	48	3.7	0.3		HZ HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white Calcite, horizontal bedding, slightly weathered, very hard.
10	245	3	9-14	NA	20	5.3	0.0		HZ HZ LA LA HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, trace white Calcite inclusions, horizontal bedding, slightly weathered, very hard.
15		4	14-19	NA	63	5.0	0.0		HZ HZ HZ HZ HZ HZ HZ HZ	Rock type as above.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-14R**

Borehole Depth: 60.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	240	4	14-19	NA	63	5.0	0.0		HZ HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, trace white Calcite inclusions, horizontal bedding, slightly weathered, very hard.	
20	235	5	19-24	NA	84	5.0	1.0		HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ	Rock type as above.	
25	230	6	24-29	NA	84	5.2	0.5		HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ	Rock type as above, slightly weathered, trace black banding (possible Shale laminations).	
30	225	7	29-34	NA	92	5.1	0.6		HZ HZ HZ HZ HZ HZ HZ	Medium to light gray DOLOMITE, as above.	
35		8	34-39	NA	91	4.9	0.0		HZ HZ HZ HZ	Medium to light gray DOLOMITE, as above.	

Well Construction:
2" Sch. 40 PVC Riser (0.3' - 39.0' bgs)
Cement-Bentonite Grout (1.0' - 35.0' bgs)
Bentonite Seal (35.0' - 37.0' bgs)

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Project: B0036671.00010 Template: J:\Rockware\LogPlot2001\LogFiles\36671\Well2006BR.ldf
Data File:J:\Rockware\LogPlot2001\LogFiles\36671\MW-14R.dat Date: 11/7/07

Client:
National Grid

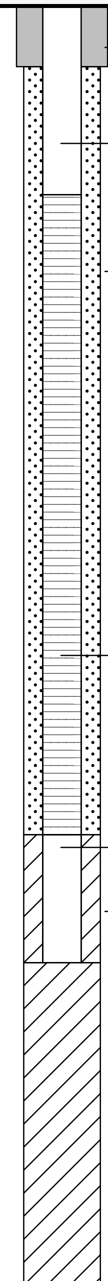
Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-14R**

Borehole Depth: 60.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	220	8	34-39	NA	91	4.9	0.0		HZ, HZ	Medium to light gray fine to medium grained DOLOMITE, trace white Calcite inclusions, trace black banding from possible Shale, slightly weathered, very hard.
40	215	9	39-44	NA	98	5.0	0.8		HZ, HZ, HZ, HZ	Rock type as above, medium gray color, trace pink and white Calcite inclusions.
45	210	10	44-49	NA	90	5.0	1.1		HZ, HZ (rough), HZ (worn), HZ, HZ, HZ, HZ	Medium gray DOLOMITE, as above. Little water loss during coring.
50	205	11	49-54	NA	74	5.0	0.0		HZ, HZ, HZ, HZ, HZ, HZ, HZ, HZ, HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white Calcite inclusions, horizontal bedding, slightly weathered, very hard. Some water loss during coring.
55	200	12	54-59	NA	78	5.1	0.0		HZ, HZ, HZ, HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white Calcite inclusions, horizontal bedding, slightly weathered, very hard. Some water loss during coring.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-14R**

Borehole Depth: 60.0' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	200	12	54-59	NA	78	5.1	0.0		HZ HZ HZ HZ void (rough) HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white Calcite inclusions, horizontal bedding, slightly weathered, very hard. Some water loss during coring.	Cement-Bentonite Grout (49.0' - 60.0' bgs)
60		13	59-60	NA	100	1.1	0.0		void HZ LA	Rock type as above.	
	195										
65											
	190										
70											
	185										
75											

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
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LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

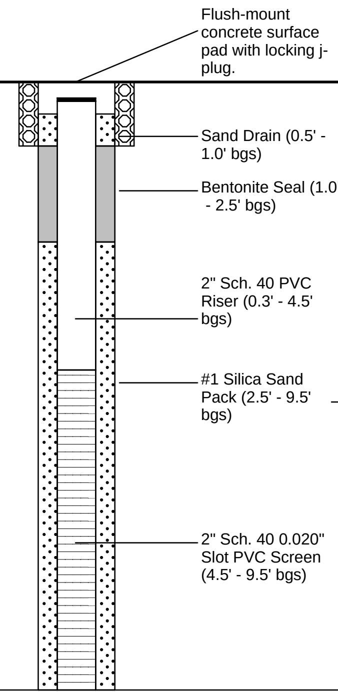
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/11/07	**Northing:** 2136854.4017	**Well ID:** MW-15
Drilling Company: Parratt Wolff	**Easting:** 233026.8813	**Client:** National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** 257.35	**Location:** King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger	**Surface Elevation:** 257.72	
Sampler Size: 2" x 2' SS	**Borehole Depth:** 9.5' bgs	
Auger Size: 4-1/4"	**Geologist:** Jennifer Sandorf	
Rig Type: CME 55 Truck-Mount		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	3, 3, 9, 12	12	1.4	0.0			TOPSOIL with coarse Gravel subbase, loose, dry. / Brown fine SAND, trace coarse Gravel, moderately loose, dry. / Gray CONCRETE fragments, loose, dry.
	255	2	2-4	9, 11, 11, 14	22	1.2	0.0			Light brown fine to medium SAND, little medium to coarse subrounded Gravel, trace Concrete fragments, moderately loose, dry.
5		3	4-6	3, 4, 2, 2	6	1.0	0.0			Brown SILT and fine SAND, some black Coal fragments and red Brick fragments, trace Ash and Cinders, moderately loose, dry to moist.
	250	4	6-8	3, 5, 7, 3	12	0.9	0.0			Miscellaneous FILL materials: Cinders, red Brick fragments, black Coal fragments, moderately loose, moist.
		5	8-9.5	5, 2, 3	5	0.2	0.0			Brown fine to coarse SAND and fine to coarse GRAVEL, moderately loose, moist to wet, Cobble stuck in bottom of spoon.
10										
	245									
15										

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

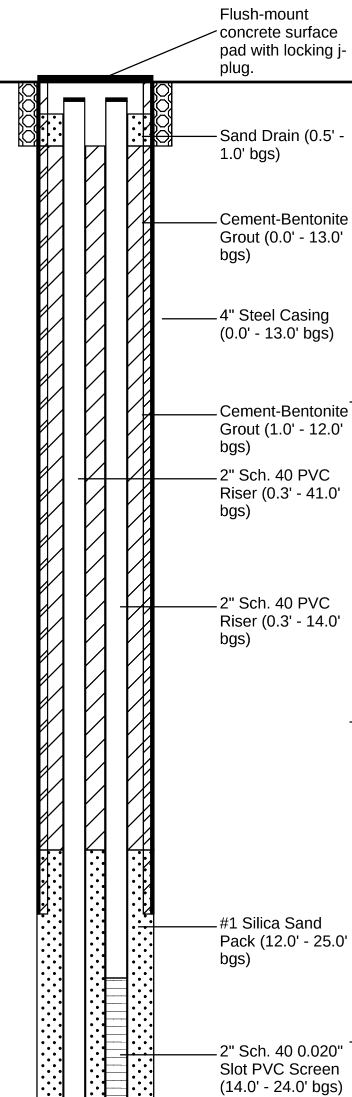
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/10/07 - 10/18/07	**Northing:** 2136855.4910	**Well ID:**	**MW-15R/RD**
Drilling Company: Parratt Wolff	**Easting:** 233022.4991	**Client:**	National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** 257.30	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 257.74		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 59.5' bgs		
Auger Size: 4-1/4"			
Rig Type: CME 55 Truck-Mount	**Geologist:** Jennifer Sandorf		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	260									
0		1	0-2	3, 3, 9, 12	12	1.4	0.0			TOPSOIL with coarse Gravel subbase, loose, dry. Brown fine SAND, trace coarse Gravel, moderately loose, dry. Gray CONCRETE fragments, loose, dry.
	255	2	2-4	9, 11, 11, 14	22	1.2	0.0			Light brown fine to medium SAND, little medium to coarse subrounded Gravel, trace Concrete fragments, moderately loose, dry.
5		3	4-6	3, 4, 2, 2	6	1.0	0.0			Brown SILT and fine SAND, some black Coal fragments and red Brick fragments, trace Ash and Cinders, moderately loose, dry to moist.
	250	4	6-8	3, 5, 7, 3	12	0.9	0.0			Miscellaneous FILL materials: Cinders, red Brick fragments, black Coal fragments, moderately loose, moist.
		5	8-10	5, 2, 3, 5	5	0.2	0.0			Brown fine to coarse SAND and fine to coarse GRAVEL, moderately loose, moist to wet, Cobble stuck in bottom of spoon. Brown to gray-brown SILT, little fine to coarse Sand and fine to medium subrounded Gravel, moderately soft, slightly plastic, moist to wet, rock fragments in tip of spoon.
10		6	10-10.1	50/ 0.1	NA	0.4	0.0			
	245	7	10-13	NA	33	2.7	NA			Medium gray fine to medium grained DOLOMITE, trace white Calcite filled voids, moderately weathered, primarily horizontal fractures, several unopened fractures, very hard. Fractured zones have brownish discoloration on surfaces and some silt.
		8	13-14.5	NA	67	1.5	0.0		HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly weathered, very hard, trace white Calcite inclusions.
15		9	14.5-19.5	NA	38	5.0	0.0		HZ HZ HZ HZ HZ HZ	Rock type as above, slightly weathered, very hard.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
bgs = below ground surface; NA = Not Applicable/Available.
NA = PID not working due to rain or high humidity.
LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-15R/RD**

Borehole Depth: 59.5' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	240	9	14.5-19.5	NA	38	5.0	0.0		HZ HZ HZ HZ HZ LA HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly weathered, very hard, trace white Calcite inclusions.	2" Sch. 40 PVC Riser (0.3' - 41.0' bgs)
20	235	10	19.5-24.5	NA	96	5.0	0.0		HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace pick and white Calcite infilling, trace dark gray Shale banding, horizontal bedding, very hard.	2" Sch. 40 0.020" Slot PVC Screen (14.0' - 24.0' bgs); #1 Silica Sand Pack (12.0' - 25.0' bgs)
25	230	11	24.5-29.5	NA	92	4.9	0.0		HZ HZ HZ HZ HZ HZ HZ	Rock type as above, slightly weathered, trace Silt of fracture surfaces, a few unopened fractures, trace pink and white Calcite infilling.	
30	225	12	29.5-34.5	NA	82	5.0	0.3		HZ VZ HZ HA HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace light gray banding, trace white Calcite infilling, horizontal bedding, slightly weathered, very hard.	Bentonite Seal (25.0' - 39.0' bgs)
35		13	34.5-39.5	NA	78	5.0	0.2		HZ HZ HZ	Rock type as above, no calcite observed, trace black Shale bands (fractures adjacent to shale), small void at 39.3' bgs.	

ARCADIS BBL
Infrastructure, environment, facilities

Remarks:
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NA = PID not working due to rain or high humidity.
LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-15R/RD**

Borehole Depth: 59.5' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	220	13	34.5-39.5	NA	78	5.0	0.2		HZ HZ HZ LA LA HZ	Rock type as above, no calcite observed, trace black Shale bands (fractures adjacent to shale), small void at 39.3' bgs.	Bentonite Seal (25.0' - 39.0' bgs); 2" Sch. 40 PVC Riser (0.3' - 41.0' bgs)
40	215	14	39.5-44.5	NA	86	5.0	0.0		HZ HZ HZ HZ HZ HZ HZ	Rock type as above, medium to dark gray color, trace white Calcite infilling.	#1 Silica Sand Pack (39.0' - 51.0' bgs)
45	210	15	44.5-49.5	NA	98	5.2	0.2		HZ HZ HZ HZ HZ HZ HZ	Rock type as above, trace white and pinkish-white Calcite inclusions.	2" Sch. 40 0.020" Slot PVC Screen (41.0' - 51.0' bgs)
50	205	16	49.5-54.5	NA	100	4.9	0.0		HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained Ogdensburg DOLOMITE, trace white Calcite inclusions, horizontal bedding, slightly weathered, very hard.	2" Sch. 40 PVC Sump (51.0' - 53.0' bgs); Cement-Bentonite Grout (51.0' - 59.5' bgs)
55		17	54.5-59.5	NA	100	5.0	0.3		HZ	Rock type as above, little black banding (possible Shale laminations), trace white and pick Calicite inclusions, very hard.	

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Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **MW-15R/RD**

Borehole Depth: 59.5' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	200	17	54.5-59.5	NA	100	5.0	0.3		HZ HZ HZ	Rock type as above, little black banding (possible Shale laminations), trace white and pick Calicite inclusions, very hard.	Cement-Bentonite Grout (51.0' - 59.5' bgs)
60											
	195										
65											
	190										
70											
	185										
75											

ARCADIS BBL
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Water Level Data

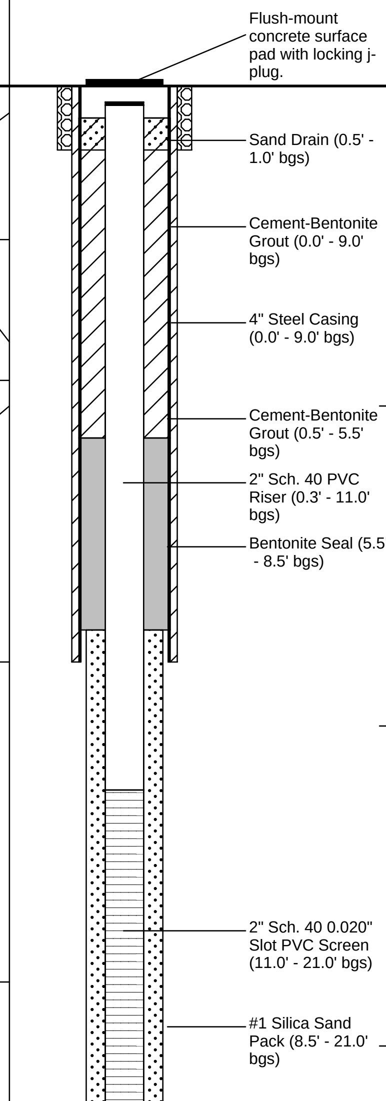
Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 10/24/07 - 10/26/07	**Northing:** 2136584.3195	**Well ID:**	**MW-16R**
Drilling Company: Parratt Wolff	**Easting:** 233201.3687	**Client:**	National Grid
Driller's Name: Glenn Lansing	**Casing Elevation:** 264.76	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 265.31		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 55.1' bgs		
Auger Size: 4-1/4"	**Geologist:** Jennifer Sandorf		
Rig Type: CME 55 Truck-Mount			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
0	265	1	0-2	NA 6 7 9	16	1.0	0.0			ASPHALT. Brown fine SAND, trace coarse Gravel, moderately loose, dry. Moist.
		2	2-4	11 4 4 4	8	0.8	0.0			Brown fine to coarse SAND, trace medium to coarse Gravel, trace Slag, moderately loose, dry. Dark gray fine to coarse SAND and fine to coarse GRAVEL, moderately loose, dry.
5	260	3	4-5.8	4 11 15 50/0.2	26	0.8	0.0			Light gray broken ROCK fragments, dry. Medium gray fine to medium grained Ogdensburg DOLOMITE, horizontal bedding, slightly to moderately weathered on fracture surfaces, very hard. Broken zone at 8.0-8.3' bgs.
		4	5-9	NA	33	3.5	0.0		HZ HZ HZ HZ HZ HZ HZ HZ HZ	
10	255	5	9-14	NA	96	5.2	0.0		HZ HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, trace white Calcite infilling, horizontal bedding, slightly weathered on fracture surfaces (little light gray silt observed), very hard. Observed slight water loss in upper foot (~9-10; bgs) of core run.
15	250	6	14-19	NA	94	5.1	0.4		HZ HZ	Rock type as above. Water loss observed during coring.

Well Construction



ARCADIS BBL
Infrastructure, environment, facilities

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Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client: National Grid

Site Location: King St. Former MGP Site, Ogdensburg, New York

Well ID: **MW-16R**

Borehole Depth: 55.1' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
		6	14-19	NA	94	5.1	0.4		HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, trace white Calcite infilling, horizontal bedding, slightly weathered on fracture surfaces (little light gray silt observed), very hard. Observed slight water loss during coring.	2" Sch. 40 0.020" Slot PVC Screen (11.0' - 21.0' bgs)
20	245	7	19-24	NA	84	5.0	0.0		HZ HZ HZ LA LA HZ HZ HZ HZ	Medium to light gray fine to medium grained DOLOMITE, horizontal bedding, trace white Calcite veins, slightly weathered, very hard.	#1 Silica Sand Pack (8.5' - 21.0' bgs); 2" Sch. 40 PVC Sump (21.0' - 23.0' bgs)
25	240	8	24-29	NA	96	5.0	0.0		HZ HZ HZ HZ LA LA HZ HZ	Rock type as above, trace white Calcite veins, some water loss during rock coring.	Cement-Bentonite Grout (21.0' - 55.1' bgs)
30	235	9	29-34	NA	84	4.8	0.0		HZ HZ HZ HZ HZ HZ	Medium gray DOLOMITE, as above, trace Calcite inclusions.	
35	230	10	34-39	NA	98	5.0	0.0		HZ HZ	Rock type as above, trace white Calcite inclusions, some water loss during rock coring.	

ARCADIS BBL
Infrastructure, environment, facilities

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Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client: National Grid

Site Location: King St. Former MGP Site, Ogdensburg, New York

Well ID: MW-16R

Borehole Depth: 55.1' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
		10	34-39	NA	98	5.0	0.0		LA LA HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, horizontal bedding, trace white Calcite veins, slightly weathered, very hard.	
40	225	11	39-44	NA	100	5.0	0.0		HZ HZ HZ HZ	Rock type as above, trace white Calcite infilling.	Cement-Bentonite Grout (21.0' - 55.1' bgs)
45	220	12	44-49	NA	100	5.0	0.0		HZ HZ HZ HZ	Rock type as above, trace white and pick Calcite infilling.	
50	215	13	49-54	NA	98	5.2	0.0		HZ HZ HZ HZ HZ HZ	Medium gray fine to medium grained DOLOMITE, horizontal bedding, trace white Calcite inclusions, slightly weathered, very hard. Some water loss observed during rock coring.	
55	210	14	54-55	NA	100	4.1	0.0		V HZ V	Rock type as above, light gray color band from 54.8 to 55' bgs.	

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Water Level Data

Date	Depth	Elev.

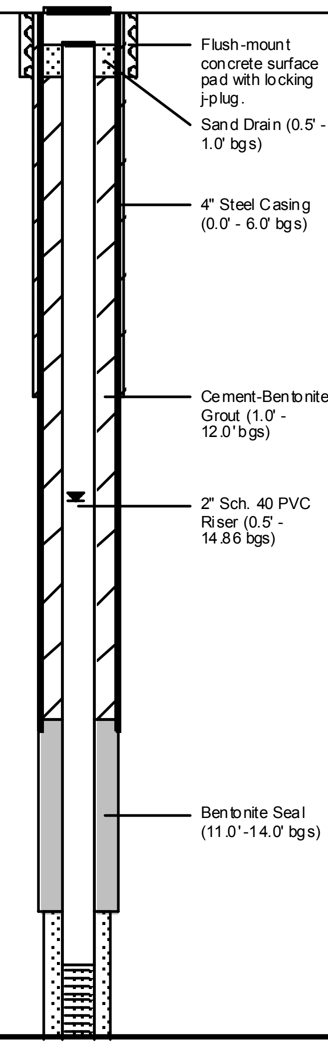
Depth measured from top of casing.

ARCADIS BBL
Infrastructure, environment, facilities

Date Start/Finish: 10/9/08	**Northing:** 2136605.8307	**Well ID:**	**MW-17R**
Drilling Company: Parrot Wolff	**Easting:** 232801.0619	**Client:**	National Grid
Driller's Name: D. Richmond, R. Trask	**Casing Elevation:** 262.97	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 263.29		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 27.0		
Auger Size: HS Auger 4'-1/4"	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
0		1	0-2	8 17 12	17	0.6	1.1			Dark brown fine SAND, little Silt, fine Gravel, organics, moist, non-plastic. Brown fine SAND, little fine Gravel, trace Silt, organics, moist, non-plastic. Grey-pink fine SAND, little silty Clay, trace organics, fine Gravel, moist, non-plastic.
	255	2	2-4	13 12 19 19	31	1.1	0.0			Similar soils, little fine Gravel, moist, non-plastic.
		3	4-5	16 50/0.3	16	0.3	0.0			Similar soils, weathered rock in tip, moist, non-plastic.
5	250	1	5-9	NA	93	4.0	0.0		HZ HZ HZ HZ HZ	Medium to dark grey DOLOSTONE, fractures at Shale partings, dark wavy bands, possible birdseye, trace white fossils.
10	245	2	9-14	NA	91	4.6	0.0		HZ HZ LA HZ HZ	Medium to dark grey DOLOSTONE, birdseye, Shale partings mainly at fractures, little white fossils.
15									HZ HZ HZ	Medium to dark grey DOLOSTONE, birdseye, Shale partings, trace white fossils.

Well Construction



ARCADIS
Infrastructure, environment, facilities

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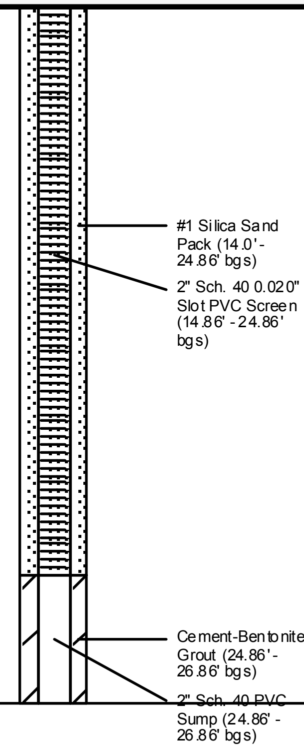
Date Start/Finish: 10/9/08	**Northing:** 2136605.8307	**Well ID:**	**MW-17R**
Drilling Company: Parrot Wolff	**Easting:** 232801.0619	**Client:**	National Grid
Driller's Name: D. Richmond, R. Trask	**Casing Elevation:** 262.97	**Location:**	King St. Former MGP Site, Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 263.29		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 27.0		
Auger Size: HS Auger 4'-1/4"	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	240	3	14-18.8	NA	100	5.2	0.0		HZ HZ	Medium to dark grey DOLOSTONE, birdseye, Shale partings, trace white fossils.	
20	235	4	18.8-24.3	NA	98	5.2	0.0		HZ HZ HZ HZ HZ HZ HZ	Medium to dark grey DOLOSTONE, Shale partings, dark wavy banding, trace white fossils.	
25		5	24.3-27.0	NA	85	2.7	0.0		HZ HZ HZ HZ HZ HZ	Medium to dark grey DOLOSTONE, litle Shale partings, dark wavy banding.	
	230									Bottom of Boring at 26.86' bgs.	
30	225										
35											



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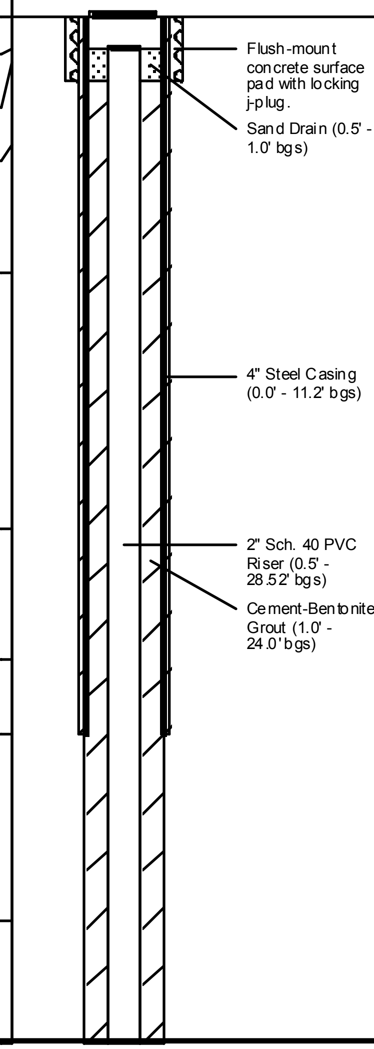
Date Start/Finish:	9/29/08 - 10/16/08	**Northing:**	2137152.88	**Well ID:**	**MW-19R**
Drilling Company:	Parratt Wolff	**Easting:**	232965.69	**Client:**	National Grid
Driller's Name:	D Richmond, R. Trask	**Casing Elevation:**	254.96 ft AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method:	Hollow Stem Auger/ Conventional Coring	**Surface Elevation:**	255.52 ft AMSL		
Sampler Size:	2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:**	68.8' bgs		
Auger Size:	4-1/4"	**Geologist:**	Marcus Eriksson		
Rig Type:	CME-55				

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Bedrock Fractures	Stratigraphic Description
0	255	1	0-2	8, 12, 7, 7	19	0.8	0.0		No sample collected. Black/dark brown fine to medium SAND, little Organics and fine Gravel, trace Silt, trace red Brick, moist, non-plastic. Brown fine SAND, little fine to medium Gravel, Silt and Clay, trace Organics, moist, non-plastic.
		2	2-4	7, 7, 6, 6	13	0.4	0.0		Brown fine SAND, little Silty Clay and fine Gravel, trace Organics, moist, non-plastic.
5	250	3	4-6	12, 5, 4, 3	9	0.0	0.0		No recovery - slough from above consists of dark brown/black fine to medium SAND, trace red Brick fragments and fine Gravel, moist, non-plastic.
		4	6-8	7, 9, 4, 5	13	0.0	0.0		
		5	8-10	5, 7, 9, 7	16	0.4	0.0		Brown/light gray fine SAND, trace fine Gravel and Silty Clay, moist, non-plastic. Refusal at 9.7' bgs.
10	245		10-11.2	NA	NA	NA	NA		Auger through rock to create rock socket.
		6	11.2-14.1	NA	77	2.9	NA	HZ, HZ, HZ, HZ, HA, HZ, HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), trace to little Shale laminations/partings, little dark gray wavy banding. Possible Shale parting at 12.0' and trace brown Silty Clay seams at parting at 12' bgs.(1-2mm).
15	240	7	14.1-19.1	NA	97	5.0	NA	HZ, HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), increased wavy banding from 17.1 to 17.7' bgs (possible birds eye), little dark gray wavy banding, white calcareous fossils 16.6-19.1' bgs.

Well Construction



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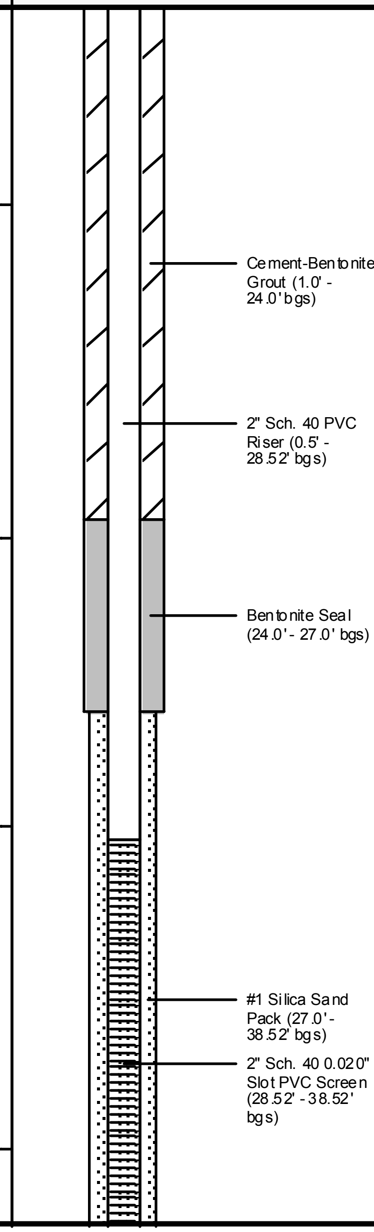
Date Start/Finish: 9/29/08 - 10/16/08	**Northing:** 2137152.88	**Well ID:**	**MW-19R**
Drilling Company: Parratt Wolff	**Easting:** 232965.69	**Client:**	National Grid
Driller's Name: D Richmond, R. Trask	**Casing Elevation:** 254.96 ft AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 255.52 ft AMSL		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 68.8' bgs		
Auger Size: 4-1/4"	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
		7	14.1-19.1	NA	97	5.0	NA		HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), increased wavy banding from 17.1 to 17.7' bgs (possible birds eye), little dark gray wavy banding, white calcareous fossils 16.6-19.1' bgs.
20	235	8	19.1-24.3	NA	95	5.2	NA		HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), trace to little Shale partings, little dark gray wavy banding 22.7-23.7' bgs, little white calcareous fossils. Possible Shale partings at 21.35 and 23.15' bgs. Trace brown Silty Clay at seams at 21.35 and 23.15' bgs.(1-2mm).
25	230	9	24.3-28.8	NA	85	4.5	NA		HZ HZ V HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), little dark gray banding, white calcareous fossils 25.8-26.2' bgs, possible Shale parting 26.6'bgs. Trace brown Silty Clay seams at 26.6'bgs.(1mm) Vertical fracture 27.4-28.8' bgs.
30	225	10	28.8-33.8	NA	83	5.0	NA		V HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), little dark gray banding, trace white fossils, fractures occur at Shale partings. Vertical fracture 28.8-29.6' bgs - appears to continue from previous run, appears to continue unopened to 30.1' bgs.
35		11	33.8-38.8	NA	94	5.0	NA		HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), trace white fossils, little dark gray banding, Shale partings, fractures occur at Shale partings.

Well Construction



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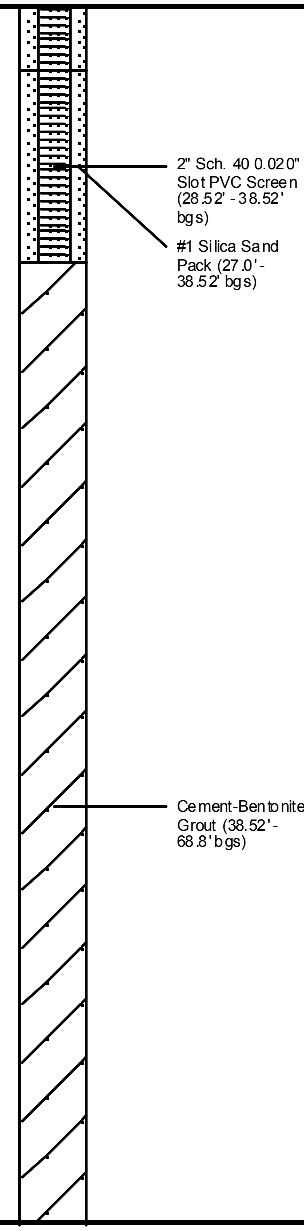
Date Start/Finish: 9/29/08 - 10/16/08 **Drilling Company:** Parratt Wolff **Driller's Name:** D Richmond, R. Trask **Drilling Method:** Hollow Stem Auger/ Conventional Coring **Sampler Size:** 2" x 2' SS/ 5' HX Corebarrel **Auger Size:** 4-1/4" **Rig Type:** CME-55	**Northing:** 2137152.88 **Easting:** 232965.69 **Casing Elevation:** 254.96 ft AMSL **Surface Elevation:** 255.52 ft AMSL **Borehole Depth:** 68.8' bgs **Geologist:** Marcus Eriksson	**Well ID:** **MW-19R** **Client:** National Grid **Location:** King St. Former MGP Site Ogdensburg, New York	

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	220	11	33.8-38.8	NA	94	5.0	NA		HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), trace white fossils, little dark gray banding, Shale partings, fractures occur at Shale partings.
40	215	12	38.8-43.8	NA	56	4.8	NA		HZ HZ HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOMITE (Munsell N4-N5), trace dark wavy banding, trace Shale parting/band (at 42' ~1-2mm thick), trace white fossils.
45	210	13	43.8-49	NA	100	5.2	NA		HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), dark wavy banding, trace white fossils.
50	205	14	49-53.8	NA	83	4.8	NA		HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), dark wavy banding, little Shale partings, trace Shale bands (~1-2 mm thick), trace white fossils, fractures occur at shale partings.
										Medium to dark gray DOLOSTONE (Munsell N4-N5), little to some dark

Well Construction



ARCADIS
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Date Start/Finish: 9/29/08 - 10/16/08 **Drilling Company:** Parratt Wolff **Driller's Name:** D Richmond, R. Trask **Drilling Method:** Hollow Stem Auger/ Conventional Coring **Sampler Size:** 2" x 2' SS/ 5' HX Corebarrel **Auger Size:** 4-1/4" **Rig Type:** CME-55	**Northing:** 2137152.88 **Easting:** 232965.69 **Casing Elevation:** 254.96 ft AMSL **Surface Elevation:** 255.52 ft AMSL **Borehole Depth:** 68.8' bgs **Geologist:** Marcus Eriksson	**Well ID:** **MW-19R** **Client:** National Grid **Location:** King St. Former MGP Site Ogdensburg, New York	

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
55	200	15	53.8-58.8	NA	76	4.8	NA		HZ HZ HZ HZ HZ	wavy banding, trace Shale partings/bands, trace white fossils.	
		15	53.8-58.8	NA	76	4.8	NA		HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), little to some dark wavy banding, trace Shale partings/bands, trace white fossils.	
60	195	16	58.8-63.8	NA	90	5.2	NA		HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), trace to little dark wavy banding, trace Shale partings, trace fossils.	Cement-Bentonite Grout (38.52'-68.8'bgs)
65	190	17	63.8-68.8	NA	85	5.0	NA		HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), little white fossils, Shale partings, little dark wavy banding.	
70	185									Bottom of Boring at 68.8' bgs.	

ARCADIS
Infrastructure, environment, facilities

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Date Start/Finish:	9/30/08 - 10/16/08	**Northing:**	2137109.75
Drilling Company:	Parratt Wolff	**Easting:**	232652.93
Driller's Name:	D Richmond, R. Trask	**Casing Elevation:**	251.52 ft AMSL
Drilling Method:	Hollow Stem Auger/ Conventional Coring	**Surface Elevation:**	251.86 ft AMSL
Sampler Size:	2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:**	63.5' bgs
Auger Size:	4-1/4"	**Geologist:**	Marcus Eriksson
Rig Type:	CME-55		

Well ID: **MW-20R**

Client: National Grid

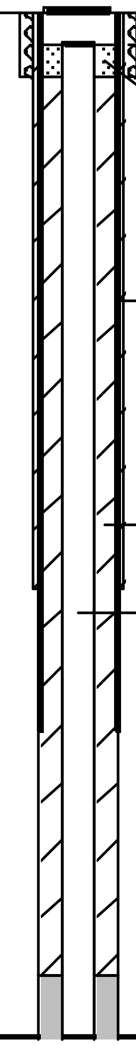
Location: King St. Former MGP Site
Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Bedrock Fractures
0		1	0-2	-, 8, 4, 5	9	1.1	0.3	
	250	2	2-4	15, 12, 9, 13	21	0.3	0.5	
5		3	4-6	11, 7, 9, 8	16	0.7	0.2	
	245	4	6-8	31, 31, 60, -	91	0.5	0.1	
			8-9	NA	NA	NA	NA	
10	240	5	9-14	NA	78	5.0	NA	HZ, HZ, HZ, HZ, LA, HZ, HZ, HA, HZ, HZ
15		6	14-19	NA	78	4.9	NA	HZ, HZ, HZ

Stratigraphic Description

- No sample collected.
- Brown fine to medium SAND, little fine Gravel, trace Organics and Silt, moist, non-plastic.
- Dark brown fine to medium SAND, little Silt and fine Gravel, trace Organics, moist, non-plastic.
- Dark brown fine to medium SAND, some fine Gravel and Silt, moist, non-plastic.
- Gray/brown fine SAND, little Silt, trace Wood and Silty Clay, moist, non-plastic.
- As above, little Silty Clay, saturated. Refusal at 7.5' bgs.
- Auger through rock to create rock socket.
- Medium to dark gray DOLOSTONE (Munsell N4-N5), Shale partings at fractures (light brown bands 5YR-3/2 color), dark wavy banding.
- Medium to dark gray DOLOSTONE (Munsell N4-N5), dark wavy banding, trace Shale partings at fractures.

Well Construction



Remarks: bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

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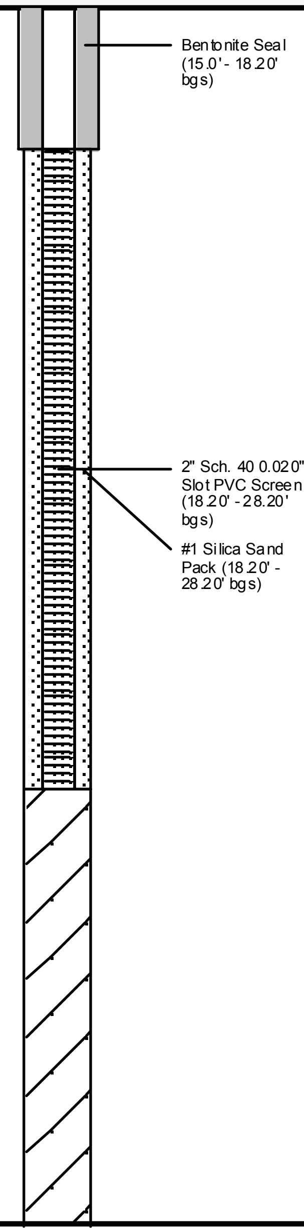
Date Start/Finish: 9/30/08 - 10/16/08	**Northing:** 2137109.75	**Well ID:** **MW-20R**	
Drilling Company: Parratt Wolff	**Easting:** 232652.93	**Client:** National Grid	
Driller's Name: D Richmond, R. Trask	**Casing Elevation:** 251.52 ft AMSL	**Location:** King St. Former MGP Site Ogdensburg, New York	
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 251.86 ft AMSL		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 63.5' bgs		
Auger Size: 4-1/4"	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	235	6	14-19	NA	78	4.9	NA		HZ HZ HZ HZ HZ HZ		
20	230	7	18.9-23.9	NA	98	5.0	NA		HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), dark wavy banding, trace Shale partings, trace white fossils.	
25	225	8	23.9-28.8	NA	90	4.5 / 5.1	NA		HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), trace Shale partings, dark gray wavy banding, possible birds eye throughout.	
30	220	10	28.8-33.8	NA	83	5.0	NA			Medium to dark gray DOLOSTONE (Munsell N4-N5), little dark gray banding, trace Sale partings.	
35		11	33.8-38.8	NA	94	5.0	NA			Medium to dark gray DOLOSTONE (Munsell N4-N5), trace Shale partings.	



Remarks: bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

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Date Start/Finish: 9/30/08 - 10/16/08	**Northing:** 2137109.75	**Well ID:**	**MW-20R**
Drilling Company: Parratt Wolff	**Easting:** 232652.93	**Client:**	National Grid
Driller's Name: D Richmond, R. Trask	**Casing Elevation:** 251.52 ft AMSL	**Location:**	King St. Former MGP Site Ogdensburg, New York
Drilling Method: Hollow Stem Auger/ Conventional Coring	**Surface Elevation:** 251.86 ft AMSL		
Sampler Size: 2" x 2' SS/ 5' HX Corebarrel	**Borehole Depth:** 63.5' bgs		
Auger Size: 4-1/4"	**Geologist:** Marcus Eriksson		
Rig Type: CME-55			

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
	215	11	33.8-38.8	NA	94	5.0	NA		HZ		
40	210	12	38.8-43.8	NA	56	4.8	NA		HZ HZ HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOMITE (Munsell N4-N5), little white Fossils, trace Shale parting, fractures occur at shale partings.	
45	205	13	43.8-49	NA	100	5.2	NA		HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), little white Fossils, Shale partings, fractures occur at shale partings.	Cement-Bentonite Grout (28.20'-63.5'bgs)
50	200	14	49-53.8	NA	83	4.8	NA		HZ HZ HZ HZ HZ HZ HZ	Medium to dark gray DOLOSTONE (Munsell N4-N5), some dark gray wavy banding, little Shale partings, trace white Fossils, fractures occur at Shale partings.	

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Date Start/Finish:	9/30/08 - 10/16/08
Drilling Company:	Parratt Wolff
Driller's Name:	D Richmond, R. Trask
Drilling Method:	Hollow Stem Auger/ Conventional Coring
Sampler Size:	2" x 2' SS/ 5' HX Corebarrel
Auger Size:	4-1/4"
Rig Type:	CME-55

Northing:	2137109.75
Easting:	232652.93
Casing Elevation:	251.52 ft AMSL
Surface Elevation:	251.86 ft AMSL
Borehole Depth:	63.5' bgs
Geologist:	Marcus Eriksson

Well ID:	**MW-20R**
Client:	National Grid
Location:	King St. Former MGP Site Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
										Medium to dark gray DOLOSTONE (Munsell N4-N5), some Shale partings/bands, trace white fossils, fractures occur at Shale partings.	
55		15	53.8-58.8	NA	76	4.8	NA		HZ HZ HZ HZ HZ		
	195								HZ HZ		
		15	53.8-58.8	NA	76	4.8	NA		HZ HZ HZ HZ HZ		
										Medium to dark gray DOLOSTONE (Munsell N4-N5), some dark wavy banding, Shale partings/bands, trace white fossils, possible water seem at fracture 59.8' bgs.(Silt in fracture, 1" fracture)	
60									HZ HZ HZ		
	190	16	58.8-63.8	NA	90	5.2	NA		HZ HZ HZ HZ HZ HZ		
										Bottom of Boring at 63.5' bgs.	
65											
	185	17									
70											
	180										

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.

LA = Low Angle Fracture; HA = High Angle Fracture; HZ = Horizontal Fracture; VF = Vertical Fracture. F = Fresh; SW = Slightly Weathered; MW= Moderately Weathered; VW = Very Weathered.

Date Start/Finish:	3/8/2006	**Northing:**	2136467.527
Drilling Company:	Parratt Wolff	**Easting:**	232966.2587
Driller's Name:	Rick Nvatka	**Casing Elevation:**	263.54' AMSL
Drilling Method:	Hollow Stem Auger	**Surface Elevation:**	263.86' AMSL
Sampler Size:	2" x 2'	**Borehole Depth:**	16.4' bgs
Auger Size:	4-1/4"	**Geologist:**	Kristina Gross
Rig Type:	CME 75 Truck-Mount		

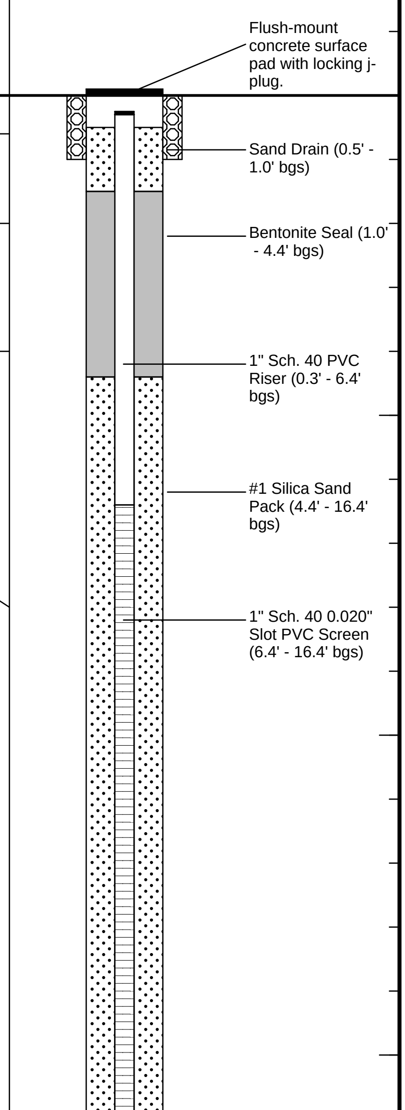
Well ID: **PZ-1**

Client: National Grid

Location: King St. Former MGP Site
Ogdensburg, New York

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description
	265									
0		1	0-2	4, 6, 5, 4	11	0.8	0.0			Brown Silt and Roots, loose, dry. [FILL] Brown SILT and fine GRAVEL, loose, dry. [FILL]
		2	2-4	2, 4, 2, 5	6	0.6	0.0			Dark brown SILT and angular fine GRAVEL, some to little red Brick, loose, dry. [FILL]
5	260	3	4-6	2, 2, 2, 5	4	0.6	0.0			Dark brown SILT and crushed red BRICK, little angular fine Gravel, loose, dry. [FILL]
		4	6-8	2, 3, 5, 8	8	0.4	0.0			Moist at 6.0' bgs. Wet at approximately 7.0' bgs.
	255	5	8-10	6, 7, 3, 2	10	0.9	0.0			Dark to medium brown fine to coarse SAND and crushed red BRICK, little subrounded fine Gravel and Mortar fragments, loose to medium dense, wet.
10		6	10-12	3, 6, 8, 8	14	0.7	0.0			
	250	7	12-14	10, 12, 4, 5	16	0.8	0.0			
15		8	14-16	13, 18, 31, 28	49	1.6	0.4			Crushed Rock (Gray Limestone) below 15.0' bgs.

Well Construction



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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Client:
National Grid

Site Location:
King St. Former MGP Site
Ogdensburg, New York

Well ID: **PZ-1**

Borehole Depth: 16.4' bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Bedrock Fractures	Stratigraphic Description	Well Construction
		9	16-16.4	50/0.4	NA	0.4	21.4			Black stained decomposed MORTAR, trace crushed red Brick, very loose (soupy), wet, weak MGP-type odor, trace black sticky NAPL.	
										Refusal at 16.4' bgs.	
	245										
20											
	240										
25											
	235										
30											
	230										
35											

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Remarks:
bgs = below ground surface; NA = Not Applicable/Available.

Water Level Data

Date	Depth	Elev.

Depth measured from top of casing.

Date Start/Finish: 12/8/2003 **Excavating Company:** Parratt-Wolff **Operator's Name:** Brad Palmer **Backhoe:** Komatsu WB140-2T	**Northing:** 2136585.3089 **Easting:** 232971.8475 **Surface Elevation:** 259.65 ft. AMSL **Test Pit Depth:** 6' below grade **Field Person (s):** Matthew Kohberger	**Test Pit No.** TP-1 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Engineer's/Geologist's Notes
	260							
0				ND			Brown fine to medium SAND, some Silt, Brick, Cobbles, Wood, Metal [FILL] within apparent Governor House foundation. Dark brown to black fine to coarse SAND and CLAY, moist, outside apparent Governor House foundation.	Apparent at-grade holder foundation was a 1' thick concrete slab. Pipes were found outside the west wall of the apparent governor house foundation at a depth of approximately 3' bgs. Material outside governor house is native. There is no evidence of fill material in this area.
				ND			Dark brown to black fine to coarse SAND, some Clay, moist.	
5	255			ND			Brown fine to coarse SAND, some Clay, moist, slight coal tar odor.	BTEX, PAH's, and Total Cyanide sample collected at 1140 and 1215. Sheen on water in the bucket where TP-1B was collected (immediately outside of apparent at-grade holder foundation).
				ND	X		Wet, slight black staining, slight coal tar odor, at approximately 6.0' bgs.	
							Bottom of excavation at approximately 6.0' bgs.	
10	250							

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil samples TP-1 and TP-1B were collected at approximately 6.0' bgs for BTEX, PAHs, and Total Cyanide.

Test pit dimensions: 24' x 5'. Survey coordinates are for the northwest corner of the test pit.

Project: 36671.002
Data File:TP-1.dat
Template: J:\rockware\LogPlot2001\Logfiles\36671\Testpit03.ldf
Date: 12/17/2003

Date Start/Finish: 12/8/2003 **Excavating Company:** Parratt-Wolff **Operator's Name:** Brad Palmer **Backhoe:** Komatsu WB140-2T	**Northing:** 2136620.3973 **Easting:** 233022.2562 **Surface Elevation:** 259.17 ft. AMSL **Test Pit Depth:** 5' below grade **Field Person (s):** Matthew Kohberger	**Test Pit No.** TP-2 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Engineer's/Geologist's Notes
	260							
0				ND			Brown SILT, little fine to medium Sand, dry. [FILL]	
				ND			Brown Clayey SILT, little fine to medium Sand, little fine Gravel, dry. [FILL]	
				1.7			Brown Clayey SILT, little fine to medium Sand, trace fine Gravel, moist, black staining, strong coal tar odor. [FILL]	
	255				X		Black stained Clayey SILT and NAPL. [FILL]	BTEX, PAHs, and Total Cyanide sample collected at 1330. Tar well foundation made of red brick.
				112			Water encountered at approximately 5.0' bgs.	
5							Bottom of excavation at approximately 5.0' bgs.	
	250							
10								

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample TP-2 collected at approximately 4.0' bgs for BTEX, PAHs, and Total Cyanide.

Test pit dimensions: 17' x 2'. Survey coordinates are for the northwest corner of the test pit.

Project: 36671.002
Data File:TP-2.dat

Template: J:\rockware\LogPlot2001\Logfiles\36671\Testpit03.ldf
Date: 12/17/2003

Date Start/Finish: 12/8/2003 **Excavating Company:** Parratt-Wolff **Operator's Name:** Brad Palmer **Backhoe:** Komatsu WB140-2T	**Northing:** 2136522.5919 **Easting:** 232920.6159 **Surface Elevation:** 261.70 ft. AMSL **Test Pit Depth:** 5' below grade **Field Person (s):** Matthew Kohberger	**Test Pit No.** TP-3 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Engineer's/Geologist's Notes
0							Brown Clayey SILT, some Limestone Cobbles. [FILL] Dry 0'-4' bgs.	
				ND				
	260							
				ND				
							Moist at 4'-5' bgs.	
				ND			Water at approximately 5.0' bgs.	
5							Bottom of excavation at approximately 5.0' bgs.	
	255							
10								

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
No sample was collected.

Test pit dimensions: 13' x 2'. Survey coordinates are for the northwest corner of the test pit.

Date Start/Finish: 12/9/2003
Excavating Company: Parratt-Wolff
Operator's Name: Brad Palmer
Backhoe: Komatsu WB140-2T

Northing: 2136494.0058
Easting: 232928.6213
Surface Elevation: 262.54 ft. AMSL
Test Pit Depth: 6' below grade
Field Person (s): Matthew Kohberger

Test Pit No. TP-3B
Client: Niagara Mohawk
A National Grid Company
Location: King Street Former MGP Site
Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Engineer's/Geologist's Notes
0				ND			Dark brown SILT, dry. [FILL]	
	260			ND			Dark brown SILT, some Cobbles, Brick fragments inside apparent holder foundation, dry. [FILL]	
5				ND	X		Water at approximately 6.0' bgs.	Apparent holder foundation is composed of brick and limestone blocks. BTEX, PAHs, and Total Cyanide sample collected at 0745.
	255						Bottom of excavation at approximately 6.0' bgs.	
10								

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample TP-3b collected at approximately 6.0' bgs for BTEX, PAHs, and Total Cyanide.

Test pit dimensions: 30' x 2'. Survey coordinates are for the northwest corner of the test pit.

Date Start/Finish: 12/9/2003 **Excavating Company:** Parratt-Wolff **Operator's Name:** Brad Palmer **Backhoe:** Komatsu WB140-2T	**Northing:** 2136468.3795 **Easting:** 233005.7558 **Surface Elevation:** 264.11 ft. AMSL **Test Pit Depth:** 6' below grade **Field Person (s):** Matthew Kohberger	**Test Pit No.** TP-4 **Client:** Niagara Mohawk A National Grid Company **Location:** King Street Former MGP Site Ogdensburg, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	PID Headspace (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Engineer's/Geologist's Notes
	265							
0				ND			Brown SILT, little fine Sand, Brick, dry. [FILL]	
				ND			Brown SILT, little fine to medium Sand, Brick fragments, dry. Black staining at 2' - 4' bgs. [FILL]	Metal pipes crossing TP-4 at approximately 2' bgs. Pipes encountered 27' and 39' west of the eastern edge of TP-4 at approximately 2' bgs. One pipe parallel to TP-4 from 11'-21' west of the eastern edge of TP-4 at approximately 2' bgs. Apparent abandoned gas line 23' west of the eastern edge of TP-4 at approximately 2' bgs.
	260			ND			Moist at 4.0' bgs. Heavy black staining, NAPL, and strong coal tar odor at 4' - 6' bgs.	
5					X		Wet at approximately 5.0' bgs.	BTEX, PAH's, and Total Cyanide sample collected at 0845. Apparent tar well foundation composed of red brick.
							Bottom of excavation at approximately 6.0' bgs.	
	255							
10								

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Remarks: bgs = below ground surface; NA = Not Applicable/Available.
Soil sample TP-4 collected at approximately 5.0' bgs for BTEX, PAHs, and Total Cyanide.

Test pit dimensions: 59' x 2'. Survey coordinates are for the northwest corner of the test pit.

Project: 36671.002
Data File:TP-4.dat
Template: J:\rockware\LogPlot2001\Logfiles\36671\Testpit03.ldf
Date: 12/17/2003

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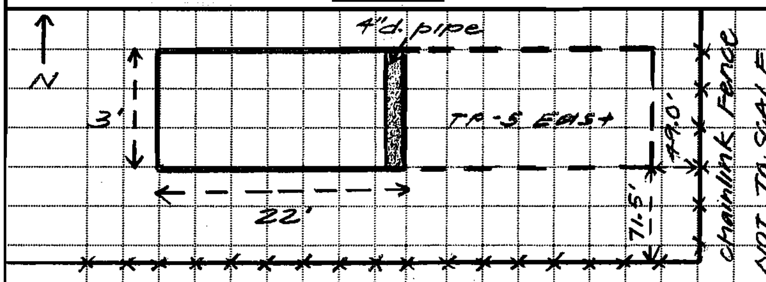
Test Pit Log

Test Pit ID: TP-5 West

Client:	National Grid	**Date:**	5/23/2006
Project:	King St. Former MGP Site	**Weather:**	Cloudy
Location:	Ogdensburg, NY	**Temperature:**	60°s
Project #:	36671.010	**Wind:**	Calm
Geologist:	K. Gross	**Subcontractor:**	Parratt Wolff
Coordinates:	NA	**Equipment:**	Komatsu WB140 Rubber tired backhoe

Sketch of Test Pit Layout:

Plan View



Profile View

Test Pit Dimensions:	22' x 3'	**Total Depth:**	6.5'	**Depth to Water:**	6.5'

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0 – 3	0 – 1: 1.1	Medium brown fine SAND, some medium to coarse Sand and fine to coarse Gravel, little Silt, trace red and tan Bricks, loose, dry to moist (due to recent rain).	
3 – 5	2 – 4: 65.8	Medium brown to orangish-brown fine SAND, little Silt and Ash, little medium to coarse Sand, trace fine to coarse Gravel, soft, moist. Approximately 1' x 3' solid rock blocks, likely dolomite, at west end of test pit, from 4 – 5' bgs.	
5 – 6	167	Black stained fine to coarse GRAVEL and weather BEDROCK, some to little fine to coarse Sand, little Silt, loose, moist, little rainbow sheen, little to some black sticky (tar-like) NAPL.	
6 – 6.5	982	Weathered BEDROCK coated with black sticky (tar-like) NAPL, little water on top of bedrock, some rainbow sheen. Competent bedrock at approximately 6.5' bgs.	

Notes:

NA = Not Available/Applicable; bgs = below ground surface.

4" pipe, unknown material, apparently very old, encountered approximately 5' bgs running N-S at the eastern end of the test pit.

Photograph Summary:

#343	Little sticky NAPL at 5' – 6' bgs
#344	Sticky NAPL on soils from 5' – 6' bgs.
#348	Excavated test pit to ~ 6' bgs, north side wall

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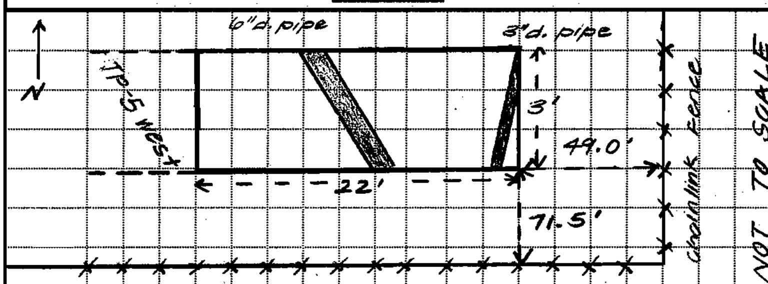
Test Pit Log

Test Pit ID: TP-5 East

Client:	National Grid	**Date:**	5/23/2006
Project:	King St. Former MGP Site	**Weather:**	Cloudy
Location:	Ogdensburg, NY	**Temperature:**	60°s
Project #:	36671.010	**Wind:**	Calm
Geologist:	K. Gross	**Subcontractor:**	Parratt Wolff
Coordinates:	NA	**Equipment:**	Rubber tired backhoe

Sketch of Test Pit Layout:

Plan View



Profile View

Test Pit Dimensions:	**22' x 3'**	**Total Depth:**	**6.5'**	**Depth to Water:**	**4.7'**

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0 – 3	1 – 3: 26.7	Medium brown fine SAND, some medium to coarse Sand and fine to coarse Gravel, little Silt, loose, dry to moist (due to recent rain). Bands of black, tan, bluish-green, and orange visible on the south side wall from 0.5' – 2' bgs.	TP-5 (1' – 3') for Cn
3 – 6	4.7 – 6.5: 1058	Approximately 1' x 3' x 3' ROCK blocks, likely dolomite, and brown fine SAND, some medium to coarse Sand and fine to coarse Gravel, little Silt, loose, moist to wet at 4.7' bgs. Some rainbow sheen (~ 50% of water surface) and little LNAPL (~ 15% of water surface) on water at 4.7' bgs.	TP-5 (4.7' – 6.5') for VOCs, SVOCs, and Cn
6 – 6.5	NA	Large ROCK blocks as above, likely dolomite, and brown Clayey SILT pocketed with black very sticky (tar-like) NAPL, some rock blocks partially coated with black very sticky NAPL, NAPL in voids between rock blocks. Competent bedrock at 6.5' bgs.	

Notes:

NA = Not Available/Applicable; bgs = below ground surface.

6" steel pipe with little bluish-green staining, in approximate center of test pit and 4' bgs, running NW-SE.

3" abandoned gas line (coated with yellow plastic) in east end of test pit at 3' bgs, running N-S.

Photograph Summary:

#363	Bands of staining 0.5' – 2' bgs, north side wall
#352	6" steel pipe and 3" abandoned gas line (Orientation: E)
#353	Bluish-green stained soil
#355	Bluish-green stained soil, north side wall
#358	Black sticky NAPL coating backhoe bucket
#360	Black sticky NAPL on large blocks of rock 6' – 6.5' bgs
#361	North side wall of completed test pit
#362	Rainbow sheen and NAPL on water surface at 4.7' bgs
#364	Large blocks of rock excavated from 3' – 6.5' bgs (Orientation: S)

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BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

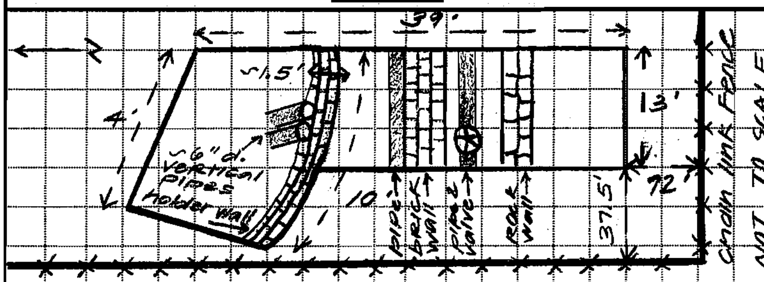
Test Pit Log

Test Pit ID: TP-6

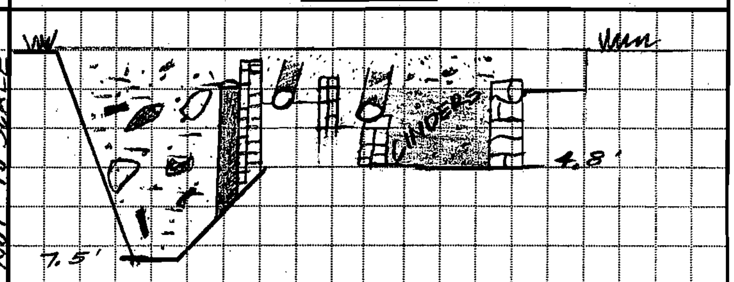
Client:	National Grid	**Date:**	5/23/2006
Project:	King St. Former MGP Site	**Weather:**	Cloudy
Location:	Ogdensburg, NY	**Temperature:**	60°s
Project #:	36671.010	**Wind:**	Calm
Geologist:	K. Gross	**Subcontractor:**	Parratt Wolff
Coordinates:	NA	**Equipment:**	Komatsu WB140 Rubber tired backhoe

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	39' x 3'	**Total Depth:**	7.5'	**Depth to Water:**	7.5'

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0 – 7.5	0 – 2: 25.6 1 – 3: 19.3 2 – 4: 27.8 5 – 7: 36.4	Brown fine to coarse SAND, little to some Silt, red and tan Brick, Clinkers, fine to coarse Gravel, Cinders, and large Rock blocks (1' x 3' x 3'), loose. Water at 7.5' bgs, little rainbow sheen on water surface.	TP-6 (0' – 2') and TP-6 (5' – 7') for VOCs, SVOCs, and Cn

Notes:

NA = Not Available/Applicable; bgs = below ground surface.

6" pipes encountered in the center of the test pit at approximately 2' bgs, running E-W. Turn valve is attached to southern pipe.

Rock and mortar wall and "floor" with metal-like covering observed south of pipes; refusal on "floor" at 4.8' bgs.

Brick and mortar holder wall encountered at approximately 1.5' bgs. Two ~ 6" diameter pipes were observed to run vertically along the south holder wall.

Photograph Summary:

#373	Rock and mortar wall (Orientation: W)
#374	Rock and mortar wall, cinders, pipe and valve (Orientation: W)
#375	Turn valve on pipe (Orientation: W)
#376	"Floor" encountered at 4.8' bgs
#379	Brick and mortar holder wall with vertical pipes (Orientation: S)
#380	Brick and mortar holder wall (Orientation: SW)
#382	Completed test pit (Orientation: N)
#384	Completed test pit, north end (Orientation: E)

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Appendix B

Hydraulic Conductivity
Spreadsheets

APPENDIX B
HYDRAULIC CONDUCTIVITY CALCULATION SPREADSHEET FOR PACKER TEST SPECIFIC CAPACITY DATA

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Well ID	Assumed Storativity	Pumping Period (minute)	Water Removed (gallon)	Initial Water level (ft) below Measurement Point	Final Water level (ft) below Measurement Point	Tested Interval (ft, bgs)	Well Borehole Diameter (inch)	Reference Point Elevation (ft, ags)	Water Removed from Well Storage (gallon)	Water Removed from Aquifer (gallon)	K (ft/day)
MW-2R(12-19)	0.001	26	14	8.63	19.65	12-19	2.5	2.15	2.81	11.19	8.61E-01
MW-2R(19-29)	0.001	18	7	18.8	20.4	19-29	2.5	2.15	0.41	6.59	4.08E+00
MW-2R(29-39)	0.001	4	8	10.15	30.05	29-39	2.5	3.3	5.07	2.93	4.44E-01
MW-2R(39-50)	0.001	30	43	6.6	11.65	39-50	2.5	3.3	1.29	41.71	4.75E+00
MW-15R(13-19.5)	0.001	9	10	7.55	18.8	13-19.5	2.5	2	2.87	7.13	1.59E+00
MW-15R(19.5-29.5	0.001	14	10	6.02	31.8	19.5-29.5	2.5	3.3	6.57	3.43	1.13E-01
MW-15R(29.5-39.5	0.001	17	12	5.7	36	29.5-39.5	2.5	3.3	7.72	4.28	9.97E-02
MW-15R(39.5-49.5	0.001	31	18	7.3	32.6	39.5-49.5	2.5	3.2	6.45	11.55	2.07E-01
MW-15R(49.5-59.5	0.001	21	11	5.8	47.4	49.5-59.5	2.5	3.5	10.60	0.40	3.18E-03
MW-14R(9-19)	0.001	10	7	7.4	16.2	9-19	2.5	2.5	2.24	4.76	7.76E-01
MW-14R(19-29)	0.001	18	9	6.75	33.4	19-29	2.5	4.4	6.79	2.21	5.09E-02
MW-14R(29-39)	0.001	27	13	6.45	40.75	29-39	2.5	4.4	8.74	4.26	5.42E-02
MW-14R(39-49)	0.001	43	30	10.3	10.48	39-49	2.5	4.4	0.05	29.95	9.28E+01
MW-14R(49-60)	0.001	35	22	3.5	40.55	49-60	2.5	4.4	9.45	12.55	1.19E-01
MW-13R(9-19)	0.001	7	10	4.15	20.6	9-19	2.5	2	4.19	5.81	6.87E-01
MW-13R(19-29)	0.001	10	9	18.3	30.6	19-29	2.5	4.2	3.14	5.86	6.74E-01
MW-13R(29-39)	0.001	31	19	13.18	39.54	29-39	2.5	4.3	6.72	12.28	2.12E-01
MW-13R(39-49)	0.001	20	10	11.52	40.35	39-49	2.5	4.3	7.35	2.65	5.17E-02
MW-13R(49-60)	0.001	45	23	21.1	47.05	49-60	2.5	4.3	6.62	16.38	1.87E-01
MW-16R(9-19)	0.001	30	42	11.3	19.4	9-19	2.5	2.2	2.06	39.94	3.01E+00
MW-16R(29-39)	0.001	22	11	11.75	43.3	29-39	2.5	4.4	8.04	2.96	4.81E-02
MW-16R(39-49)	0.001	33	23	19.23	27.98	39-49	2.5	4.3	2.23	20.77	1.21E+00
MW-16R(49-55)	0.001	18	12	11.75	51.9	49-55	2.5	4.4	10.24	1.76	4.04E-02

Hyadraulic counductivity values calculated using the methods descibed in Walton, 1962.

APPENDIX B
HYDRAULIC CONDUCTIVITY CALCULATION SPREADSHEET FOR MONITORING WELL SPECIFIC CAPACITY DATA

NATIONAL GRID
REMEDIAL INVESTIGATION
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Well ID	MW-1*	MW-2	MW-2R	MW-3	MW-4R	MW-5R	MW-7R	MW-8R	MW-9	MW-10R	MW-11	MW-12R	MW-13R	MW-14R	MW-15	MW-16R
Assumed Storativity	NA	0.001	0.001	0.01	0.001	0.001	0.001	0.001	0.01	0.001	0.01	0.001	0.001	0.001	0.01	0.001
Pumping Period (minute)	2	30	30	45	30	30	30	30	40	28	35	33	55	30	35	30
Water Removed (gallon)	0.8	1.19	2.77	1.19	1.19	1.59	1.98	2.38	1.58	1.66	4.16	0.87	3.6	2.38	1.16	1.98
Initial Water level (ft) below Measurement Point	6.01	3.19	0.000001	3.75	9.69	2.36	1.05	0.3	4.7	0.66	1.9	6.93	13.41	4.39	6.8	8.02
Final Water level (ft) below Measurement Point	6.5	3.68	0.2	4.21	13.14	6.84	2.79	4.2	5.06	2.11	1.98	9.86	13.89	4.42	7.08	11.41
Sandpack Top (ft, bgs)	3	1.5	38	2	6	10	9	9	2	9	2	8	47	37	2.5	8.5
Sandpack Bottom (ft, bgs)	7	6.3	50	5.3	18	22.4	21	21	7	21.75	7	20	58	49	9.5	21
Assumed Sandpack Porosity	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Well Casing Diameter (inch)	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Well Borehole Diameter (inch)	8.25	8.25	2.5	8.25	3	3	3	3	8.25	3	8.25	3	3	3	8.25	3
Reference Point Elevation (ft, ags)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water Removed from Well Storage (gallon)	NA	7.99E-02	3.26E-02	7.51E-02	5.63E-01	7.31E-01	2.84E-01	6.36E-01	5.87E-02	2.37E-01	1.31E-02	4.78E-01	7.83E-02	4.89E-03	4.57E-02	5.53E-01
Water Removed from Sandpack (gallon)	NA	3.84E-01	0	3.61E-01	2.11E-01	0	0	0	2.82E-01	0	0	1.14E-01	0	0	2.19E-01	1.78E-01
Water Removed from Aquifer (gallon)	NA	7.26E-01	2.74E+00	7.54E-01	4.16E-01	8.59E-01	1.70E+00	1.74E+00	1.24E+00	1.42E+00	4.15E+00	2.78E-01	3.52E+00	2.38E+00	8.95E-01	1.25E+00
K (ft/day)	0.78	1.90E+00	7.54E+00	1.86E+00	5.36E-02	6.14E-02	3.99E-01	1.66E-01	3.49E+00	4.06E-01	4.19E+01	2.55E-02	2.20E+00	4.87E+01	3.10E+00	1.28E-01

Notes:
Hydraulic counductivity values calculated using the methods descibed in Walton, 1962.
* - hydraulic conductivity calculated using recovery data.

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Appendix C

Soil Vapor Investigation Reports

nationalgrid

Steven P. Stucker, C.P.G.
Senior Environmental Engineer

June 13, 2006

Mr. Bernard Franklin
New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Western Remedial Action
625 Broadway
Albany, NY 12233-7017

Re: Ogdensburg - King Street
Non-Owned Former MGP Site
Site #V00479-6
Soil Vapor Sampling Results

Dear Mr. Franklin:

This letter presents the results of soil vapor sampling conducted at National Grid's non-owned former manufactured gas plant (MGP) site (the "site") located on King Street in Ogdensburg, New York. The sampling was conducted by Blasland, Bouck & Lee, Inc., an ARCADIS company (BBL) on January 24, 2006 in accordance with the New York State Department of Environmental Conservation- (NYSDEC-) approved Remedial Investigation (RI) Work Plan, dated September 29, 2005. The objective of the soil vapor sampling activities was to evaluate the presence/absence of MGP-related vapors in unsaturated soils between the site and residential buildings located along Lake Street, east of the site.

Sampling Program

On January 24, 2006, BBL collected two soil vapor samples (VP-1 and VP-2) immediately east of the site, adjacent to the two residential buildings located along Lake Street. The locations of the samples, in relation to the site and residential buildings, are shown on Figure 1. The soil vapor sampling points were installed and soil vapor samples were collected using the procedures detailed in Attachment A of the RI Work Plan for direct-push installation techniques and steel sampling rods. The soil vapor samples were collected at depths of approximately 1-foot above the water table. To determine the approximate depth to groundwater a pilot soil boring was advanced near the two buildings prior to installing soil vapor sampling probes. The visual observations of the saturated soil conditions were used to establish the approximate water table depth and, hence, the sample collection depth. The groundwater was determined to be approximately 3 feet below grade in the area of VP-1 and 2 feet below grade in the area of VP-2, therefore the samples were collected at depths of approximately 2.5 to 3 feet below grade and 1.5 to 2 feet below grade, respectively.

Each sampling point was installed to the sampling depth using direct-push techniques to advance an assembly consisting of interconnected lengths of decontaminated 1.25-inch diameter stainless-steel drive rods, fitted with an expendable point holder and expendable point at the downhole end. A length of Teflon® tubing was attached to a twist-to-lock connector and the connector and tubing was inserted down the drive rods. The twist-to-lock connector was then threaded onto the expendable point holder to provide an air-tight seal. The entire assembly was then retracted approximately 6-inches to allow the expendable point to fall off, creating a void below the assembly for soil vapor collection. Hydrated bentonite was then applied to the ground surface around the probe rods to prevent potential short-circuiting of air from above grade. Tracer gas was used during purging and sampling activities by flooding the area at ground surface and above the bentonite seal with helium and using a helium detector to test the purge vapor for helium prior to sample collection.

A portable vacuum pump was used to purge the sample tubing of approximately 1-liter of air prior to collecting the vapor samples. The purge vapor was also measured for volatile organic compounds (VOCs) and helium using a photoionization detector (PID) and helium detector, respectively, prior to collecting the vapor sample. Once it was determined that helium gas was not detected in the purge vapor (hence, no short-circuiting from above grade), a 6-liter passivated stainless steel SUMMA® canister was used to collect the vapor sample. SUMMA® canisters were equipped with flow controllers that regulated the sampling flow rate at approximately 100 milliliters per minute. Each vapor sample was collected over an approximate 1-hour period. A duplicate sample was collected from vapor sampling point SV-1 using a stainless steel "Tee" fitting.

The collected air samples were sent to Severn Trent Laboratories located in Burlington, Vermont for analysis of the project analyte list (a total of 64 analytes) by United States Environmental Protection Agency (USEPA) Compendium Method TO-15, titled "*Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters And Analyzed By Gas Chromatography/Mass Spectrometry (GC/MS)*". The project analyte list is included Attachment A of the RI Work Plan

Sampling Results and Evaluation

The concentrations of the detected soil vapor VOCs are summarized in Table 1. Only compounds with detected concentrations are reported in the table (i.e., compounds that were analyzed for, but not detected, are not included in the table). For discussion purposes, the analytical results are compared to generic screening levels presented in *USEPA's Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils* (OSWER, November 2002). This draft guidance is used as a screening tool to evaluate if detected vapors could pose an unacceptable risk to human health. An evaluation whether a complete vapor intrusion exposure pathway exists has not been conducted. Because the vapor samples were collected adjacent to residential buildings, a risk factor of 1×10^{-6} was used for probable carcinogenic compounds. The screening values were obtained from Table 2c of the draft guidance document. The results for the samples collected from vapor monitoring points VP-1 and VP-2 were compared to the Shallow Soil Vapor Screening Values obtained from that table.

For further evaluation, the analytical results were also compared to the NYSDOH sub-slab action levels presented in the draft *Guidance for Evaluating Soil Vapor in the State of New York* (NYSDOH, February 2005). NYSDOH recommends mitigative corrective action when sub-slab vapor concentrations are above the sub-slab action levels irrespective of indoor air concentrations. To date, the NYSDOH has developed sub-slab action levels for only three compounds: 1,1,1-trichloroethane, tetracholorethene, and trichloroethene, of which none are MGP-related constituents. Of the three, only tetrachloroethene was detected in one of the samples (VP-2) and at a concentration lower than its respective action level.

A total of 23 VOC analytes (of the 64 on the project analyte list) were detected in the two soil vapor samples. Of the detected compounds, only benzene and 1,3-butadiene were detected above their respective USEPA screening values. Benzene was detected at a concentration of 3.2 micrograms per cubic meter (ug/m^3) units in VP-1 and 1,3-butadiene was detected at concentrations of 2.4 ug/m^3 in VP-1 and 2 ug/m^3 in VP-2. The USEPA screening values for benzene and 1,3-butadiene (assuming a 1 x 10^{-6} risk factor) are 3.1 ug/m^3 and 0.087 ug/m^3, respectively. The other detected analytes were generally present at concentrations ranging from 1 to 3 orders of magnitude below USEPA screening values.

Based on review of the data, the following additional observations were made:

- The detection of benzene, toluene, ethylbenzene, and total xylene (BTEX) compounds combined with the elevated concentration of 2,2,4-trimethylpentane suggests that gasoline is the likely contributor of the benzene in the VP-1 sample. This is further supported by the presence of n-alkanes,(e.g., n-hexane) and cyclohexane. The presence of these non-aromatic (non-benzene-like) compounds indicates that the volatile hydrocarbon source in this sample is not from coal tar-type products, which are almost exclusively comprised of aromatic compounds.

- The soil vapor results for VP-2 suggest that the source of volatile hydrocarbons at the VP-2 location is different than those hydrocarbons at VP-1, and that the source is probably a mid-distillate fuel with possibly some gasoline. If MGP waste is a contributor, it is considered to be at relatively trace levels.

- Some other VOCs detected in both samples include chlorofluoro compounds (e.g., dichlorodifluoromethane, trichlorofluoromethane), which are Freon components, ketones (e.g., acetone, 2-butanone), and chlorinated compounds (e.g., tetrachloroethene). These compounds have numerous possible sources, none of which are related to the manufactured gas process.

- 1,3-butadiene was detected in both samples. This compound is made from the processing of petroleum and is commonly found in exhaust from automobiles, waste incinerators, wood fires, and cigarette smoke. It is also commonly used to make synthetic rubber (i.e., for tires on cars and trucks) and plastics (including acrylics). Small amounts are also found in gasoline.

Given the information presented above, the VOCs detected in samples VP-1 and VP-2 do not appear to be associated with MGP wastes. As such, National Grid believes no further soil vapor evaluation is necessary on the residential properties east of the site.

If you have any questions, please feel free to contact me at (315) 428-5652.

Sincerely,

Steven P. Stucker
Environmental Department

Attachment

cc: Terry Young, National Grid
William Holzhauer, National Grid
Joseph Crua, New York State Department of Health
Ian Ushe, New York State Department of Health
Scott Powlin, Blasland, Bouck & Lee, Inc.
Bernie Carvel, St. Lawrence Gas Co.

Environmental Department, 300 Erie Boulevard West, Syracuse, New York 13202
T: (315) 428-5652 ■ F: (315) 460-9670 ■ steven.stucker@us.ngrid.com ■ www.nationalgrid.com

TABLE 1
SOIL VAPOR SAMPLE ANALYTICAL RESULTS - DETECTED COMPOUNDS

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

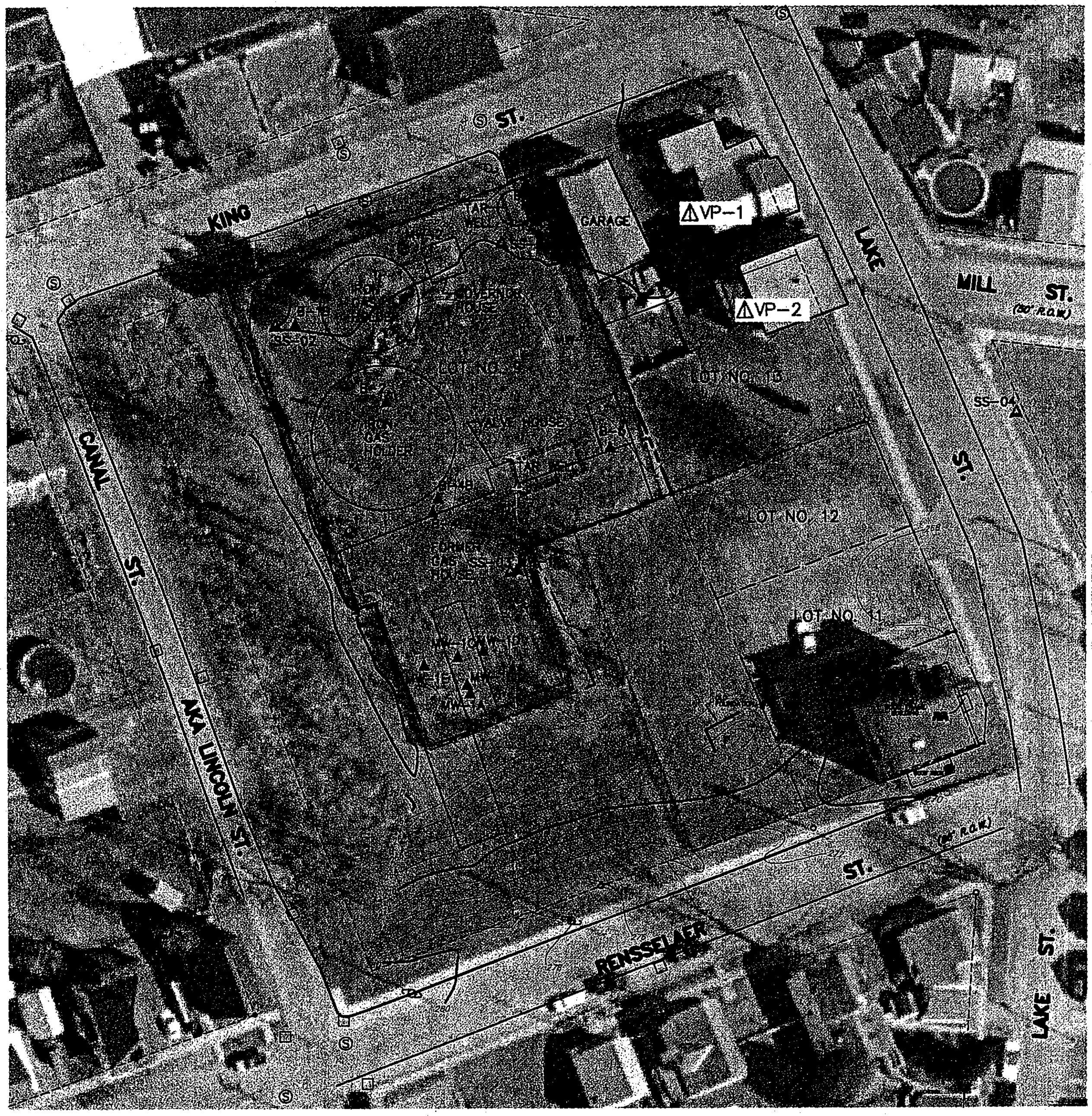
Sample ID: Date Collected:	Shallow Soil Vapor Screening Value	NYSDOH Sub-Slab Action Level	VP-1 01/24/06	VP-2 01/24/06
VOCs				
1,2,4-Trimethylbenzene	60		**7.4 [6.9]**	**11**
1,3,5-Trimethylbenzene	60		**2.3 [2.4]**	**3.6**
1,3-Butadiene	0.087		**2.4 [2.4]**	**2**
2,2,4-Trimethylpentane	- -		**260 [260]**	0.93 U
4-Ethyltoluene	- -		**5.9 [5.4]**	**8.4**
Acetone	3,500		**33 [40]**	12 U
Benzene	3.1		**3.2 [2.9]**	**2**
Chloromethane	24		2.1 U [2.1 U]	**1.8**
Cyclohexane	- -		**12 [12]**	0.69 U
Dichlorodifluoromethane	2,000		**5.9 J [5.9 J]**	**5.4 J**
Ethylbenzene	22		**4.8 [4.8]**	**5.6**
Methyl Butyl Ketone	- -		**5.7 J [5.7 J]**	2 UJ
Methyl Ethyl Ketone	10,000		**8 [7.4]**	1.5 U
Naphthalene	30		5.2 UJ [5.2 UJ]	**3.3 J**
n-Heptane	- -		1.6 U [1.6 U]	**2**
n-Hexane	2,000		**3.5 [3.5]**	**2.3**
Styrene	10,000		1.7 U [1.7 U]	**1.6**
Tetrachloroethene	8.1	1,000	2.7 U [2.7 U]	**2.5**
Toluene	4,000		**11 [11]**	**12**
Trichlorofluoromethane	7,000		**2.6 [2.4]**	**2.5**
Xylene (m,p)	70,000		**16 [17]**	**20**
Xylene (o)	70,000		**4.8 [5.2]**	**6.1**
Xylene (total)	- -		**20 [21]**	**25**

Notes:
1. All concentrations reported in micrograms per cubic meter (ug/m^3).
2. Only detected constituents are presented.
3. Detected concentrations are bolded.
4. Shaded values represent exceedences of the generic screening and risk levels (Risk factor=10^{-6}, HQ=1) Shallow Soil Vapor Screening Value from "Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils," OSWER, November 2002.
5. NYSDOH Sub-Slab Action Level from Soil Vapor/Indoor Air Matrix, "Guidance for Evaluating Soil Vapor in the State of New York," February 2005 Public Comment Draft.
6. [ ] = Duplicate Sample.
7. -- = Criteria not available.

Data Qualifiers:

J = Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than zero. The concentration given is an approximate value.

U = The compound was not detected at the indicated concentration.



LEGEND:

VP-1	APPROXIMATE LOCATION OF SOIL VAPOR SAMPLING POINT
TP-1	TEST PIT
B-1	SOIL BORING
SS-01	SURFACE SOIL SAMPLE
MW-1	MONITORING WELL
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF-WAY
	CHAINLINK FENCE
	UTILITY POLE
	CATCH BASIN
	MANHOLE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.
3. AERIAL IMAGE DOWNLOADED FROM "NEW YORK STATE GIS CLEARINGHOUSE", FLOWN IN 2003, POSITIONED IN NEW YORK STATE PLANE, EASTERN ZONE, NAD 83, US SURVEY FEET.

0 80' 160'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
SOIL VAPOR SAMPLING RESULTS

SOIL VAPOR SAMPLING LOCATIONS

BBL®
BLASLAND, BOUCK & LEE, INC.
engineers, scientists, economists

FIGURE 1

X: 36671X01.SID
L: (LAYER)
P: PAGESET/PLT-bl
6/5/06 SYR-85-NJR GJD RCA
36671010/36671B05.DWG

nationalgrid

Steven P. Stucker, C.P.G.
Senior Environmental Engineer
Environmental Department

June 29, 2007

Mr. Bernard Franklin
Environmental Engineer
Remedial Bureau C, 11th Floor
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Re: Ogdensburg – King Street
Non-Owned Former MGP Site
Site #: V00479-6
Results of Soil Vapor Intrusion Evaluation Sampling

Dear Mr. Franklin:

This letter presents laboratory analytical results for additional soil vapor intrusion (SVI) investigation activities performed in connection with the Ogdensburg (King Street) National Grid Non-Owned former manufactured gas plant (MGP). The additional SVI sampling was performed in accordance with the SVI Work Plan, which was presented in a letter from National Grid to New York State Department of Environmental Conservation (NYSDEC) dated February 8, 2007 (the "SVI Work Plan") and approved by NYSDEC in a letter dated February 16, 2007.

In accordance with the SVI Work Plan, SVI evaluation activities included the collection of the following samples:

- Three ambient air samples, one upwind of the building at 2 King Street, one downwind of the garage/shed located at 2 King Street, and one downwind of the garage located at 4 King Street (locations AA-1 through AA-3, respectively, as shown on Figure 1);

- Two indoor air samples from the lowest level of the building at 2 King Street, one from the basement area and one from the crawlspace area (locations IA-1 and IA-2, respectively, as shown on Figure 2);

- An additional soil vapor sample near previous sampling location VP-1 (location VP-1A, as shown on Figure 1); and

- One subsurface soil vapor sample and a blind duplicate sample at a location on the former St. Lawrence Gas property where previous remedial investigation (RI) soil sample results indicate the presence of shallow coal tar in/near a former tar well (location VP-3, as shown on Figure 1).

- Three groundwater samples, one beneath the earthen floor of the building at 2 King Street (location GW-1, as shown on Figure 2), and one each from monitoring wells MW-11 and MW-12R (shown on Figure 1). In addition, a blind duplicate sample was collected at monitoring well MW-12R.

Soil vapor, indoor air, and ambient air sample collection was performed by ARCADIS of New York, Inc. (ARCADIS BBL), in accordance with NYSDEC-approved sampling procedures contained as appendices in National Grid's draft "Standard Operating Procedures for Soil Vapor Intrusion Evaluation at National Grid MGP Sites in New York State", dated September 2006 (the "Draft National Grid SOP"). Each sample was collected using a passivated 6-liter stainless-steel canister with an attached pre-set flow regulator. The laboratory provided batch-certified clean canisters and flow regulators pre-set to provide uniform sample collection over an approximate 8-hour sampling period (e.g., flow rate of approximately 12.5 milliliters per minute [mL/min]). Photographs taken by ARCADIS BBL during the sampling activities are included as Attachment A. Copies of the field sampling logs are presented as Attachment B.

The NYSDOH Indoor Air Quality Questionnaire, which was completed in connection with the basement/crawlspace sampling at 2 King Street, is included in Attachment C. As noted on the questionnaire, no volatile organic compound (VOC) containing products were observed in the basement at the time of sample collection. Per discussions with the homeowner, a large number of miscellaneous stored items (e.g., old tires, window air conditioning unit) were removed from the backyard and the basement and disposed of prior to the arrival of sampling personnel.

The groundwater sample beneath the building at 2 King Street was collected using a temporary well point installed approximately 2 feet beneath the earthen floor. The well point was constructed using ¾-inch diameter schedule 40 PVC with a 2-foot well screen. This sample was collected using a dedicated polyethylene bailer. Monitoring wells MW-11 and MW-12R were sampled in accordance with the procedures presented in the NYSDEC-approved "Generic Site Characterization/IRM Work Plan for Site Investigations at Non-Owned Former MGP Sites" and supporting appendices (Field Sampling Plan, and Quality Assurance Project Plan), dated November 2002.

Samples were submitted to Alpha Wood Hole Group Laboratory (AWHGL) in Raynham, Massachusetts, which is a NYSDOH ELAP-certified laboratory. Soil vapor, indoor air, and ambient air samples were submitted for "Forensic United States Environmental Protection Agency (USEPA) Compendium Method TO-15" analysis. Groundwater samples were submitted for PIANO analysis, which consists of analyzing the samples for paraffin (P), isoparaffin (I), aromatic (A) naphthene (N), and olefin (O) compounds by a modified USEPA SW-846 Method 8240. Data validation was performed by NewFields Environmental Forensics Practice, LLC (NewFields). The data validation reports, including the laboratory analytical data reports, are provided on the attached compact disc. Validated soil vapor, indoor air, and ambient air laboratory analytical results for detected VOCs are presented in Table 1. Validated groundwater laboratory analytical results for detected VOCs are presented in Table 2.

Several constituents were identified in the groundwater, soil vapor, indoor air, and ambient air samples. NewFields evaluated the forensic hydrocarbon signatures of the samples and compared the compositional fingerprints to develop conclusions regarding potential sources, effects of subsurface processes, and relationships between indoor and subsurface vapors. Based on NewFields' evaluation of the data, the groundwater, soil vapor, indoor air, and ambient air samples all had different signatures. Relevant findings of NewFields' forensic evaluation are summarized in the following bullets:

- Groundwater sampled from the well point in the basement (GW-1) contained trace levels of aromatic compounds unrelated to the MGP;
- Groundwater sampled from monitoring well MW-11 did not contain VOCs at detectable concentrations;
- Groundwater from MW-12R contains elevated BTEX and naphthalene, likely from a petroleum source;
- Soil vapor samples VP-1A and VP-3 contained a hydrocarbon signature, but the signature did not resemble coal tar;
- Ambient air samples AA-1, AA-2, and AA-3 contained trace levels of VOCs likely associated with gasoline; and
- Indoor air samples IA-1 and IA-2 contained trace levels of VOCs likely associated with gasoline and combustion byproducts.

Details of NewFields' evaluation and findings were presented in a letter from NewFields to ARCADIS BBL dated May 16, 2007, which is included as Attachment D.

New York State does not currently have standards, criteria, or guidance values (SCGs) for concentrations of compounds in subsurface vapors (either soil vapor or sub-slab vapor). NYSDOH guidance recommends comparing indoor air concentrations to typical background ("Upper Fence") values observed by NYSDOH in a study of single-family homes, as referenced in Section 3.2.4 of their guidance document. The concentrations measured in indoor air samples IA-1 and IA-2 are all less than or comparable to the background concentrations provided in the NYSDOH Soil Vapor Intrusion Guidance. The presence of several constituents (including 1,2-DCE, 1,3-butadiene, benzene, dodecane, pentane and isopentane) in indoor air samples at levels at or above the soil vapor or ambient air samples, suggests a source (or sources) inside the building.

Conclusions

Based on the investigation results, the indoor air is not being impacted by MGP-related constituents that would cause the indoor air levels to exceed typical indoor air background levels, and therefore no further evaluation or actions are needed at this property.

If you have any questions or require additional information, please feel free to contact me at (315) 428-5652.

Sincerely,

Steven P. Stucker
Environmental Department

Attachments

cc: George Heitzman, P.E., New York State Department of Environmental Conservation
Richard Fedigan, New York State Department of Health
Ian Ushe, New York State Department of Health
Terry Young, P.E., National Grid
William Holzhauer, Esq., National Grid
Scott Powlin, ARCADIS BBL
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TABLE 1
SOIL VAPOR, INDOOR AIR, & AMBIENT AIR ANALYTICAL RESULTS FOR DETECTED VOCS (ug/m^3)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

	Typical Background Indoor Air Concentrations	VOC Analytical Results (ug/m^3)						
		Ambient (Outdoor) Air			Indoor Air		Soil Vapor	
Sample ID:		AA-1	AA-2	AA-3	IA-1	IA-2	VP-1A	VP-3
Detected Volatile Organic Compounds (VOCs)								
1,2,4-Trimethylbenzene	9.8	<0.491	<0.491	0.128 J	0.619	0.806	6.36	2.98 J [2.3 J]
1,2-Dichloroethane	0.37	<0.404	<0.404	<0.404	0.384 J	0.421	<2.76	<2.73 [<4.02]
1,2-Dimethyl-4-ethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	0.137 J	<3.74	<3.7 [<5.46]
1,3,5-Trimethylbenzene	3.9	<0.491	<0.491	<0.491	0.157 J	0.201 J	1.54 J	1.32 J [<4.89]
1,3-Butadiene	- -	<0.221	<0.221	<0.221	2.4	3.34	<1.51	<1.49 [<2.2]
1,3-Dimethyl-5-ethylbenzene	- -	<0.549	<0.549	<0.549	0.148 J	0.181 J	<3.74	<3.7 [<5.46]
1-Decene	- -	<0.573	<0.573	<0.573	0.43 J	0.55 J	<3.91	<3.86 [6.1]
1-Heptene	- -	<0.401	<0.401	<0.401	0.285 J	0.329 J	<2.74	<2.7 [<3.99]
1-Hexene	- -	<0.344	<0.344	<0.344	0.499	0.636	5.84	4.2 [4.11]
1-Methyl-2-ethylbenzene	- -	<0.491	<0.491	<0.491	0.192 J	0.236 J	1.34 J	0.861 J [<4.89]
1-Methyl-3-ethylbenzene	- -	<0.491	<0.491	<0.491	0.427 J	0.526	4.25	1.26 J [<4.89]
1-Methyl-4-isopropylbenzene	- -	<0.549	<0.549	<0.549	0.346 J	0.395 J	<3.74	<3.7 [<5.46]
1-Methylnaphthalene	- -	0.366 J	<0.581	0.279 J	0.209 J	0.215 J	<3.96	<3.92 [<5.78]
1-Octene	- -	<0.459	<0.459	<0.459	0.17 J	0.197 J	4.6	4.88 [3.56 J]
1-Pentene	- -	<0.287	<0.287	<0.287	0.381	0.573	5.9	4.44 [3.48]
2,2,4-Trimethylpentane (Isooctane)	- -	<0.467	<0.467	0.345 J	0.275 J	0.21 J	1,880 D	876 [817]
2,3,3-Trimethylpentane	- -	<0.467	<0.467	<0.467	0.252 J	0.252 J	226	140 [115]
2,3,4-Trimethylpentane	- -	<0.467	<0.467	<0.467	0.163 J	0.126 J	177	108 [88.6]
2,3-Dimethylbutane	- -	<0.352	<0.352	<0.352	0.18 J	0.208 J	<2.4	<2.37 [<3.5]
2,3-Dimethylhexane	- -	<0.467	<0.467	<0.467	<0.467	<0.467	9.42	6.01 [4.55 J]
2,3-Dimethylpentane	5.2	<0.409	<0.409	<0.409	0.111 J	0.102 J	20.6	8.47 [8.64]
2,4-Dimethyhexane / 2,2,3-Trimethylpentane	- -	<0.934	<0.934	<0.934	<0.934	<0.934	115	66 [54.3]
2,5-Dimethylhexane	- -	<0.467	<0.467	<0.467	<0.467	<0.467	27.7	15.5 [11.9]
2-Methyl-1-butene	- -	<0.287	<0.287	<0.287	0.631	0.757	1.5 J	0.85 J [1.28 J]

See Notes on Page 4.

TABLE 1

SOIL VAPOR, INDOOR AIR, & AMBIENT AIR ANALYTICAL RESULTS FOR DETECTED VOCS (ug/m^3)

VAPOR INTRUSION EVALUATION

NATIONAL GRID

OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE

OGDENSBURG, NEW YORK

	Typical Background Indoor Air	VOC Analytical Results (ug/m^3)						
		Ambient (Outdoor) Air			Indoor Air		Soil Vapor	
Sample ID:	Concentrations	AA-1	AA-2	AA-3	IA-1	IA-2	VP-1A	VP-3
Detected Volatile Organic Compounds (VOCs)								
2-Methylheptane	- -	<0.467	<0.467	<0.467	0.252 J	0.154 J	0.828 J	<3.15 [<4.64]
2-Methylhexane	- -	0.111 J	0.119 J	0.119 J	1.26	0.287 J	<2.79	<2.76 [8.56]
2-Methylnaphthalene	- -	0.273 J	<0.581	0.227 J	0.169 J	0.244 J	<3.96	<3.92 [<5.78]
2-Methylpentane	- -	0.271 J	0.328 J	0.31 J	0.736	0.173 J	<2.4	0.855 J [<3.5]
2-Pentene (cis)	- -	<0.287	<0.287	<0.287	0.272 J	0.298	0.84 J	0.599 J [<2.85]
2-Pentene (trans)	- -	<0.287	<0.287	<0.287	0.467	0.539	2.19	1.47 J [1.54 J]
3-Ethylhexane	- -	<0.467	<0.467	<0.467	<0.467	<0.467	0.987 J	<3.15 [<4.64]
3-Methylheptane	- -	<0.467	<0.467	<0.467	<0.467	<0.467	2.48 J	1.79 J [1.3 J]
3-Methylhexane	- -	<0.409	0.147 J	0.152 J	0.36 J	0.369 J	3.32	5.08 [4.12]
3-Methylpentane	- -	0.113 J	0.141 J	0.12 J	0.409	0.377	<2.4	0.736 J [<3.5]
4-Ethyltoluene	- -	<0.491	<0.491	<0.491	0.192 J	0.196 J	2.18 J	<3.31 [<4.89]
Benzene	13	0.498	0.517	0.501	1.95	2.19	1.5 J	8.26 [7.78]
Cyclohexane	6.3	<0.344	<0.344	<0.344	0.113 J	0.131 J	<2.35	0.603 J [<3.42]
Cyclopentane	- -	<0.287	<0.287	<0.287	0.189 J	0.152 J	<1.96	<1.93 [<2.85]
Decane	15	<0.582	<0.582	<0.582	0.413 J	0.419 J	27.5	9.17 [5.38 J]
Dodecane	9.2	0.682 J	0.174 J	0.369 J	2.88	3.01	1.23 J	3.57 J [4.85 J]
Ethylbenzene	6.4	0.108 J	<0.434	0.113 J	0.599	0.738	9.02	8.6 [6.6]
Indane	- -	<0.483	<0.483	<0.483	0.222 J	0.227 J	1.81 J	<3.26 [<4.8]
Indene	- -	<0.475	<0.475	<0.475	0.147 J	<0.475	<3.24	<3.2 [<4.72]
Isopentane	- -	0.702	1	<0.295	12.1	11	<2.01	<1.99 [<2.93]
m,p-Xylene	11	0.312 J	0.278 J	0.321 J	1.83	2.35	15.8	3.13 [2.55 J]
Methylcyclohexane	4.5	<0.401	<0.401	<0.401	<0.401	0.1 J	<2.74	0.784 J [<3.99]
Methylcyclopentane	- -	<0.344	<0.344	0.107 J	0.244 J	0.237 J	<2.35	<2.32 [<3.42]
Naphthalene	- -	0.194 J	<0.524	<0.524	0.351 J	0.288 J	<3.57	<3.53 [<5.21]

See Notes on Page 4.

TABLE 1
SOIL VAPOR, INDOOR AIR, & AMBIENT AIR ANALYTICAL RESULTS FOR DETECTED VOCS (ug/m^3)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

	Typical Background Indoor Air Concentrations	VOC Analytical Results (ug/m^3)						
		Ambient (Outdoor) Air			Indoor Air		Soil Vapor	
Sample ID:		AA-1	AA-2	AA-3	IA-1	IA-2	VP-1A	VP-3
Detected Volatile Organic Compounds (VOCs)								
n-Heptane	18	0.115 J	0.115 J	0.123 J	0.328 J	0.336 J	3.07	2.46 J [2.08 J]
n-Hexane	14	0.292 J	0.236 J	0.345 J	0.609	1.17	1.85 J	1.38 J [1.61 J]
Nonane	7.9	<0.524	<0.524	<0.524	0.304 J	0.294 J	3.61	6.99 [4.95 J]
n-Propylbenzene	1.5	<0.491	<0.491	<0.491	0.133 J	0.142 J	1.34 J	<3.31 [<4.89]
Octane	5.2	0.131 J	<0.467	<0.467	0.205 J	0.187 J	3.37	3.12 J [2.46 J]
o-Xylene	7.1	0.135 J	0.113 J	0.135 J	0.607	0.751	5	0.848 J [<4.32]
Pentane	- -	0.324	0.425	0.366	2.46	2.34	3.88	4.19 [5.08]
Styrene	1.4	<0.426	<0.426	<0.426	0.451	0.626	2.09 J	4.88 [3.68 J]
Toluene	57	0.542	0.527	0.569	6.1	7.23	21.7	17 [12.8]
Tridecane	- -	0.678 J	0.429 J	1.56	1.47	1.95	3.03 J	5.79 [7.5]
Undecane	12	0.211 J	<0.639	<0.639	4.76	5.52	21.6	27.3 [20.1]

See Notes on Page 4.

TABLE 1
SOIL VAPOR, INDOOR AIR, & AMBIENT AIR ANALYTICAL RESULTS FOR DETECTED VOCS (ug/m^3)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

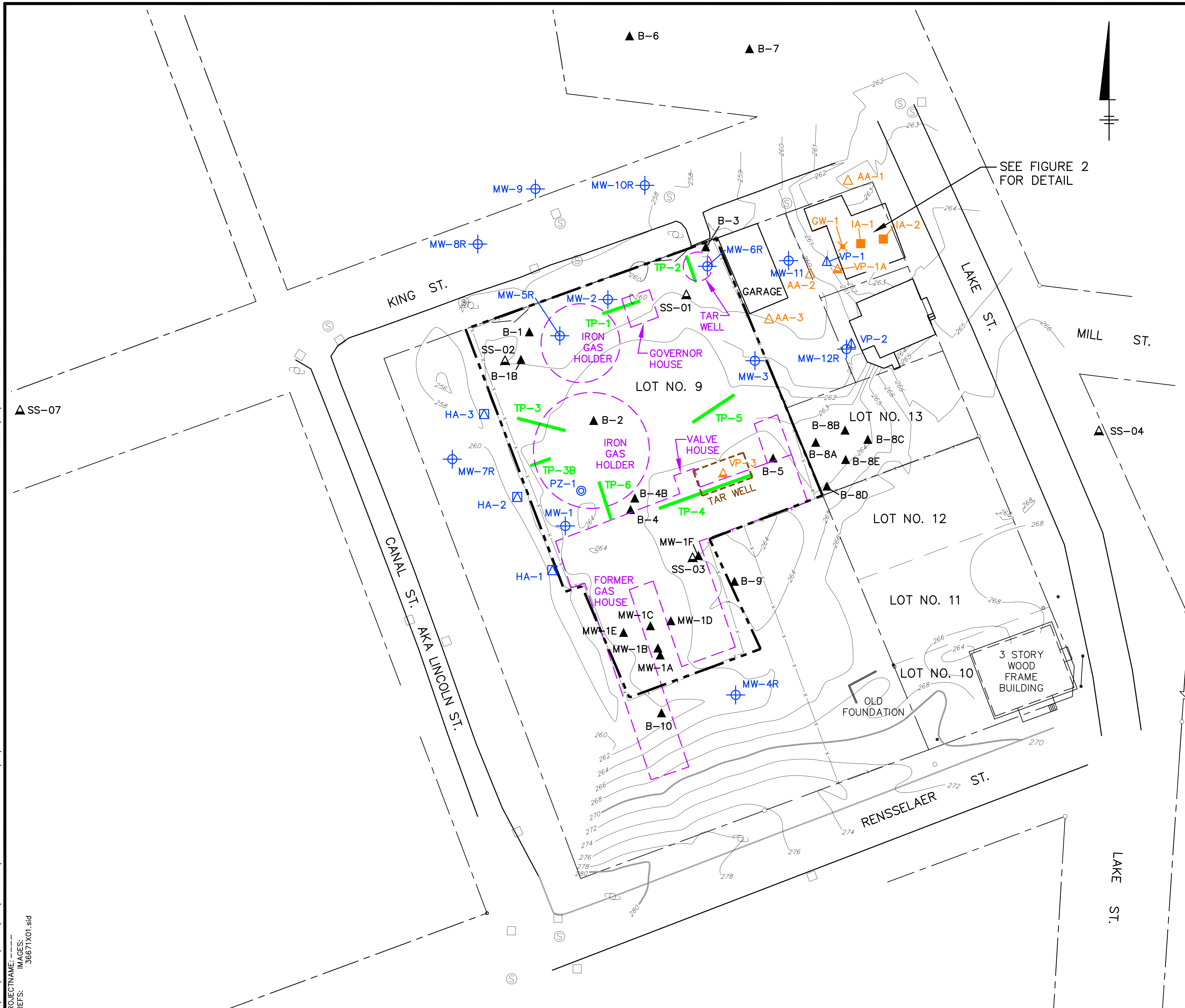
1. Samples were collected by ARCADIS BBL on March 28, 2007.
2. Samples were analyzed for volatile organic compounds (VOCs) by Alpha Wood Hole Group (AWHGL) in Raynham, Massachusetts using Forensic United States Environmental Protection Agency (USEPA) Compendium Method TO-15.
3. Sample designations indicate the following:
   - "VP" = soil vapor sample;
   - "IA" = indoor air sample; and
   - "AA" = ambient (outdoor) air sample.
4. Typical background indoor air concentrations are the upper fence of values observed by the NYSDOH during a 2003 study of residential homes, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006).
5. Concentrations reported in micrograms per cubic meter (ug/m^3).
6. < = Not detected at or above the associated reporting limit.
7. D - Analyte was quantitated at a secondary dilution.
8. J - Indicates an estimated value.
9. -- = Comparison value not available.
10. Field duplicate sample results are presented in brackets.
11. Results have been validated by NewFields Environmental Forensics Practice, LLC.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS FOR DETECTED VOCS (ug/L)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Sample ID:	NYSDEC TOGS 1.1.1 Water Guidance Values	GW-1	MW-11	MW-12R
Detected Volatile Organic Compounds (VOCs)				
1,2,4,5-Tetramethylbenzene	- -	0.47 J	<2	<10 [<10]
1,2,4-Trimethylbenzene	- -	1.3 J	<2	4.8 J [4.6 J]
1,2-Dimethyl-3-ethylbenzene	- -	0.22 J	<2	<10 [<10]
1,2-Dimethyl-4-ethylbenzene	- -	1.1 J	<2	<10 [<10]
1,3,5-Trimethylbenzene	- -	0.99 J	<2	<10 [<10]
1,3-Dimethyl-4-ethylbenzene	- -	0.35 J	<2	<10 [<10]
1,3-Dimethyl-5-ethylbenzene	- -	0.95 J	<2	<10 [<10]
1,4-Dimethyl-2-ethylbenzene	- -	0.54 J	<2	<10 [<10]
1-Methyl-2-ethylbenzene	- -	0.69 J	<2	<10 [<10]
1-Methyl-2-propylbenzene	- -	0.32 J	<2	<10 [<10]
1-Methyl-3-ethylbenzene	- -	0.79 J	<2	<10 [<10]
1-Methyl-3-propylbenzene	- -	0.55 J	<2	<10 [<10]
1-Methyl-4-propylbenzene	- -	0.29 J	<2	<10 [<10]
1-Methylnaphthalene	- -	<2	<2	2.9 J [2.8 J]
3-Methylthiophene	- -	<2	<2	1 J [1.1 J]
4-Ethyltoluene	- -	0.4 J	<2	<10 [<10]
Benzene	1	<2	<2	3,800 D [3,800 D]
Benzothiophene	- -	<2	<2	12 [11]
Ethylbenzene	5	<2	<2	52 [53]
Indane	- -	0.19 J	<2	47 [47]
Isopentane	- -	<2	<2	6.8 JB [<10]
m,p-Xylene	- -	0.36 J	<4	19 J [19 J]
Naphthalene	10	<2	<2	70 [68]
o-Xylene	- -	<2	<2	30 [31]
Styrene	5	<2	<2	2.6 J [2.6 J]
Thiophene	- -	<2	<2	90 [90]
Toluene	5	<2	<2	13 [12]

Notes:
1. Samples were collected by ARCADIS BBL on March 28, 2007.
2. Samples were analyzed for volatile organic compounds (VOCs) by Alpha Wood Hole Group (AWHGL) in Raynham, Massachusetts using United States Environmental Protection Agency (USEPA) SW-846 Method 8240.
3. Sample designations indicate the following:
   - "GW" = temporary monitoring well
   - "MW" = permanent monitoring well
4. "NYSDEC TOGS 1.1.1 Water Guidance Values" are presented in Table 1 of the New York State Department of Environmental Conservation (NYSDEC) Technical & Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC, June 2004).
5. Concentrations reported in micrograms per liter (ug/L).
6. < = Not detected at or above the associated reporting limit.
7. D - Analyte was quantitated at a secondary dilution.
8. J - Indicates an estimated value.
9. -- = Comparison value not available.
10. Results have been validated by NewFields Environmental Forensics Practice, LLC.



LEGEND:

AA-1	AMBIENT AIR SAMPLING POINT
VP-3	SOIL VAPOR SAMPLING POINT
IA-1	INDOOR AIR SAMPLING LOCATION
GW-1	TEMPORARY GROUNDWATER SAMPLING POINT
MW-10	MONITORING WELL
VP-1	PREVIOUS SOIL VAPOR SAMPLING POINT
PZ-1	PIEZOMETER
HA-1	PREVIOUS HAND-AUGER BORING
TP-1	PREVIOUS TEST PIT
B-1	PREVIOUS SOIL BORING
SS-01	PREVIOUS SURFACE SOIL SAMPLE
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF WAY
	CHAINLINK FENCE
	UTILITY POLE
	CATCH BASIN
	MANHOLE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.

0 60' 120'
GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
ADDITIONAL SVI EVALUATION REPORT

SAMPLING LOCATIONS

ARCADIS BBL
infrastructure, environment, facilities

FIGURE
1

[SYR-85-LEAD] SYR-85-RCB KLS WJJ L: ON=*, OFF=REF*
G:\CAD\ACTIVE\-DWG\ACT\3667011\3667IP03.DWG SAVED: 5/31/2007 3:22 PM LAYOUT:1 PAGESETUP:---- PENTABLE:PLTFULL.CTB PRINTED: 5/31/2007 3:22 PM BY: WJONES
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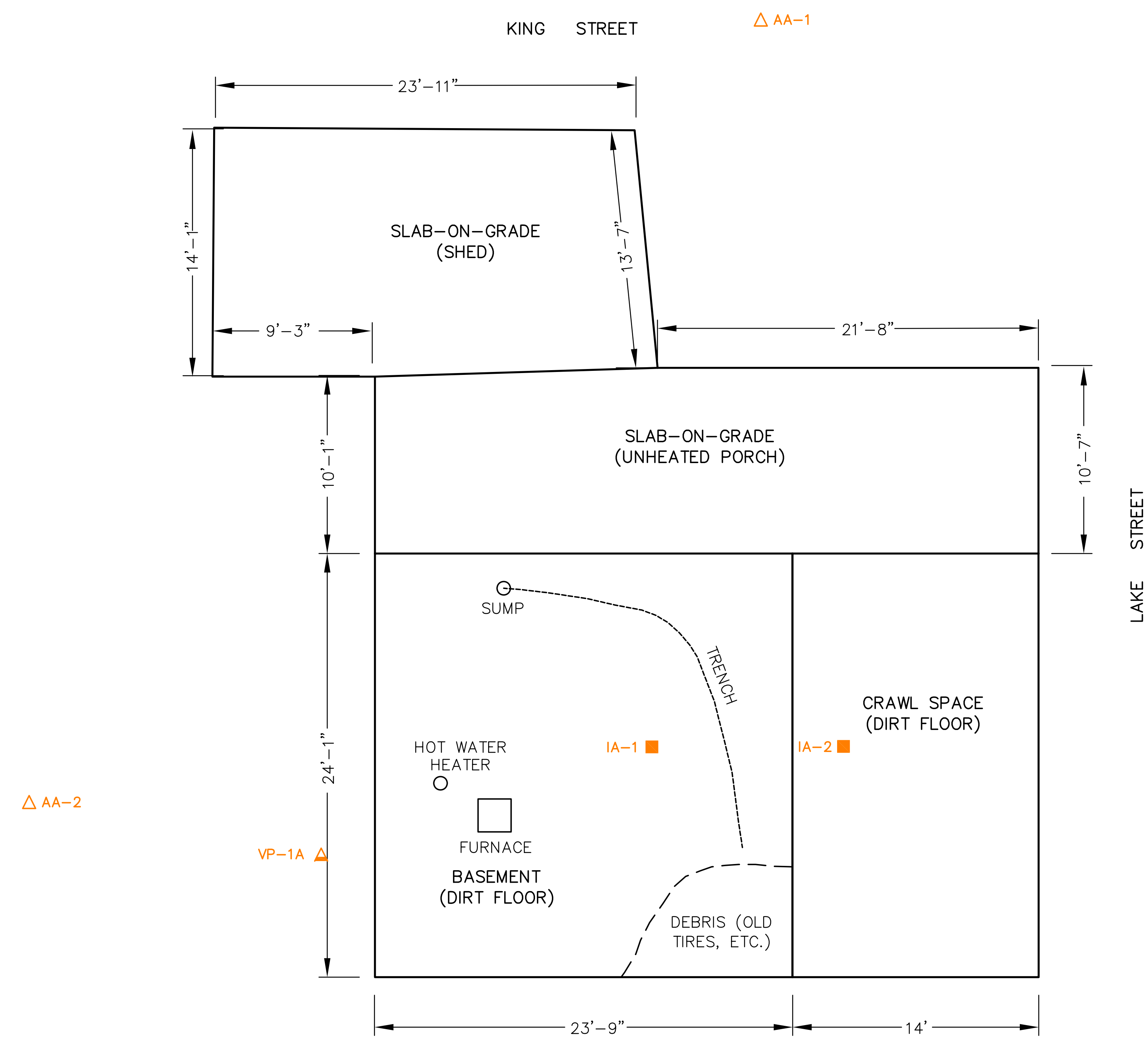


LEGEND:

AA-1 △	AMBIENT AIR SAMPLING POINT
VP-1A △	SOIL VAPOR SAMPLING POINT
IA-1 ■	INDOOR AIR SAMPLING LOCATION

NOTE:

BUILDING DIMENSIONS AND SAMPLING LOCATIONS ARE BASED ON MEASUREMENTS BY SAMPLING PERSONNEL AND ARE APPROXIMATE.

0 8' 16'
APPROXIMATE GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
ADDITIONAL SVI EVALUATION REPORT

DETAIL OF SAMPLING LOCATIONS AT 2 KING STREET

ARCADIS BBL
infrastructure, environment, facilities

FIGURE
2

Attachment A

Photographs of Sampling in Progress

ATTACHMENT A
MARCH 28, 2007 – ADDITIONAL SOIL VAPOR INTRUSION EVALUATION SAMPLING
NATIONAL GRID NON-OWNED FORMER MANUFACTURED GAS PLANT
KING STREET, OGDENSBURG, NEW YORK

Photo 1
Sampling Location VP-1A
Sample Point Installation – Adjacent to 2 King Street

Photo 2
Sampling Location VP-1A
Bentonite Seal Installation – Adjacent to 2 King Street

Photo 3
Sampling Location VP-1A
Sample Collection – Adjacent to 2 King Street

Photo 4
Sampling Location VP-3
Sample Collection – On the Former St. Lawrence Gas Property

Photo 5
Sampling Location IA-1
Sample Collection – Basement of the Residence at 2 King Street

Photo 6
Basement of the Residence at 2 King Street
Miscellaneous Debris (Old Tires, etc.) in the Southeast Corner

Photo 7
Basement of the Residence at 2 King Street
Sump and Miscellaneous Debris in the Northwest Corner

Photo 8
Sampling Location IA-2
Sample Collection – Crawlspace Area of the Residence at 2 King Street

Photo 9
Sampling Location AA-1
Sample Collection – Upwind of the Residence at 2 King Street

Photo 10
Sampling Location AA-2
Sample Collection – Downwind of the Garage/Shed Located at 2 King Street

Photo 11
Sampling Location AA-3
Sample Collection – Downwind of the Garage at 4 King Street

ARCADIS BBL

Attachment B

Field Sampling Logs

nationalgrid

Soil Vapor (Canister) Sample Collection Field Form

Project #	36671	Consultant	ARCADIS BBL
Project Name	Ogdensburg - King St	Collector	Chris Angier Shawn Skelly

Sample ID	VP-1a	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	0940	Start Pressure ("Hg)	> -30
End Date/Time	1740	End Pressure ("Hg)	- 5
Canister ID	2997	End pressure > "zero"?	Y
Flow controller ID	FC0234	Sampling duration (intended)	8 hr
Associated ambient air sample ID	AA - 2	Depth of sample point below grade	24 "

Tubing type used: Poly Length of tubing: 200 cm Tubing volume: 63 cc

Volume purged: 120 cc @ 1 min 1 to 3 volumes purged @ < 200cc/min?: Y

Chamber tracer gas conc.: 10% Tracer gas conc. during purging: 0 ppm

Weather Conditions during Probe Installation:

Air temperature (°F)	48	Rainfall	—	Wind direction	W
Barometric pressure	30.1			Wind speed (mph)	5 -10 mph

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Weather Conditions at Start of Sampling:

Air temperature (°F)	32	Rainfall	—	Wind direction	NW
Barometric pressure	30.4			Wind speed (mph)	10 - 15 mph

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments:

nationalgrid

Soil Vapor (Canister) Sample Collection Field Form

Project # 36671
Project Name Ogdensburg - King St
Consultant ARCADIS BBL
Collector Chris Angier / Shawn Skelly

Sample ID VP-3 / DUP-1
Vacuum gauge "zero" ("Hg) 0 / -3
Start Date/Time 0942
Start Pressure ("Hg) -27.5 / -26
End Date/Time 1720
End Pressure ("Hg) -2.5 / -14
Canister ID 2984 / 2981
End pressure > "zero"? Y / Y
Flow controller ID FC0235 / FC0226
Sampling duration (intended) 8 hr
Associated ambient air sample ID AA-3
Depth of sample point below grade 36"

Tubing type used Poly
Length of tubing 230 cm
Tubing volume 73 cc
Volume purged 120 cc @ 1 min
1 to 3 volumes purged @ < 200cc/min? Y
Chamber tracer gas conc. 5 %
Tracer gas conc. during purging 0 ppm

Weather Conditions during Probe Installation:
Air temperature (°F) 48
Rainfall —
Wind direction W
Barometric pressure 30.1
Wind speed (mph) 5-10 mph
Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Weather Conditions at Start of Sampling:
Air temperature (°F) 32
Rainfall —
Wind direction NW
Barometric pressure 30.4
Wind speed (mph) 10-15 mph
Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Site Plan showing sample location, buildings, landmarks, potential soil vapor and outdoor air sources, preferential pathways

Comments:

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project #	36671	Consultant	ARCADIS BBL
Project Name	Ogdensburg - King St	Collector	Chris Angier Shawn Skelly

Sample ID	IA-1	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	0940	Start Pressure ("Hg)	> -30
End Date/Time	~~8~~1740	End Pressure ("Hg)	-5
Canister ID	2956	End pressure > "zero"?	Y
Flow controller ID	FC0695	Sampling duration (intended)	8 hr
Associated ambient air sample ID	AA-1 + AA-2	Associated sub-slab vapor sample ID	

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ NA min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling:

Air temperature (°F)	32	Rainfall	—	Wind direction	NW
Barometric pressure	30.4	Relative humidity	55%	Wind speed (mph)	10-15

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 70 Indoor relative humidity (%)

Building Survey and Chemical Inventory Form Completed? Photograph IDs

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways

Comments:

nationalgrid

Indoor Air (Canister) Sample Collection Field Form

Project #	36671	Consultant	ARCADIS BBL
Project Name	Ogdensburg - King St	Collector	Chris Angier Shawn Skelly

Sample ID	IA-2	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	0936	Start Pressure ("Hg)	-29
End Date/Time	1736	End Pressure ("Hg)	-5
Canister ID	2983	End pressure > "zero"?	Y
Flow controller ID	FC0244	Sampling duration (intended)	8 hr
Associated ambient air sample ID	AA-1 + AA-2	Associated sub-slab vapor sample ID	

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ NA min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling:

Air temperature (°F)	32	Rainfall	—	Wind direction	NW
Barometric pressure	30.4	Relative humidity	55 %	Wind speed (mph)	10-15

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Indoor air temp (°F) 70 Indoor relative humidity (%)

Building Survey and Chemical Inventory Form Completed? Photograph IDs

Floor Plan showing sample location, HVAC equipment, indoor air sources, preferential pathways

Comments:

nationalgrid

Ambient Air (Canister) Sample Collection Field Form

Project #	36671	Consultant	ARCADIS BBL
Project Name	Ogdensburg - King St	Collector	Chris Angier Shawn Skelly

Sample ID	AA-1	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	0941	Start Pressure ("Hg)	> -30
End Date/Time	1747	End Pressure ("Hg)	-7
Canister ID	2955	End pressure > "zero"?	Y
Flow controller ID	FC0246	Sampling duration (intended)	8 hr

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ NA min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling:

Air temperature (°F)	32	Rainfall	—	Wind direction	NW
Barometric pressure	30.4	Relative humidity	55%	Wind speed (mph)	10-15

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Site Plan showing sample location, building(s) being sampled, building HVAC inlet, outdoor air sources, wind direction

Comments:

nationalgrid

Ambient Air (Canister) Sample Collection Field Form

Project #	36671	Consultant	ARCADIS BBL
Project Name	Ogdensburg - King St	Collector	Chris Angier Shawn Skelly

Sample ID	AA-2	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	0941	Start Pressure ("Hg)	> -30
End Date/Time	1747	End Pressure ("Hg)	-5
Canister ID	2954	End pressure > "zero"?	Y
Flow controller ID	FC0207	Sampling duration (intended)	8 hr

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ NA min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling:

Air temperature (°F)	32	Rainfall	—	Wind direction	NW
Barometric pressure	30.4	Relative humidity	55 %	Wind speed (mph)	10 - 15

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Site Plan showing sample location, building(s) being sampled, building HVAC inlet, outdoor air sources, wind direction

Comments:

nationalgrid

Ambient Air (Canister) Sample Collection Field Form

Project #	36671	Consultant	ARCADIS BBL
Project Name	Ogdensburg - King St	Collector	Chris Angier Shawn Skelly

Sample ID	AA-3	Vacuum gauge "zero" ("Hg)	0
Start Date/Time	0941	Start Pressure ("Hg)	-29
End Date/Time	1741	End Pressure ("Hg)	-3.5
Canister ID	2982	End pressure > "zero"?	Y
Flow controller ID	FC0102	Sampling duration (intended)	8 hr

Tubing type used NA Length of tubing NA cm Tubing volume NA cc

Volume purged NA cc @ NA min 1 to 3 volumes purged @ < 200cc/min? NA

Weather Conditions at Start of Sampling:

Air temperature (°F)	32	Rainfall	—	Wind direction	NW
Barometric pressure	30.4	Relative humidity	55%	Wind speed (mph)	10-15

Substantial changes in weather conditions during sampling or over the past 24 to 48 hrs:

Site Plan showing sample location, building(s) being sampled, building HVAC inlet, outdoor air sources, wind direction

Comments:

ARCADIS BBL

Attachment C

NYSDOH Indoor Air Quality Questionnaire

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Chris Angier Date/Time Prepared June 11, 2007

Preparer's Affiliation ARCADIS BBL Phone No. 315.446-2570

Purpose of Investigation Evaluate potential soil vapor intrusion

1. OCCUPANT:

Interviewed: Y / N

Last Name: Durham First Name: Gladys

Address: 2 King Street

County: St Lawrence

Home Phone: (315) 393-2104 Office Phone: N/A

Number of Occupants/persons at this location 4 Age of Occupants 2-55

2. OWNER OR LANDLORD: (Check if same as occupant ✓)

Interviewed: Y / N

Last Name: ______ First Name: ______

Address: ______

County: ______

Home Phone: ______ Office Phone: ______

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential	School	Commercial/Multi-use
Industrial	Church	Other: ______

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other:______________

If multiple units, how many? ________

If the property is commercial, type?

Business Type(s) ____________________________________

Does it include residences (i.e., multi-use)? Y / N   If yes, how many? ______

Other characteristics:

Number of floors______   Building age______

Is the building insulated? Y / N   How air tight? Tight / Average / Not Tight

4. AIRFLOW Not evaluated

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

____

____

____

Airflow near source

____

____

____

Outdoor air infiltration

____

____

____

Infiltration into air ducts

____

____

____

5. **BASEMENT AND CONSTRUCTION CHARACTERISTICS** (Circle all that apply)

a. Above grade construction: wood frame concrete stone brick

b. Basement type: full crawlspace slab other ________

c. Basement floor: concrete dirt stone other ________

crawlspace only

d. Basement floor: uncovered covered covered with plastic sheeting

e. Concrete floor: NA unsealed sealed sealed with ____________

f. Foundation walls: poured block stone other ________

g. Foundation walls: unsealed sealed sealed with ____________

h. The basement is: wet damp dry moldy

i. The basement is: finished unfinished partially finished

j. Sump present? Y / N

k. Water in sump? Y / N / not applicable

~2' bgs at back of house, ~6' bgs near front of house

Basement/Lowest level depth below grade: ________(feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Dirt floor

6. **HEATING, VENTING and AIR CONDITIONING** (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard	
Space Heaters	Stream radiation	Radiant floor	
Electric baseboard	Wood stove	Outdoor wood boiler	Other ________

The primary type of fuel used is:

Natural Gas	Fuel Oil	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: Natural Gas

Boiler/furnace located in: Basement Outdoors Main Floor Other ________

Air conditioning: Central Air Window units Open Windows None

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

Cold air return is present. Ductwork appears to be in good condition, joints appear to be tight

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level	**General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)**
Basement	Storage, furnace, hot water heater
1st Floor	living space
2nd Floor	—
3rd Floor	—
4th Floor	—

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

a. Is there an attached garage? Y / N attached storage shed

b. Does the garage have a separate heating unit? Y / N / NA

c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA Please specify Unknown

d. Has the building ever had a fire? Y / N When? Unknown

e. Is a kerosene or unvented gas space heater present? Y / N Where? ______

f. Is there a workshop or hobby/craft area? Y / N Where & Type? ______

g. Is there smoking in the building? Y / N How frequently? Unknown

h. Have cleaning products been used recently? Y / N When & Type? ______

i. Have cosmetic products been used recently? Y / N When & Type? ______

j. Has painting/staining been done in the last 6 months? Y / N Where & When? ______________

k. Is there new carpet, drapes or other textiles? Y / N Where & When? ______________

l. Have air fresheners been used recently? Y / N When & Type? ______________

m. Is there a kitchen exhaust fan? Y / N If yes, where vented? ___________

n. Is there a bathroom exhaust fan? Y / N If yes, where vented? ___________

o. Is there a clothes dryer? Y / N If yes, is it vented outside? Y / N

p. Has there been a pesticide application? Y / N When & Type? ______________

Are there odors in the building? Y / N
If yes, please describe: Pet odors

Do any of the building occupants use solvents at work? Y / N
(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist

If yes, what types of solvents are used? Not specific

If yes, are their clothes washed at work? Y / N

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

Yes, use dry-cleaning regularly (weekly)
Yes, use dry-cleaning infrequently (monthly or less)
Yes, work at a dry-cleaning service

No
Unknown

Is there a radon mitigation system for the building/structure? Y / N Date of Installation: ___________
Is the system active or passive? Active/Passive

9. WATER AND SEWAGE

Water Supply: Public Water Drilled Well Driven Well Dug Well Other: _______

Sewage Disposal: Public Sewer Septic Tank Leach Field Dry Well Other: _______

10. RELOCATION INFORMATION (for oil spill residential emergency) N/A

a. Provide reasons why relocation is recommended: ______________________________

b. Residents choose to: remain in home relocate to friends/family relocate to hotel/motel

c. Responsibility for costs associated with reimbursement explained? Y / N

d. Relocation package provided and explained to residents? Y / N

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement: See attached figure

First Floor: Not inspected / evaluated

12. OUTDOOR PLOT See attached figure

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.

13. PRODUCT INVENTORY FORM

Make & Model of field instrument used: ppb RAE

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo ** Y / N
Basement SE Corner	Miscellaneous	–	–	–	2-3 ppb	Y
	Debris					
	(i.e., old tires, chairs,					
	basketball hoop,					
	car bucket seat)					

* Describe the condition of the product containers as **Unopened (UO), Used (U),** or **Deteriorated (D)**
** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

ARCADIS BBL

Attachment D

NewFields Summary Letter,
May 16, 2007

NEWFIELDS

May 16, 2007

Mr. Scott Powlin
ARCADIS of New York, Inc
6723 Towpath Road, Box 66
Syracuse, NY 13214-0066

Subject: Chemical Fingerprinting of Groundwater, Soil Gas, Indoor and Ambient Air Samples, King Street Former MGP Site, Ogdensburg, NY

Dear Mr. Powlin:

This letter report presents the forensic hydrocarbon signatures of groundwater, soil gas, indoor and ambient air samples that were collected from the King Street former MGP site in Ogdensburg, N.Y. on March 28, 2007. Samples were collected and analyzed to evaluate the potential impact of hydrocarbons from the former MGP. The technical approach for addressing this objective was based on the comparison of the hydrocarbon chemistry of a vapor sample collected from above a tar well with samples collected from the potentially impacted areas.

The concentrations of target analytes detected in the soil gas and air samples provide a chemical fingerprint of the volatile hydrocarbons that comprise the samples. In some instances these fingerprints allow for inference of the possible types of source(s) of the contamination, i.e. petroleum fuels, tar residues, natural gas, etc. Partitioning and attenuation (e.g., weathering) processes in the subsurface can alter the original chemical fingerprint of a hydrocarbon source. Thus, the chemical profiles measured in soil gas or indoor air can be somewhat different than the subsurface source. Nonetheless, it is still possible and practical to compare the compositional fingerprints of the soil vapor and indoor air. These comparisons can be used to draw conclusions regarding potential sources, effects of subsurface processes (e.g., biodegradation or other forms of attenuation) on source signatures, and relationships between indoor and subsurface vapors.

The forensic hydrocarbon analysis established that the groundwater samples, indoor air, ambient air samples and soil gas samples all had different signatures. The soil gas samples' signatures were not that of a tar impact. A more detailed discussion of the forensic data and conclusions are presented below.

A brief description of the forensic chemistry methods that were utilized in this investigation are summarized in Attachment 1.

SAMPLE COLLECTION AND RECEIPT

Groundwater, soil gas, indoor and ambient air samples were collected at the Former King Street MGP site March 28, 2007, by ARCADIS personnel, and were transported via overnight carrier to the Alpha Woods Hole Group Laboratory (AWHGL) in Raynham, Massachusetts. The samples were received on March 30, 2007, in secure condition. An inventory of the samples collected for this investigation is provided in Table 1.

Table 1. Sample Inventory

Sample ID	AWHG Lab ID	Matrix	Date Collected	Date Received
MW-12R	0704006-01	Water	3-28-07	3-30-07
MW-111	0704006-02	Water	3-28-07	3-30-07
GW-1	0704006-03	Water	3-28-07	3-30-07
DUP-1	0704006-04	Water	3-28-07	3-30-07
Trip Blank	0704006-05	Water	3-28-07	3-30-07
IA-1	0703157-01	Indoor Air	3-28-07	3-30-07
IA-2	0703157-02	Indoor Air	3-28-07	3-30-07
AA-1	0703157-03	Ambient Air	3-28-07	3-30-07
AA-2	0703157-04	Ambient Air	3-28-07	3-30-07
AA-3	0703157-05	Ambient Air	3-28-07	3-30-07
VP-1A	0703157-06	Soil Gas	3-28-07	3-30-07
VP-3	0703157-07	Soil Gas	3-28-07	3-30-07
DUP-1	0703157-08	Soil Gas	3-28-07	3-30-07

FORENSIC ANALYSIS USED IN THIS REPORT

The water samples were analyzed by modified 8260 and all air and soil gas samples were prepared and analyzed by Forensic TO-15 (see Attachment 1). Forensic TO-15 uses modifications of EPA Method TO-15 that have been tailored for forensic analysis of 93 volatile hydrocarbons and associated compounds (Table 2) by high resolution gas chromatography/mass spectrometry (GC/MS) and gas chromatography with flame ionization detection (GC/FID). The MS is run in simultaneous full scan and selected ion mode (SIM), allowing for the sub-ppbv reporting limits (RLs), while also scanning for the extended analyte list. Included in this range are hydrocarbon chemicals that comprise crude oils, refinery intermediates, petroleum fuels, solvents, MGP tars, and tar-derived products. The Forensic TO-15 analyte list contains many higher molecular weight and higher boiling point compounds than what are typically reported in a standard EPA TO-15 analysis. While the analytical method and analyses used for this report have been validated, it should be noted that certain compounds (specifically, compounds greater than C_{10} and the gasoline additive MMT) are more difficult to recover from canisters than other lower molecular weight compounds. Thus, their concentrations should be considered as estimates.

Forensic chemical analysis generates a substantial amount of data, both chromatographic and numerical. In order to present this data in a meaningful manner, a variety of visual and graphical techniques were used to display and explain the data. Largely, we relied upon three methods of data visualization in this report, (1) GC/MS and GC/FID gas chromatograms—the raw output from analytical instruments that depict the distribution of both target and non-target compounds in samples, (2) target analyte concentration histograms and (3) star plots which show the percent composition of the major hydrocarbon classes (Paraffins, Isoparaffins, Aromatics, Naphthenes and Olefins) within each sample. The scales used in the concentration histograms differ from one another to show details that would not be visible otherwise. Compound abbreviations which are used in the histograms can be found in Table 2.

RESULTS

NewFields has reviewed the site map provided which depicted the sample locations as well as the estimated location of the former MGP. In the sections that follow, we review the character of the samples collected from the study area.

1 GROUNDWATER RESULTS

Three groundwater samples and a duplicate were collected and analyzed by modified 8260B. The GC/MS chromatograms for the samples collected from 43 GW-1, MW-11 and MW-12R are useful for comparing the general chromatographic features to the target analyte concentration histogram, which are in Figures 1 and 2.

- **GW-1**: This sample contained trace levels (below the RL) of aromatic compounds. None of the detections were above the reporting limit for the method, leaving it difficult to assess the source of contamination.

- **MW-11**: This sample had no detections.

- **MW-12R**: This sample contained elevated levels of Benzene and also low levels of other aromatic compounds (e.g. Toluene, Xylenes, Indan and Naphthalene). These aromatic compounds are associated with many types of petroleum products.

- **DUP-1**: This sample contained elevated levels of Benzene and also trace levels of other aromatic compounds (e.g. Toluene, Xylenes, Indan and Naphthalene). This sample's chemical composition was the same as MW-12R.

Of the groundwater samples submitted, MW-12R was impacted and enriched with Benzene. Toluene, Xylenes, Indan and Naphthene were also present at low levels. These aromatic compounds are present in many types of petroleum products, and based upon only one data point, it is difficult to associate the source. Historical groundwater results and/or more samples along with the site history and surrounding area's current use would allow for a more definitive assessment.

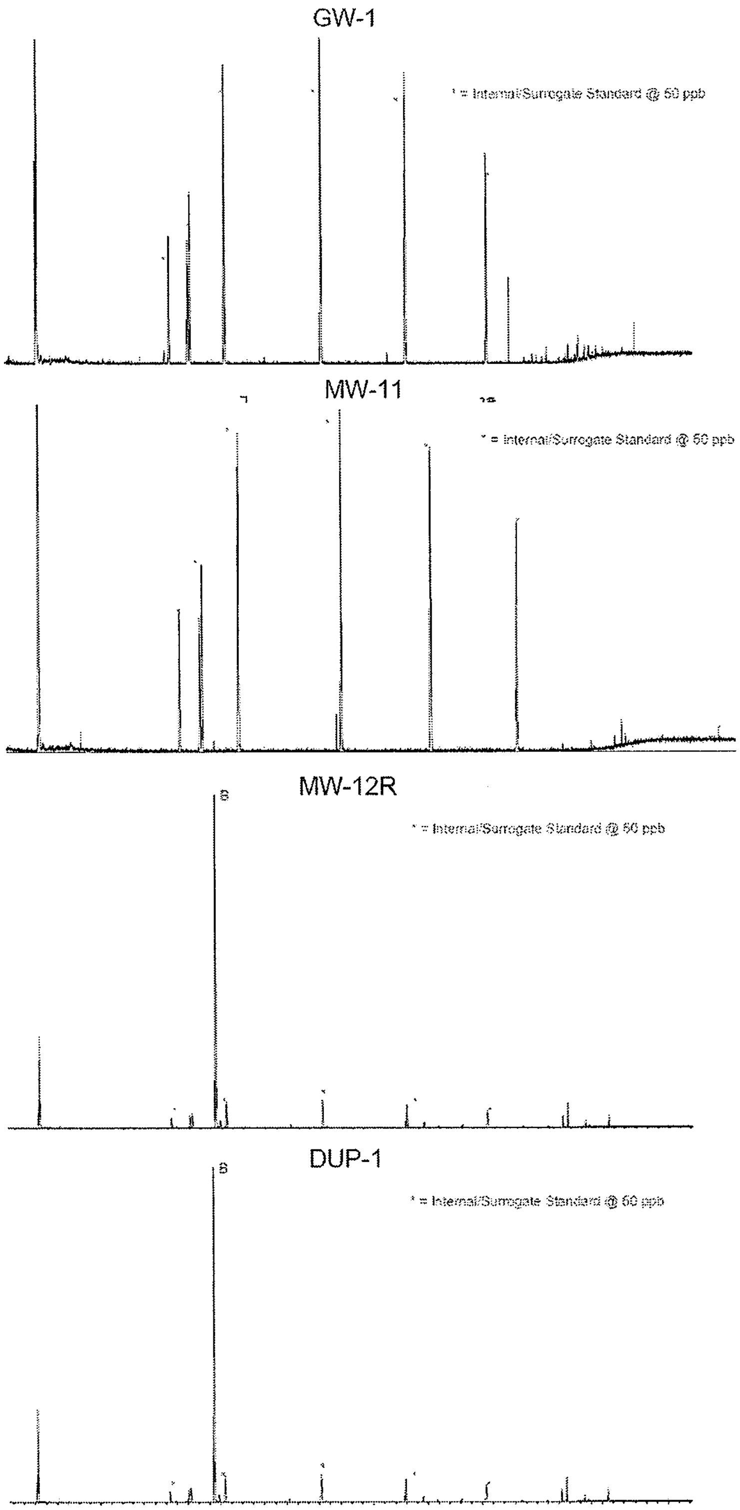
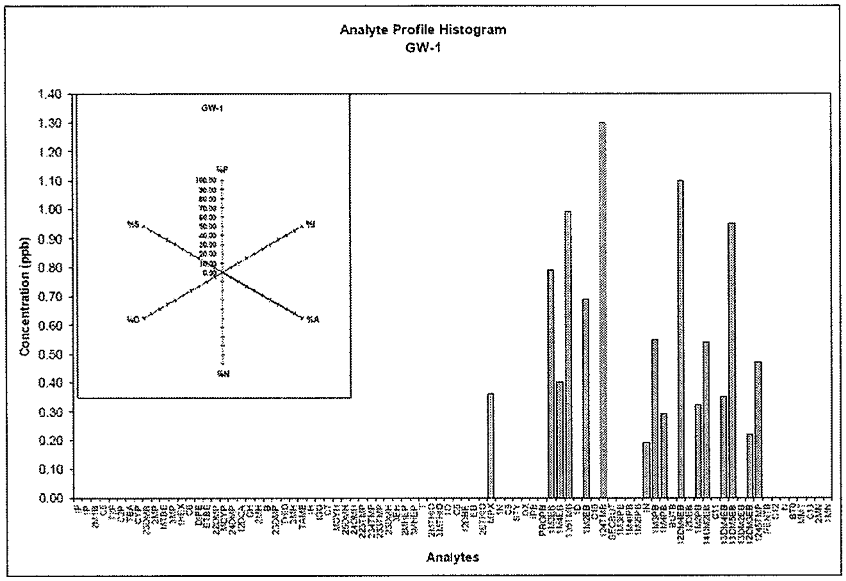


Figure 1. Groundwater samples' chromatograms



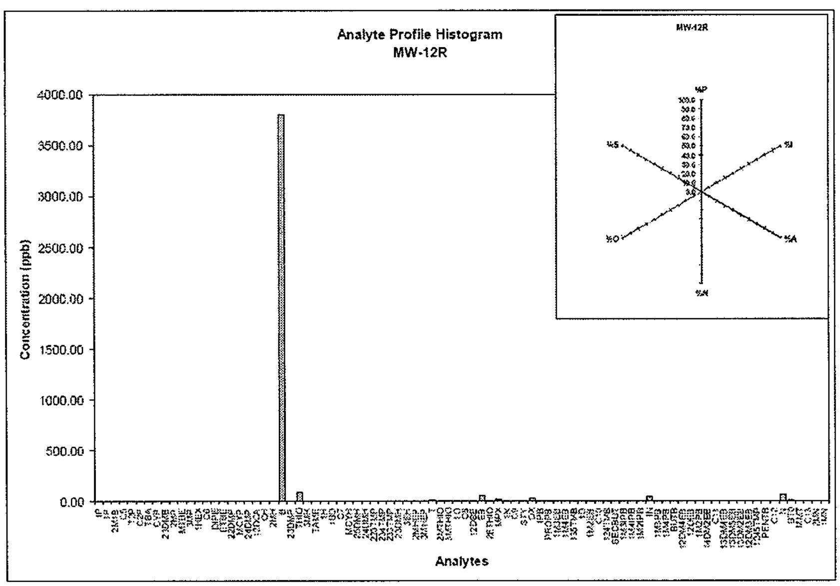


Figure 2: Concentration Histograms and star plots for GW-1 and MW-12R

2 Soil Gas Results

Two soil vapor samples were collected and submitted: VP-1A and VP-3. VP-1A was a near slab sample collected proximal to the building which had indoor air samples collected. VP-3 was collected above the former tar well and is southwest of VP-1A.

- **VP-3**: Sample VP3 had elevated concentrations of, and is heavily enriched by, Isooctane (2,2,4-Trimethylpentane) and other Trimethylpentane isomers, 2,2,3-, 2,3,4-, and 2,3,3-Trimethylpentane. VP-3 also contained trace levels of other isoparaffin and paraffin compounds. The chromatogram shows late-eluting, straight chain alkane compounds. Although this sample was collected directly above the tar well, this sample's chemical composition is not that of a tar's vapor signature. A common tar vapor chemical composition is enriched with aromatic compounds; specifically BTEX, Naphthalene and Indan. VP-3 was dominated by the isoparaffin class of compounds and contained only trace levels of aromatic compounds.

- **VP-1A**: Sample VP-1A shared the same chemical characteristics as sample VP-3: it is heavily enriched by Isooctane and other Trimethylpentane isomers, (2,2,3-, 2,3,4-, and 2,3,3-Trimethylpentanes) and had the late-eluting straight-chain alkanes.

- Because the signatures in samples VP-3 and VP-1A do not correspond to tar, and the fact that the concentrations detected in sample VP-1A were higher than in sample VP-3, it appears likely that the hydrocarbon impact may be coming from somewhere other then the tar well.

The chromatograms and histograms in Figures 3 and 5 clearly show that the soil gas samples' chemical composition is not that of a MGP tar's vapor signature (see Figure 4). The enrichment of these samples with the trimethylpentanes would lead to the assumption that the source is automotive gasoline. However, the typical vapor signature of automotive gasoline is dominated by the aromatic class of compounds and is slightly enriched with the trimethylpentanes. The sample signature does not match any known finished petroleum material, including automotive gasoline.

More site data, such as historical data and site use would be helpful in determining the potential source(s) of the trimethylpentanes. Forensic analysis of the NAPL from the site would provide a helpful source signature.

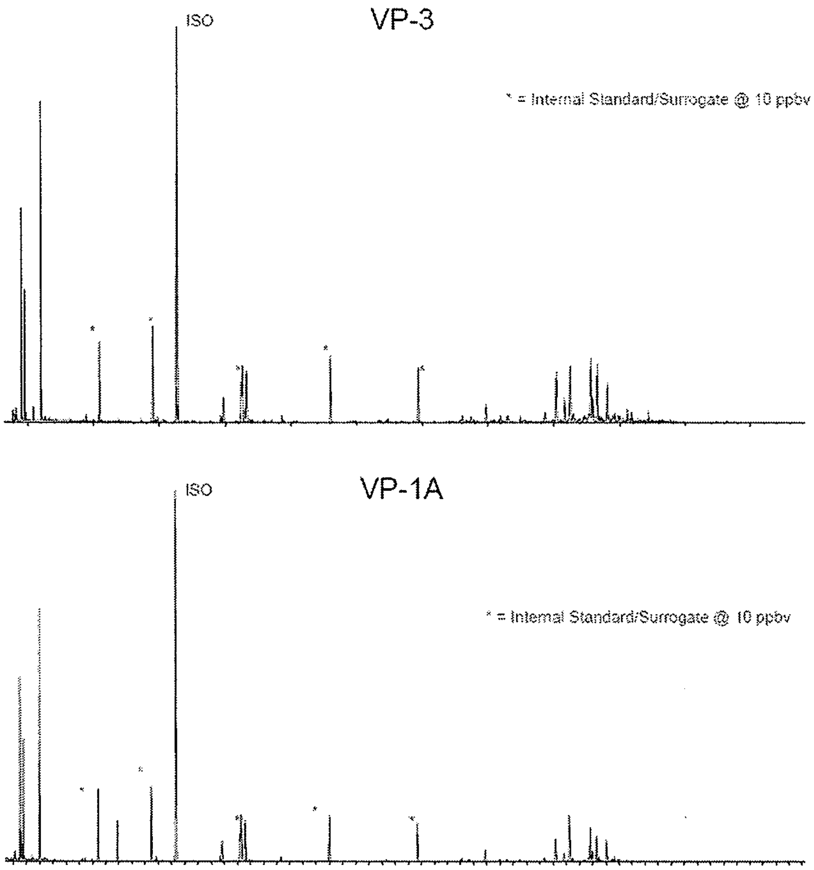


Figure 3. Soil Gas Chromatograms

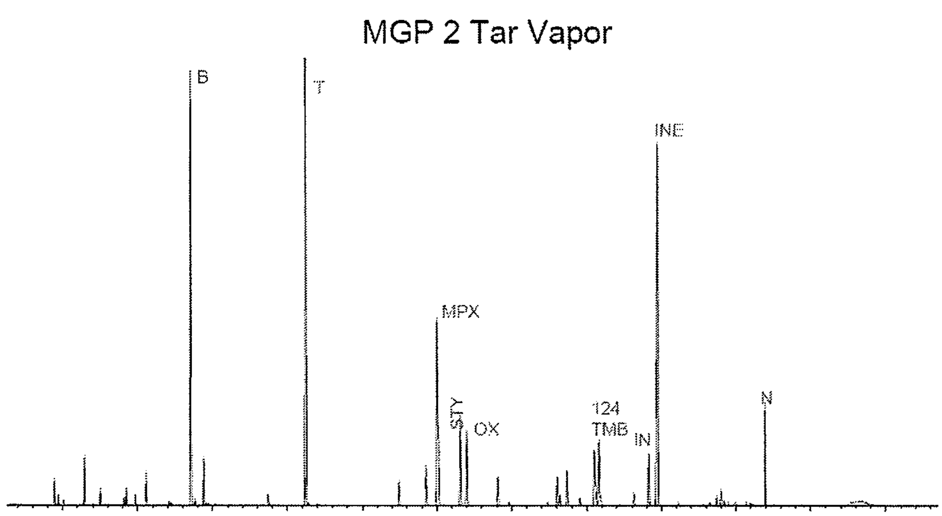
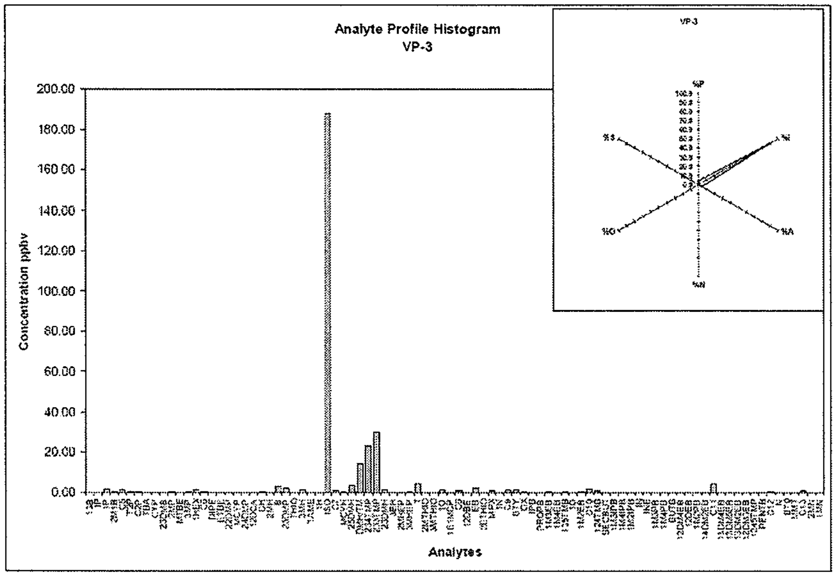


Figure 4. Example MGP Tar Vapor Chromatogram



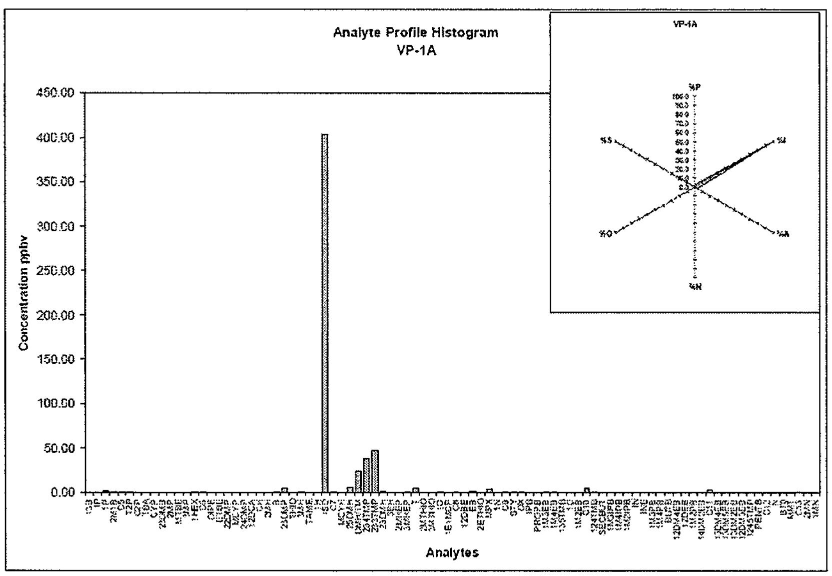


Figure 5. Concentration Histograms and star plots for VP-3 and VP-1A

3 AMBIENT AIR RESULTS

Three ambient air samples were collected and submitted: AA-1, AA-2 and AA-3.

- **AA-1**: Sample AA-1 had trace levels of a range of volatile hydrocarbons. Due to the low levels of the compounds present, it is difficult to clearly associate AA-1 with any one source. This sample's signature is uniquely different to that of the chemical signatures from samples VP-1A and VP-3. The chemical composition of this sample—notably the relative abundance of aromatics, isoparaffins, olefins, and paraffin class compounds, is consistent with an automotive gasoline source. The chromatographic pattern is also consistent with an automotive gasoline source in the ambient air. See Figure 6a. for an example chromatogram of an ambient air sample taken in proximity to operating motor vehicles.

- **AA-2**: Sample AA-2 shared the same general chemical characteristics as sample AA-1: trace levels of a range of volatile hydrocarbons, but AA-2 was enriched with the isoparaffin class of compounds.

- **AA-3**: Sample AA-3 shared the same chemical characteristics as sample AA-1: trace levels of a range of volatile hydrocarbons, in which the relative abundance of aromatics, isoparaffins, olefins, and paraffin class compounds, is consistent with an automotive gasoline source.

The chromatograms and histograms in Figures 6 and 7 show that these 3 ambient air samples have the same characteristics as one another and do not compare well to the chemical signature of the soil gas; allowing for unique signature sources to be developed. Due to the low levels of the compounds present, it is difficult to clearly associate the ambient air samples with any one source. As noted earlier certain compounds (specifically, compounds greater than C_{10}) are more difficult to recover from canisters than other lower molecular weight compounds. Thus, their concentrations as seen in the histograms should be considered as estimates.

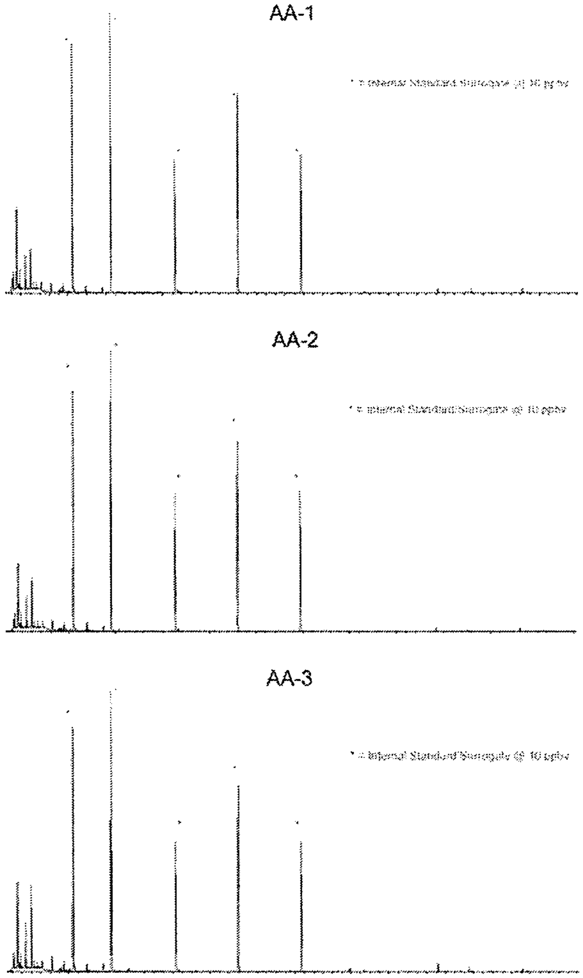


Figure 6. Chromatograms for AA-1, AA-2 and AA-3

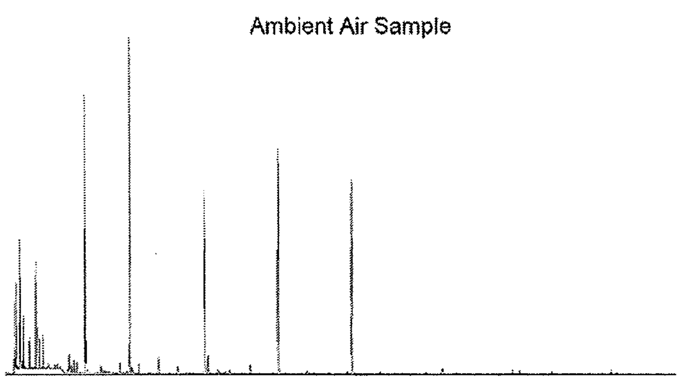


Figure 6a. Chromatograms for ambient air sample taken in proximity to operating motor vehicles.

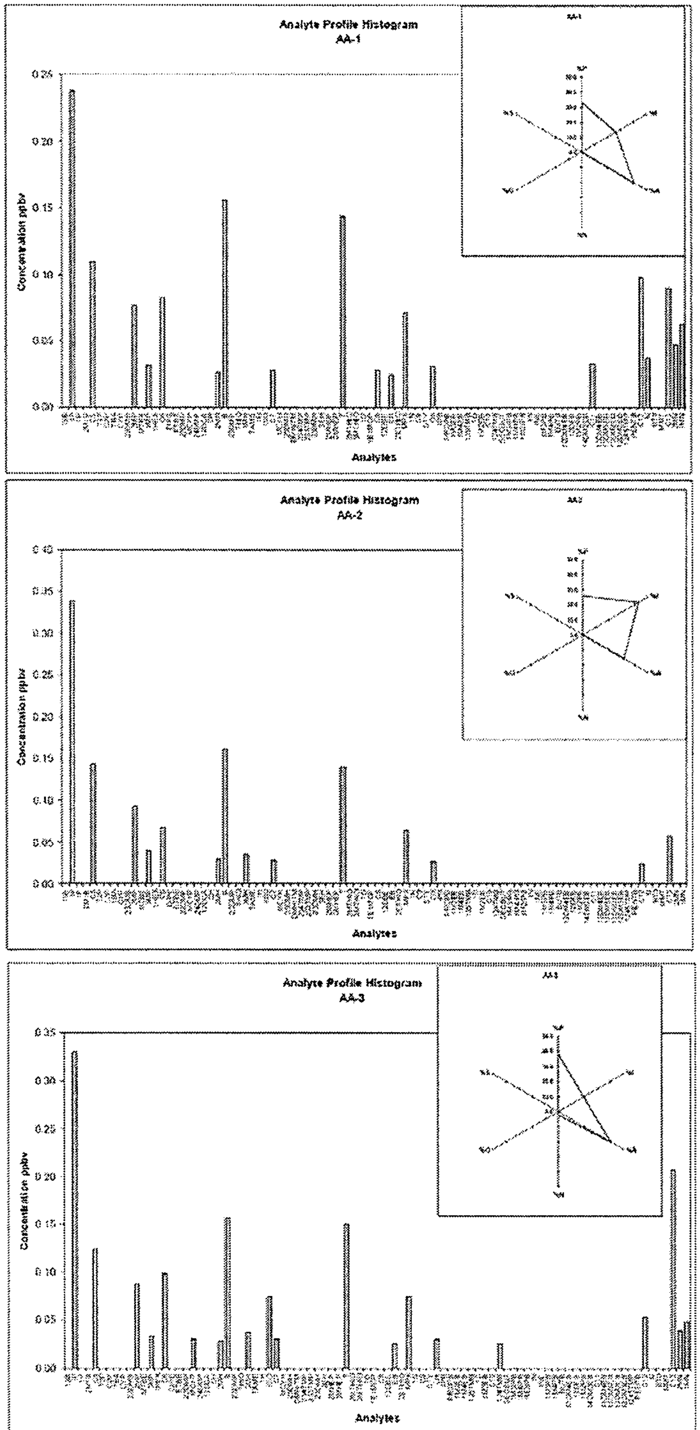


Figure 7. Concentration Histograms and star plots for AA-1, AA-2 and AA-3

4 INDOOR AIR RESULTS

Two indoor air samples were collected and submitted: IA-1 and IA-2.

- **IA-1**: Sample IA-1 had trace levels of a range of volatile hydrocarbons. In comparison to the concentrations of analytes found in the soil gas (VP-1A), IA-1 had a uniquely different chemical profile. The chemical composition of this sample—notably the relative abundance of n-alkanes, isoalkanes, olefins, and substituted aromatic compounds, is consistent with an automotive gasoline source. Due to the low levels of the compounds present, it is difficult to clearly associate IA-1 with any one source as this sample appears to have been impacted by multiple sources. IA-1 shared characteristics that were present in AA-2 (C3-C4 hydrocarbons), but also contained chemicals which were not present in the ambient air or soil gas (e.g. 1,3-Butadiene, acetone, ethanol and isopropyl alcohol). The presence of 1,2,4-Trimethylbeneze as well as several other aromatic compounds leads to the possible association with automotive gasoline. The presence of 1,3-Butadiene in IA-1, but not in the soil gas or ambient air samples, leads to a source within the building (e.g. Tobacco smoke or combustion from automotive gasoline). 1,3-Butadiene has a very short life in the atmosphere (hours), so it is expected to be confined in the area in which it is emitted.

- **IA-2**: Sample IA-2 shared the same chemical characteristics as sample IA-1. IA-2 had trace levels of a range of volatile hydrocarbons and had a uniquely different chemical profile than the soil gas samples. Due to the low levels of the compounds present, it is difficult to clearly associate IA-2 with any one source. As noted above for sample IA-1, IA-2 appears to have been impacted by multiple sources.

The chromatograms and histograms in Figures 8 and 9 show that these 2 indoor air samples have the same characteristics as one another and do not compare well to the chemical signature of the soil gas. The presence of 1,2,4-Trimethylbeneze as well as several other aromatic compounds leads to the possible association with automotive gasoline, possibly from the ambient air or from a source within the building. The presence of 1,3-Butadiene in IA-1, but not in the soil gas or ambient air samples, leads to a source within the building More site data, such as historical data and site use would be helpful in determining the source of the trimethylpentanes. Forensic analysis of the NAPL from the site would provide a helpful source signature.

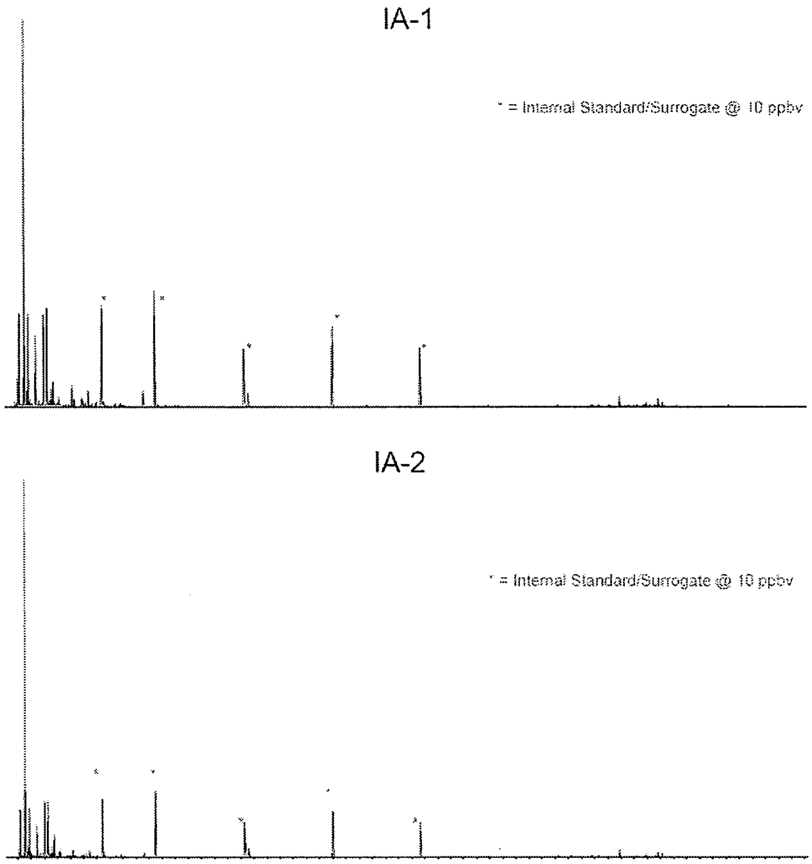
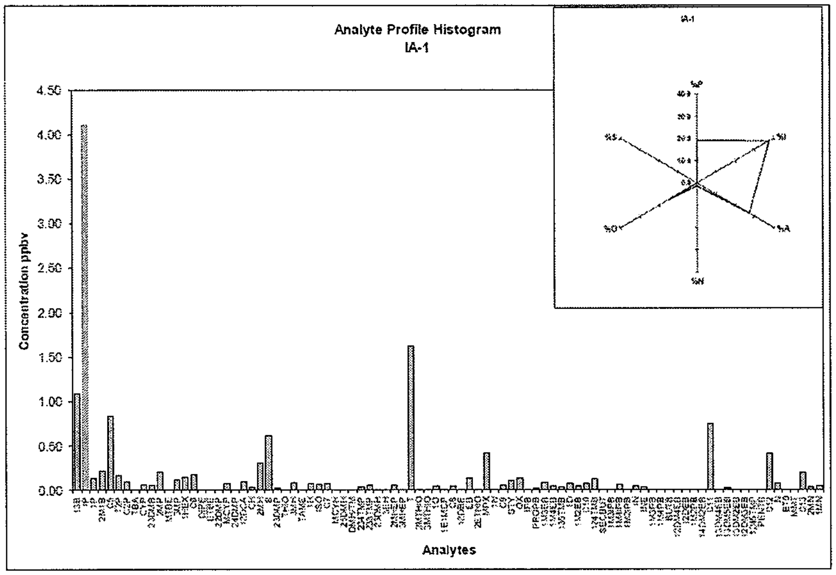


Figure 8. Chromatograms for IA-1 and IA-2.



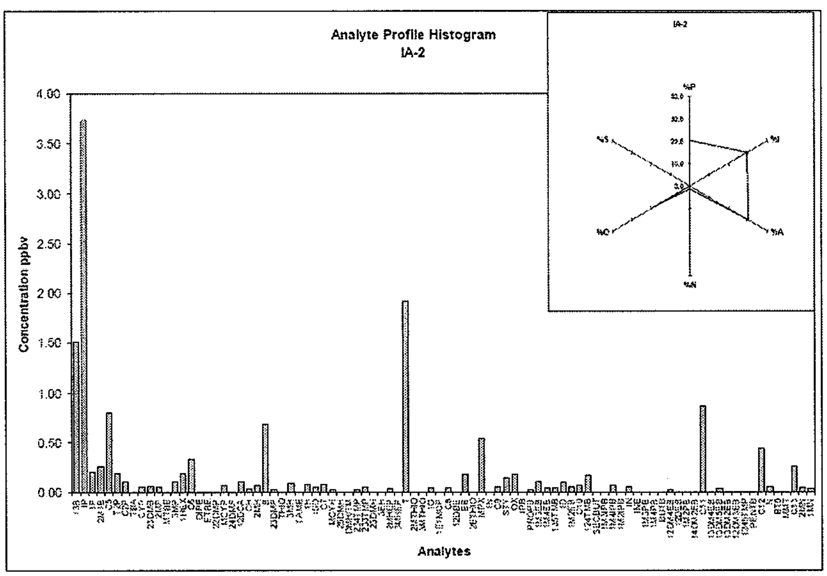


Figure 9. Concentration Histograms and star plots IA-1 and IA-2.

SUMMARY OBSERVATIONS

Based on the analytical results and general site information, the following summary observations have been reached:

- The chemical signatures of each matrix differed greatly from one another.
    a. Groundwater: MW-12R had detections of aromatic volatile chemicals which are common to many types of petroleum products. MW-11 had trace levels of volatile hydrocarbons and a conclusive chemical signature was not able to be made. GW-1 had no detections of VOCs above the reporting limit.
    b. Soil gas: VP-1A and VP-3 had chemical signatures that are not common to those from MGP tars. Both samples were enriched with the trimethylpentanes as well as other isoparaffins. These signatures do not match any known finished petroleum material, including automotive gasoline. Interestingly, the soil gas samples signatures differ dramatically to those of the groundwater sample MW-12R.
    c. Ambient Air: AA-1, AA-2 and AA-3 all contained trace levels of a range of volatile hydrocarbons, in which the relative distributions and abundance of aromatics, isoparaffins, olefins, and paraffin class compounds, is consistent with an automotive gasoline source. But due to the low levels of the compounds present, it is difficult to clearly associate the ambient air samples with any one source. The ambient air samples' chemical signatures are uniquely different to that of the soil gas samples' chemical signatures.
    d. Indoor Air: IA-1 and IA-2 had trace levels of a wide range of volatile chemicals. The signatures of these samples were uniquely different than those of the soil gas signatures. Due to the low levels of the compounds present, it is difficult to clearly associate IA-1 and IA-2 with any one source as these sample appears to have been impacted by multiple sources. IA-1 and IA-2 shared characteristics that were present in AA-2 (C3-C4 hydrocarbons), but also contained chemicals which were not present in the ambient air or soil gas (e.g. 1,3-Butadiene, acetone, ethanol and isopropyl alcohol) leading to the possibility of sources within the building. The presence of 1,2,4-Trimethylbeneze as well as several other aromatic compounds leads to the possible association with automotive gasoline from wither the ambient air or from a source within the building.
- The volatile chemical signatures present in the soil gas are not indicative of a tar source, and are also not common to any one particular hydrocarbon source signature.

Don't hesitate to contact me, should you have any questions regarding this report.

Sincerely,

Gina Plantz
Senior Scientist

Attachment 1
Analytical Method Summaries, QA/QC and Target Analytes

Volatile-range hydrocarbons by purge-and-trap GC/MS

Purge-and-trap sample introduction followed by high resolution full scan gas chromatography/mass spectrometry (GC/MS) was used to quantitatively measure important volatile-range hydrocarbons over the C_5 to C_{12} carbon range in the NAPLs. Included in this range are hydrocarbon chemicals that comprise refinery intermediates, automotive and aviation gasolines, and various other distillate petroleum products. The target compounds measured in the NAPL samples using this method are listed in Table 1, and include chemicals from the compound classes that comprise light distillate fuels and intermediates, including paraffins, isoparaffins, aromatics, naphthenes and olefins, (commonly referred to as PIANO). Additionally, sulfur containing thiophenes and oxygenated compounds (e.g., alcohols and ethers) are also quantitatively measured with this method. The analytical method is a modified form of SW-846 EPA Method 8260 and has been thoroughly described by Uhler et al (2003)[1].

Forensic TO-15 for Hydrocarbon Assessments

In order to accurately characterize the nature of hydrocarbons at a site, a tailored target analyte list specific for hydrocarbon fingerprinting, coupled with appropriate reporting limits (RLs) is utilized. The Forensic TO-15 method has a robust target analyte list which includes important paraffin, isoparaffins, aromatic, naphthene, and olefin (PIANO) compounds as well as gasoline additives, sulfurs and tar-specific compounds (Table 2). The results of analysis of environmental samples using this approach provides a powerful means for distinguishing the gas phase constituents of many types of subsurface hydrocarbons. Forensic TO-15 uses modifications of EPA Method TO-15 that have been tailored for forensic analysis of hydrocarbons.

Forensic TO-15 is designed to produce specific chemical data about the types of hydrocarbons found in the samples, such that collectively, the information can be used to determine the nature and source(s) of petroleum- or tar-derived hydrocarbons that comprise the samples. In order to ensure the utmost integrity of field samples, specially lined canisters and flow controllers are needed for collection of Forensic TO-15 samples. Upon receipt at the laboratory, the samples are analyzed by trapping the sample in a cryogenic concentrator and utilizing a GC/MS/FID for analysis following the methods described below.

Volatile-range hydrocarbons by cryogenic trapping/cryofocusing GC/MS. Cryogenic trapping and cryofocused sample introduction followed by high resolution gas chromatography/mass spectrometry (GC/MS) is used to quantitatively measure important volatile-range hydrocarbons over the C_5 to C_{12} carbon range in the samples. The MS is run in simultaneous full scan and SIM modes, allowing for the sub-ppbv RLs, while also scanning for the extended analyte list. Included in this range are hydrocarbon chemicals that comprise crude oils, refinery intermediates, petroleum fuels, solvents, MGP tars, and tar-derived products. The target compounds measured in the samples using this method are listed in Table 1, and include chemicals from the PIANO classes. Additionally, sulfur containing thiophenes and oxygenated compounds (e.g., alcohols and ethers) are also quantitatively measured with this method.

[1] Uhler, R.M., Healey, E.M., McCarthy, K.J., Uhler, A.D., and Stout, S.A. 2003. Molecular Fingerprinting of Gasoline by a Modified EPA 8260 Gas Chromatography/Mass Spectrometry Method. Int. J. Environ. Anal. Chem. 83(1): 1-20

GC/FID Full Carbon Range (C3-C13). In addition to GC/MS analysis for individual PIANO-range chemicals, all samples also can be simultaneously analyzed by gas chromatography/flame ionization detection (GC/FID) in order to develop a classical gas chromatographic 'fingerprint' of the vapor-borne constituents. This analysis will provide chemical information necessary for product type identification, a necessary and important element in differentiating and identifying chemical source signatures at contaminated sites.

Data Review and Audit

Target analyte concentrations, surrogate and internal standard recoveries, and additional QC sample results are determined in the laboratory. After careful checking and review, analysts transferred data electronically from the instrument analyses to reporting software for further qualifications and data edits. All forms for the data are generated from this software and are compared with the raw data for accuracy. These data are arranged in spreadsheet format.

The chemistry data for each analysis are reduced and reviewed by the laboratory staff and then assembled into the final laboratory data package. The assembled package is then reviewed and validated by the facility supervisor or staff responsible for each analysis. The data is checked to ensure that data quality objectives were met, that the analyses met the project objectives, and that the data are traceable and defensible. The Project Manager also reviews the data for compliance with the documented procedures and quality objectives.

After the final laboratory data package is reviewed, it is subjected to a formal audit. The audit process is coordinated by the Quality Assurance Manager and follows the procedure outlined in the relevant SOPs.

Table 2. Forensic TO-15 Analyte List

Class	Abbrev.	Analyte	Class	Abbrev.	Analyte
I	IP	Isopentane	ADD	12DBE	1,2-Dibromoethane
O	1P	1-Pentene	A	EB	Ethylbenzene
O	2M1B	2-Methyl-1-butene	S	2ETHIO	2-Ethylthiophene
P	C5	Pentane	A	MPX	p/m-Xylene
O	T2P	2-Pentene (trans)	O	1N	1-Nonene
O	C2P	2-Pentene (cis)	P	C9	Nonane
OX	TBA	Tertiary butanol	A	STY	Styrene
N	CYP	Cyclopentane	A	OX	o-Xylene
I	23DMB	2,3-Dimethylbutane	A	IPB	Isopropylbenzene
I	2MP	2-Methylpentane	A	PROPB	n-Propylbenzene
OX	MTBE	MTBE	A	1M3EB	1-Methyl-3-ethylbenzene
I	3MP	3-Methylpentane	A	1M4EB	1-Methyl-4-ethylbenzene
O	1HEX	1-Hexene	A	135TMB	1,3,5-Trimethylbenzene
P	C6	Hexane	O	1D	1-Decene
OX	DIPE	Diisopropyl Ether (DIPE)	A	1M2EB	1-Methyl-2-ethylbenzene
OX	ETBE	Ethyl Tertiary Butyl Ether (ETBE)	P	C10	Decane
I	22DMP	2,2-Dimethylpentane	A	124TMB	1,2,4-Trimethylbenzene
N	MCYP	Methylcyclopentane	A	SECBUT	sec-Butylbenzene
I	24DMP	2,4-Dimethylpentane	A	1M3IPB	1-Methyl-3-isopropylbenzene
ADD	12DCA	1,2-Dichloroethane	A	1M4IPB	1-Methyl-4-isopropylbenzene
N	CH	Cyclohexane	A	1M2IPB	1-Methyl-2-isopropylbenzene
I	2MH	2-Methylhexane	A	IN	Indan
A	B	Benzene	A	INE	Indene
I	23DMP	2,3-Dimethylpentane	A	1M3PB	1-Methyl-3-propylbenzene
S	THIO	Thiophene	A	1M4PB	1-Methyl-4-propylbenzene
I	3MH	3-Methylhexane	A	BUTB	n-Butylbenzene
OX	TAME	TAME	A	12DM4EB	1,2-Dimethyl-4-ethylbenzene
O	1H	1-Heptene	A	12DEB	1,2-Diethylbenzene
I	ISO	Isooctane	A	1M2PB	1-Methyl-2-propylbenzene
P	C7	Heptane	A	14DM2EB	1,4-Dimethyl-2-ethylbenzene
N	MCYH	Methylcyclohexane	P	C11	Undecane
I	25DMH	2,5-Dimethylhexane	A	13DM4EB	1,3-Dimethyl-4-ethylbenzene
I	223TMP	2,4-Dimethyhexane / 2,2,3-TMP	A	13DM5EB	1,3-Dimethyl-5-ethylbenzene
I	234TMP	2,3,4-Trimethylpentane	A	13DM2EB	1,3-Dimethyl-2-ethylbenzene
I	233TMP	2,3,3-Trimethylpentane	A	12DM3EB	1,2-Dimethyl-3-ethylbenzene
I	23DMH	2,3-Dimethylhexane	A	1245TMP	1,2,4,5-Tetramethylbenzene
I	3EH	3-Ethylhexane	A	PENTB	Pentylbenzene
I	2MHEP	2-Methylheptane	P	C12	Dodecane
I	3MHEP	3-Methylheptane	A	N	Naphthalene
A	T	Toluene	S	BT0	Benzothiophene
S	2MTHIO	2-Methylthiophene	ADD	MMT	MMT
S	3MTHIO	3-Methylthiophene	P	C13	Tridecane
O	1O	1-Octene	A	2MN	2-Methylnaphthalene
N	1E1MCP	1-Ethyl-1-methylcyclopentane	A	1MN	1-Methylnaphthalene
P	C8	Octane			

Class	
P	Paraffin
I	Isoparaffin
A	Aromatic
N	Naphthene
O	Olefin
S	Sulfur
ADD	Additive

ationalgrid

Steven P. Stucker, C.P.G.
Senior Environmental Engineer
Environmental Department

June 13, 2007

Ms. Gladys Durham
2 King Street
Ogdensburg, NY 13669

Re: Analytical Results of Air, Soil Vapor, and Groundwater Sampling
Ogdensburg – King Street
Non-Owned Former Manufactured Gas Plant (MGP) Site

Dear Ms. Durham:

Enclosed for your information is a summary of laboratory results for the basement indoor air, outdoor (ambient) air, soil vapor, and groundwater samples collected at or near your residence located at 2 King Street on March 28, 2007. The sampling activities were conducted by National Grid in cooperation with the Department of Environmental Conservation (DEC) and the Department of Health (DOH) to determine the possibility of impacts to your basement's indoor air quality from our former manufactured gas plant (MGP) site located on King Street. Table 1 presents results of basement indoor air, outdoor (ambient) air, and soil vapor sampling and includes the DOH background values used for comparative purposes. Table 2 presents results of groundwater sampling and includes DEC groundwater quality standards used for comparative purposes.

Indoor air samples (denoted with "IA") were collected from two locations (locations IA-1 and IA-2), ambient air samples (denoted with "AA") were collected from two locations outside the building (locations AA-1 and AA-2), and a soil vapor sample (denoted with "VP") was collected at one location outside the building (location VP-1A). The sampling locations are shown on Figure 1. IA-1 and IA-2 were collected from the basement and crawlspace areas, respectively. VP-1A was collected outside the building to the west, in the vicinity of former soil vapor sampling point VP-1. AA-1 was collected upwind and AA-2 was collected downwind of your residence. A groundwater sample was collected from a temporary groundwater sampling point (denoted with "GW") in the basement of your residence (location GW-1, as shown on Figure 1).

Based on a review of the data by National Grid, the DEC and DOH, indoor air is not being impacted by MGP related waste from the site. Furthermore, the levels found in the basement and crawl space indoor air are consistent with the results previously forwarded to you by the DOH, and are unlikely to cause health effects. Therefore, based on this information, National Grid, the DEC, and DOH concur that no further action or additional air sampling is necessary at this time.

If you have any questions concerning the enclosed data, you may wish to contact Mr. Ian Ushe of the DOH at 1-800-458-1158, ext. 2-7880, or Mr. Bernard Franklin of the DEC at 518-402-9662.

You are also welcome to contact me at (315) 428-5652. I will call you in a few days to make sure you have received this information and to answer any questions you may have.

Sincerely,

for

Steven P. Stucker
Environmental Department

cc: George Heitzman, P.E., New York State Department of Environmental Conservation
Bernard Franklin, New York State Department of Environmental Conservation
Richard Fedigan, New York State Department of Health
Ian Ushe, New York State Department of Health
Terry Young, P.E., National Grid
William Holzhauer, Esq., National Grid
Scott Powlin, ARCADIS BBL
Mark Distler, O'Brien & Gere

TABLE 1
SOIL VAPOR, INDOOR AIR, & AMBIENT AIR VOC ANALYTICAL RESULTS (ug/m3)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

	Typical Residential Indoor Air Concentrations	VOC Analytical Results (ug/m^3)				
		Ambient (Outdoor) Air		Indoor Air		Soil Vapor
Sample ID:		AA-1	AA-2	IA-1	IA-2	VP-1A
Volatile Organic Compounds (VOCs)						
1,2,4,5-Tetramethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1,2,4-Trimethylbenzene	9.8	<0.491	<0.491	0.619	0.806	6.36
1,2-Dibromoethane	0.38	<0.768	<0.768	<0.768	<0.768	<5.24
1,2-Dichloroethane	0.37	<0.404	<0.404	0.384 J	0.421	<2.76
1,2-Diethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1,2-Dimethyl-3-ethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1,2-Dimethyl-4-ethylbenzene	- -	<0.549	<0.549	<0.549	0.137 J	<3.74
1,3,5-Trimethylbenzene	3.9	<0.491	<0.491	0.157 J	0.201 J	1.54 J
1,3-Butadiene	- -	<0.221	<0.221	2.4	3.34	<1.51
1,3-Dimethyl-2-ethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1,3-Dimethyl-4-ethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1,3-Dimethyl-5-ethylbenzene	- -	<0.549	<0.549	0.148 J	0.181 J	<3.74
1,4-Dimethyl-2-ethylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1-Decene	- -	<0.573	<0.573	0.43 J	0.55 J	<3.91
1-Ethyl-1-methylcyclopentane	- -	<0.459	<0.459	<0.459	<0.459	<3.13
1-Heptene	- -	<0.401	<0.401	0.285 J	0.329 J	<2.74
1-Hexene	- -	<0.344	<0.344	0.499	0.636	5.84
1-Methyl-2-ethylbenzene	- -	<0.491	<0.491	0.192 J	0.236 J	1.34 J
1-Methyl-2-isopropylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1-Methyl-2-propylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1-Methyl-3-ethylbenzene	- -	<0.491	<0.491	0.427 J	0.526	4.25
1-Methyl-3-isopropylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1-Methyl-3-propylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1-Methyl-4-isopropylbenzene	- -	<0.549	<0.549	0.346 J	0.395 J	<3.74
1-Methyl-4-propylbenzene	- -	<0.549	<0.549	<0.549	<0.549	<3.74
1-Methylnaphthalene	- -	0.366 J	<0.581	0.209 J	0.215 J	<3.96
1-Nonene	- -	<0.516	<0.516	<0.516	<0.516	<3.52
1-Octene	- -	<0.459	<0.459	0.17 J	0.197 J	4.6
1-Pentene	- -	<0.287	<0.287	0.381	0.573	5.9
2,2,4-Trimethylpentane	- -	<0.467	<0.467	0.275 J	0.21 J	1,880 D
2,2-Dimethylpentane	- -	<0.409	<0.409	<0.409	<0.409	<2.79
2,3,3-Trimethylpentane	- -	<0.467	<0.467	0.252 J	0.252 J	226
2,3,4-Trimethylpentane	- -	<0.467	<0.467	0.163 J	0.126 J	177
2,3-Dimethylbutane	- -	<0.352	<0.352	0.18 J	0.208 J	<2.4
2,3-Dimethylhexane	- -	<0.467	<0.467	<0.467	<0.467	9.42
2,3-Dimethylpentane	5.2	<0.409	<0.409	0.111 J	0.102 J	20.6
2,4-Dimethyhexane / 2,2,3-Trimethylpentane	- -	<0.934	<0.934	<0.934	<0.934	115
2,4-Dimethylpentane	4.7	<0.409	<0.409	<0.409	<0.409	<2.79
2,5-Dimethylhexane	- -	<0.467	<0.467	<0.467	<0.467	27.7
2-Ethylthiophene	- -	<0.458	<0.458	<0.458	<0.458	<3.13
2-Methyl-1-butene	- -	<0.287	<0.287	0.631	0.757	1.5 J
2-Methylheptane	- -	<0.467	<0.467	0.252 J	0.154 J	0.828 J
2-Methylhexane	- -	0.111 J	0.119 J	1.26	0.287 J	<2.79
2-Methylnaphthalene	- -	0.273 J	<0.581	0.169 J	0.244 J	<3.96
2-Methylpentane	- -	0.271 J	0.328 J	0.736	0.173 J	<2.4
2-Methylthiophene	- -	<0.401	<0.401	<0.401	<0.401	<2.74

See Notes on Page 3.

TABLE 1
SOIL VAPOR, INDOOR AIR, & AMBIENT AIR VOC ANALYTICAL RESULTS (ug/m3)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

	Typical Residential Indoor Air	VOC Analytical Results (ug/m^3)				
		Ambient (Outdoor) Air		Indoor Air		Soil Vapor
Sample ID:	Concentrations	AA-1	AA-2	IA-1	IA-2	VP-1A
Volatile Organic Compounds (VOCs)						
2-Pentene (cis)	- -	<0.287	<0.287	0.272 J	0.298	0.84 J
2-Pentene (trans)	- -	<0.287	<0.287	0.467	0.539	2.19
3-Ethylhexane	- -	<0.467	<0.467	<0.467	<0.467	0.987 J
3-Methylheptane	- -	<0.467	<0.467	<0.467	<0.467	2.48 J
3-Methylhexane	- -	<0.409	0.147 J	0.36 J	0.369 J	3.32
3-Methylpentane	- -	0.113 J	0.141 J	0.409	0.377	<2.4
3-Methylthiophene	- -	<0.401	<0.401	<0.401	<0.401	<2.74
4-Ethyltoluene	- -	<0.491	<0.491	0.192 J	0.196 J	2.18 J
Benzene	13	0.498	0.517	1.95	2.19	1.5 J
Benzothiophene	- -	<0.548	<0.548	<0.548	<0.548	<3.74
Cyclohexane	6.3	<0.344	<0.344	0.113 J	0.131 J	<2.35
Cyclopentane	- -	<0.287	<0.287	0.189 J	0.152 J	<1.96
Decane	15	<0.582	<0.582	0.413 J	0.419 J	27.5
Diisopropyl Ether (DIPE)	- -	<0.418	<0.418	<0.418	<0.418	<2.85
Dodecane	9.2	0.682 J	0.174 J	2.88	3.01	1.23 J
Ethyl Tertiary Butyl Ether (ETBE)	- -	<0.418	<0.418	<0.418	<0.418	<2.85
Ethylbenzene	6.4	0.108 J	<0.434	0.599	0.738	9.02
Indane	- -	<0.483	<0.483	0.222 J	0.227 J	1.81 J
Indene	- -	<0.475	<0.475	0.147 J	<0.475	<3.24
Isopentane	- -	0.702	1	12.1	11	<2.01
Isopropylbenzene	0.82	<0.491	<0.491	<0.491	<0.491	<3.35
m,p-Xylene	11	0.312 J	0.278 J	1.83	2.35	15.8
Methylcyclohexane	4.5	<0.401	<0.401	<0.401	0.1 J	<2.74
Methylcyclopentane	- -	<0.344	<0.344	0.244 J	0.237 J	<2.35
Methyl-tert-butyl ether	14	<0.36	<0.36	<0.36	<0.36	<2.46
MMT	- -	<0.891	<0.891	<0.891	<0.891	<6.08
Naphthalene	- -	0.194 J	<0.524	0.351 J	0.288 J	<3.57
n-Butylbenzene	1.1	<0.549	<0.549	<0.549	<0.549	<3.74
n-Heptane	18	0.115 J	0.115 J	0.328 J	0.336 J	3.07
n-Hexane	14	0.292 J	0.236 J	0.609	1.17	1.85 J
Nonane	7.9	<0.524	<0.524	0.304 J	0.294 J	3.61
n-Propylbenzene	1.5	<0.491	<0.491	0.133 J	0.142 J	1.34 J
Octane	5.2	0.131 J	<0.467	0.205 J	0.187 J	3.37
o-Xylene	7.1	0.135 J	0.113 J	0.607	0.751	5
Pentane	- -	0.324	0.425	2.46	2.34	3.88
Pentylbenzene	- -	<0.606	<0.606	<0.606	<0.606	<4.13
sec-Butylbenzene	1.2	<0.491	<0.491	<0.491	<0.491	<3.35
Styrene	1.4	<0.426	<0.426	0.451	0.626	2.09 J
TAME	- -	<0.418	<0.418	<0.418	<0.418	<2.85
tert-Butyl Alcohol	- -	<0.303	<0.303	<0.303	<0.303	<2.07
Thiophene	- -	<0.344	<0.344	<0.344	<0.344	<2.35
Toluene	57	0.542	0.527	6.1	7.23	21.7
Tridecane	- -	0.678 J	0.429 J	1.47	1.95	3.03 J
Undecane	12	0.211 J	<0.639	4.76	5.52	21.6

See Notes on Page 3.

TABLE 1
SOIL VAPOR, INDOOR AIR, & AMBIENT AIR VOC ANALYTICAL RESULTS (ug/m³)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

1. Samples were collected by ARCADIS BBL on March 28, 2007.
2. Samples were analyzed for volatile organic compounds (VOCs) by Alpha Wood Hole Group (AWHGL) in Raynham, Massachusetts using Forensic United States Environmental Protection Agency (USEPA) Compendium Method TO-15.
3. Sample designations indicate the following:
   - "VP" = soil vapor sample;
   - "IA" = indoor air sample; and
   - "AA" = ambient (outdoor) air sample.
4. Typical residential indoor air concentrations are the upper fence of values observed by the NYSDOH during a 2003 study, which are the values recommended for comparison in the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (NYSDOH, October 2006).
5. Concentrations reported in micrograms per cubic meter (ug/m³).
6. < = Not detected at or above the associated reporting limit.
7. D - Analyte was quantitated at a secondary dilution.
8. J - Indicates an estimated value.
9. -- = Comparison value not available.
10. Field duplicate sample results are presented in brackets.
11. Results have been validated by NewFields Environmental Forensics Practice, LLC.

See Notes on Page 3.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS (ug/L)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Sample ID:	NYSDEC TOGS 1.1.1 Water Standards & Guidance Values	GW-1
VOCs		
1,2,4,5-Tetramethylbenzene	- -	0.47 J
1,2,4-Trimethylbenzene	- -	1.3 J
1,2-Dibromoethane	0.0006	<2
1,2-Dichloroethane	0.6	<2
1,2-Diethylbenzene	- -	<2
1,2-Dimethyl-3-ethylbenzene	- -	0.22 J
1,2-Dimethyl-4-ethylbenzene	- -	1.1 J
1,3,5-Trimethylbenzene	- -	0.99 J
1,3-Dimethyl-2-ethylbenzene	- -	<2
1,3-Dimethyl-4-ethylbenzene	- -	0.35 J
1,3-Dimethyl-5-ethylbenzene	- -	0.95 J
1,4-Dimethyl-2-ethylbenzene	- -	0.54 J
1-Decene	- -	<2
1-Heptene/1,2-DMCP (trans)	- -	<4
1-Hexene	- -	<2
1-Methyl-2-ethylbenzene	- -	0.69 J
1-Methyl-2-isopropylbenzene	- -	<2
1-Methyl-2-propylbenzene	- -	0.32 J
1-Methyl-3-ethylbenzene	- -	0.79 J
1-Methyl-3-isopropylbenzene	- -	<2
1-Methyl-3-propylbenzene	- -	0.55 J
1-Methyl-4-isopropylbenzene	- -	<2
1-Methyl-4-propylbenzene	- -	0.29 J
1-Methylnaphthalene	- -	<2
1-Nonene	- -	<2
1-Octene	- -	<2
1-Pentene	- -	<2
2,2,3-Trimethylpentane	- -	<2
2,2,4-Trimethylpentane	- -	<2
2,2-Dimethylpentane	- -	<2
2,3,3-Trimethylpentane	- -	<2
2,3,4-Trimethylpentane	- -	<2
2,3-Dimethylbutane	- -	<2
2,3-Dimethylhexane	- -	<2
2,3-Dimethylpentane	- -	<2
2,4-Dimethylhexane	- -	<2
2,4-Dimethylpentane	- -	<2
2,5-Dimethylhexane	- -	<2
2-Ethylthiophene	- -	<2
2-Methyl-1-butene	- -	<2
2-Methylheptane	- -	<2
2-Methylhexane	- -	<2
2-Methylnaphthalene	- -	<2
2-Methylpentane	- -	<2
2-Methylthiophene	- -	<2
2-Pentene (cis)	- -	<2
2-Pentene (trans)	- -	<2
3-Ethylhexane	- -	<2
3-Methylheptane	- -	<2
3-Methylhexane	- -	<2

See Notes on Page 3.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS (ug/L)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Sample ID:	NYSDEC TOGS 1.1.1 Water Standards & Guidance Values	GW-1
VOCs		
3-Methylpentane	--	<2
3-Methylthiophene	--	<2
4-Ethyltoluene	--	0.4 J
Benzene	1	<2
Benzothiophene	--	<2
Cyclohexane	--	<2
Cyclopentane	--	<2
Decane	--	<2
Diisopropyl Ether (DIPE)	--	<2
Dodecane	--	<2
Ethyl Tertiary Butyl Ether (ETBE)	--	<2
Ethylbenzene	5	<2
Indane	--	0.19 J
Isopentane	--	<2
Isopropylbenzene	5	<2
m,p-Xylene	--	0.36 J
Methylcyclohexane	--	<2
Methylcyclopentane	--	<2
Methyl-tert-butyl ether	10	<2
MMT	--	<2
Naphthalene	10	<2
n-Butylbenzene	--	<2
n-Heptane	--	<2
n-Hexane	--	<2
Nonane	--	<2
n-Propylbenzene	--	<2
Octane	--	<2
o-Xylene	--	<2
Pentane	--	<2
Pentylbenzene	--	<2
sec-Butylbenzene	--	<2
Styrene	5	<2
TAME	--	<2
tert-Butyl Alcohol	--	<5
Thiophene	--	<2
Toluene	5	<2
Tridecane	--	<2
Undecane	--	<2

See Notes on Page 3.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS (ug/L)

VAPOR INTRUSION EVALUATION
NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

Notes:

1. Samples were collected by ARCADIS BBL on March 28, 2007.
2. Samples were analyzed for volatile organic compounds (VOCs) by Alpha Wood Hole Group (AWHGL) in Raynham, Massachusetts using United States Environmental Protection Agency (USEPA) SW-846 Method 8260.
3. Sample designations indicate the following:
   - "GW" = temporary monitoring well.
4. "NYSDEC TOGS 1.1.1 Water Standards and Guidance Values" are presented in Table 1 of the New York State Department of Environmental Conservation (NYSDEC) Technical & Operational Guidance Series (TOGS 1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (NYSDEC, June 2004).
5. Concentrations reported in micrograms per liter (ug/L).
6. < = Not detected at or above the associated reporting limit.
7. J - Indicates an estimated value.
8. -- = Comparison value not available.
9. Results have been validated by NewFields Environmental Forensics Practice, LLC.

See Notes on Page 3.

[SYR-85-LEAD] SYR-85-RCA WLJ RCB L: ON=*, OFF=REF* SP-PROP-TEMP-GW-OLD
G:\CAD\ACTIVE\-DWG\ACT\36671011\36671B04.dwg SAVED:6/11/2007 11:17 AM LAYOUT:2BL-2 PAGESETUP:---- PENTABLE:PLTFULL.CTB PRINTED:6/11/2007 11:17 AM BY:RBASSETT
PROJECTNAME: ----
XREFS: IMAGES:

LEGEND:

AA-1 △	AMBIENT AIR SAMPLING POINT
VP-1A ▲	SOIL VAPOR SAMPLING POINT
IA-1 ■	INDOOR AIR SAMPLING LOCATION
GW-1 ✕	TEMPORARY GROUNDWATER SAMPLING POINT

△ AA-2

NOTE:

BUILDING DIMENSIONS AND SAMPLING LOCATIONS ARE BASED ON MEASUREMENTS BY SAMPLING PERSONNEL AND ARE APPROXIMATE.

0 8' 16'

APPROXIMATE GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

SAMPLING LOCATIONS AT 2 KING STREET

ARCADIS BBL
Infrastructure, environment, facilities

FIGURE
1

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9662 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us

July 16, 2007

Mr. Steven Stucker
Environmental Department
National Grid Company
300 Erie Boulevard West
Syracuse, NY 13202

Dear Mr. Stucker:

Re: Ogdensburg (King St.), St. Lawrence County
Non-Owned Former MGP Site
Site #V00479-6
Results of Soil Vapor Intrusion Evaluation Sampling

The New York State Department of Health and New York State Department of Environmental Conservation (Departments) have reviewed National Grid's June 29, 2007 Results of Soil Vapor Intrusion Evaluation Sampling Report. The Departments have the following comments:

1. Page 3 of 4, third bullet. "*Groundwater from MW-12R contains elevated, BTEX and naphthalene, likely from a petroleum source.*" Comment: The Departments do not accept this interpretation. The data from additional work scheduled in the next phase of the Remedial Investigation is needed to clarify groundwater flow direction in bedrock. Additionally, as noted in Comment #4 below, a source signature is needed for an adequate forensics comparison.

2. Page 3 of 4, fourth bullet. "*Soil vapor sample VP-1A and VP-3 contained a hydrocarbon signature, but the signature did not resemble coal tar.* Appendix D, page 6 "*The sample signature does not match any know finished petroleum material, including automotive gasoline*". Comment: This does not exclude a BTEX contribution from the MGP source. The origin and qualitative data for the MGP Tar Vapor example used in Figure 4 was not adequately identified and should be provided.

3. Page 3 of 4, fifth bullet. "*Ambient air samples AA-1, AA-2 and AA-3 contained trace levels of VOCs likely associated with gasoline*;. Comment: According to the EPA and NYSDOH indoor/outdoor air databases, the ambient air sample results AA-1, AA-2 and AA-3 are typical of outdoor air background concentrations and not necessarily reflective of gasoline sources.

4. Appendix D, page 6, and also page 12. "*Forensic analysis of the NAPL from the site would*

rovide a helpful source signature". Comment: The Departments agree this would be the best approach in establishing the chemical constituents to compare against both soil vapor results and groundwater results. Therefore, the Departments request such an analysis be performed.

5. Appendix D, page 15, *"MW-11 had trace levels ... GW-1 had no detections of VOCs ..."* Comment: Reference to these 2 wells should be reversed.

Please contact me at 518-402-9662 if you have any questions.

Sincerely,

Bernard Franklin

Bernard Franklin
Environmental Engineer
Remedial Bureau C

cc: T. Young, National Grid
R. Fedigan, DOH
I. Ushe, DOH
P. Taylor, NYSDEC, Region 6

nationalgrid

Steven P. Stucker, C.P.G.
Senior Environmental Engineer

August 13, 2007

Mr. Bernard Franklin
Environmental Engineer
Remedial Bureau C, 11th Floor
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

<u>Re:</u> Ogdensburg (King St.) Non-Owned Former MGP Site
Site #VO0479-6
Response to NYSDEC's July 16, 2007 Comments on Soil Vapor Intrusion Evaluation Sampling Report

Dear Bernie:

This letter presents National Grid's responses to the comments provided by New York State Department of Environmental Conservation (NYSDEC) and NYS Department of Health (NYSDOH) in your letter dated July 16, 2007 regarding the referenced site. Specifically, these comments pertained to the *Results of Soil Vapor Intrusion Evaluation Sampling*, which was submitted to the NYSDEC on June 29, 2007. For ease of your review, this letter presents the NYSDEC/NYSDOH comments in italics, followed by our response.

NYSDOH/NYSDEC Comment 1:

Page 3 of 4, third bullet. *"Groundwater from MW-12R contains elevated, BTEX and naphthalene, likely from petroleum source."* The Departments do not accept this interpretation. The data from additional work scheduled in the next phase of the Remedial Investigation is needed to clarify groundwater flow direction in bedrock. Additionally, as noted in Comment #4 below, a source signature is needed for an adequate forensics comparison.

Response:

Although the constituents in ground water from MW-12R are indicative of petroleum and not MGP residual, we agree that the additional data to be collected during the impending Supplemental Remedial Investigation (SRI) activities will provide more evidence regarding this finding. In addition to evaluating the groundwater flow direction in the bedrock, National Grid also plans to collect a "source" sample(s) from the site during the SRI activities to further evaluate whether the constituents detected in groundwater at MW-12R could be MGP-related.

NYSDOH/NYSDEC Comment 2:

Page 3 of 4, fourth bullet. *"Soil vapor sample VP-1A and VP-3 contained a hydrocarbon signature, but the signature did not resemble coal tar.* Appendix D, Page 6 *"The sample signature does not match any known finished petroleum material, including automotive gasoline"*. This does not exclude a BTEX contribution from the MGP source. The origin and qualitative data for the MGP Tar Vapor example used in Figure 4 was not adequately identified and should be provided.

Response:

NewFields maintains a library which contains data from petroleum products and MGP tars. The MGP tar vapor example used in Figure 4 was from an MGP tar at a site in Pennsylvania. Attached is a chromatogram of another MGP tar vapor sample from a site in New York for comparison. The chromatogram in Figure 4 was meant to be a visual tool to show the typical vapor fingerprint of an MGP tar. The important characteristics of the chromatogram in Figure 4 and in the attached is the presence of indene, naphthalene and styrene. Note that naphthalene and indene were not detected in the site source vapor sample collected immediately adjacent to a known source of MGP tar (VP-3, inside the footprint of the tar well). Only trace levels of styrene were detected in VP-3. Also important to note is the complete absence of isooctane and the other trimethylpentane isomers in the typical MGP vapor fingerprint chromatograms in Figure 4 and the attached. These compounds were detected in the soil vapor, indoor air, and ambient air samples, as well as the indoor air samples collected by the NYSDOH. These compounds are typically associated with gasoline and not MGP tars.

NYSDOH/NYSDEC Comment 3:

Page 3 of 4, fifth bullet. "*Ambient air samples AA-1, AA-2 and AA-3 contained trace levels of VOCs likely associated with gasoline;*, According to the EPA and NYSDOH indoor/outdoor air databases, the ambient air sample results AA-1, AA-2 and AA-3 are typical of outdoor air background concentrations and not necessarily reflective of gasoline sources.

Response:

Comment noted; however, it is reasonable to assume, given the ubiquitous use of gasoline, that gasoline could have contributed VOCs to the ambient air samples.

NYSDOH/NYSDEC Comment 4:

Appendix D, page 6, and also 12. *"Forensic analysis of the NAPL from the site would provide a helpful source signature"*. The Departments agree this would be the best approach in establishing the chemical constituents to compare against soil vapor results and groundwater results. Therefore, the Departments request such an analysis be performed.

Response:

As acknowledged under our response to Comment 1, National Grid does plan to collect a source sample(s) from the site.

NYSDOH/NYSDEC Comment 5:

Appendix D, page 15, *"MW-11 had trace levels....GW-1 had no detections of VOCs..."* Reference to these 2 wells should be reversed.

Response:

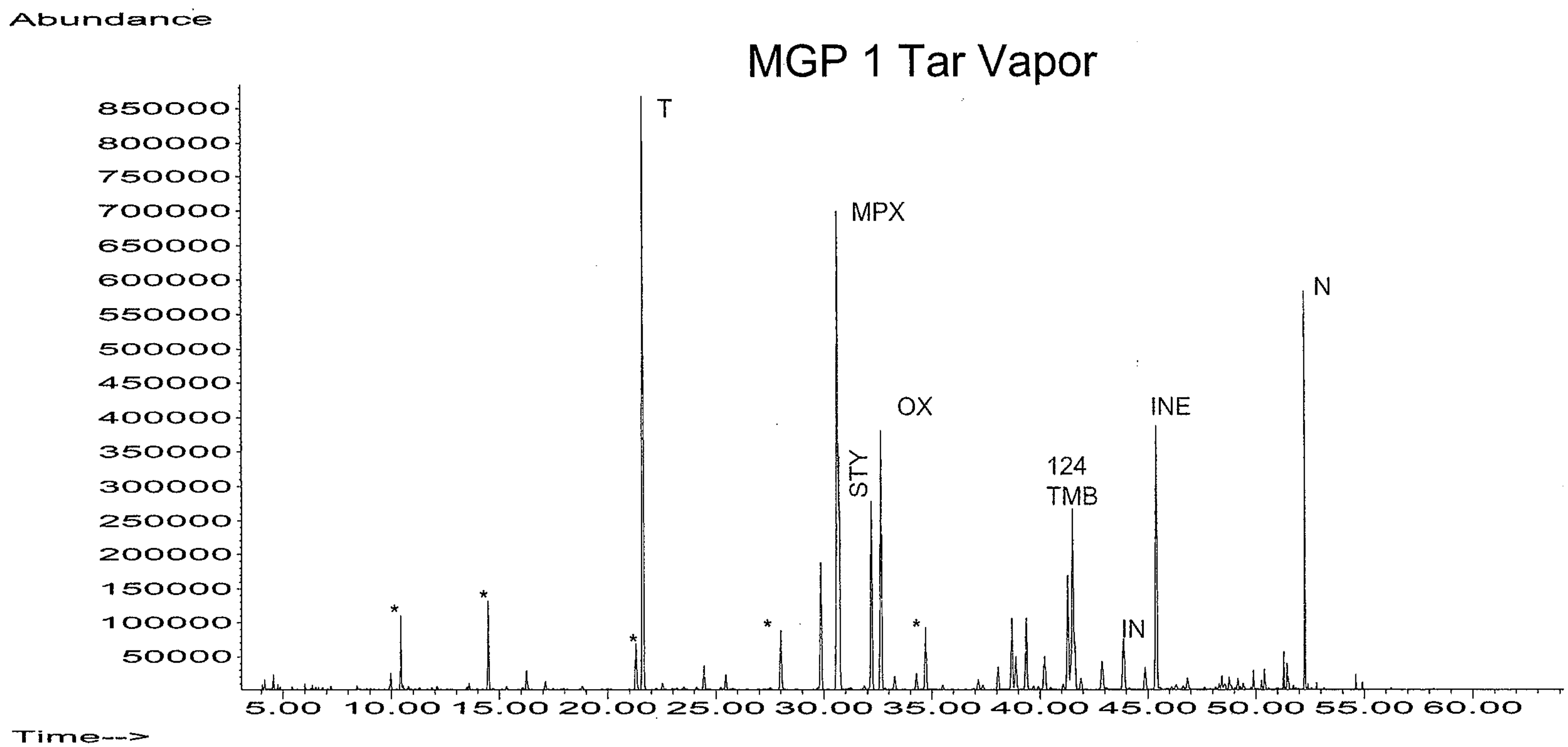
Agreed.

If you have any questions regarding our response to your July 16, 2007 comments, please feel free to contact me at (315) 428-5652.

Sincerely,

Steven P. Stucker
Environmental Department

Cc w/att.:
Terry Young, National Grid
William Holzhauer, Esq., National Grid
George Heitzman, P.E., New York State Department of Environmental Conservation
Richard Fedigan, New York State Department of Health
Ian Ushe, New York State Department of Health
Scott Powlin, ARCADIS BBL


Abundance
MGP 1 Tar Vapor
850000
800000
750000
700000
650000
600000
550000
500000
450000
400000
350000
300000
250000
200000
150000
100000
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MPX
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124
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5.00 10.00 15.00 20.00 25.00 30.00 35.00 40.00 45.00 50.00 55.00 60.00
Time-->

nationalgrid

Steven P. Stucker, C.P.G.
Lead Engineer
Environmental Department

April 2, 2009

Mr. Justin Woods
Director of Planning and Development
City of Ogdensburg
City Hall
330 Ford Street
Ogdensburg, NY 13669

Re: Results of Soil Vapor and Ambient Air Sampling on St. Lawrence Foods Property
Ogdensburg (King Street) Non-Owned Former Manufactured Gas Plant (MGP) Site

Dear Mr. Woods:

Thanks for taking the time to meet with us on Tuesday to discuss our on-going former manufactured gas plant (MGP) remedial investigation on King Street, and particularly the soil vapor intrusion (SVI) results on the former St. Lawrence Food Corporation (SLFC) property. As you indicated, the City is the current owner of the former SLFC property, therefore we are required to forward the enclosed summary of volatile organic compound (VOC) analytical results for the soil vapor and outdoor (ambient) air samples collected on the southern end of the SLFC property. The sampling was conducted by National Grid on December 16, 2008, in cooperation with the New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH), in order to evaluate the potential for soil vapor from the former MGP site to exist on the SLFC property.

Soil vapor samples (denoted with "SV") were collected from three locations (locations SV-1, SV-2, and SV-3) and an ambient air sample (Ambient-1) was collected upwind (west) of the soil vapor sampling points. Figure 1 shows the approximate sampling locations and Table 1 presents the comprehensive list of soil vapor and ambient air results.

As presented in Table 1, a mix of volatile compounds were detected in the three soil vapor samples. Based on an evaluation of the data, the detected volatile compounds likely originate from other unknown sources such as refrigerants, cleaning solvents, gasoline, and a light petroleum solvent (e.g., paint thinner), which are not associated with the former MGP site. Based on these results, National Grid, the NYSDEC, and the NYSDOH concur that no additional soil vapor sampling is required by National Grid at this time.

If you have any questions concerning the enclosed data, please contact Mr. Ian Ushe of the NYSDOH at 1.800.458.1158, ext. 27880, or Mr. Bernard Franklin of the NYSDEC at 518-402-9662. In addition, I can be reached at 315.428.5652.

Sincerely,

Steven P. Stucker
Environmental Department

xc:
Bernard Franklin, New York State Department of Environmental Conservation
Ian Ushe, New York State Department of Health
Peter Ouderkirk, New York State Department of Environmental Conservation
Scott Nostrand, Barton & Loguidice
Scott Powlin, ARCADIS
Linda Sullivan, National Grid
Pat Collette, National Grid

Environmental Department, 300 Erie Boulevard West, Syracuse, New York 13202
T: (315) 428-5652 F: (315) 460-8805 steven.stucker@us.ngrid.com www.nationalgrid.com

TABLE 1
SOIL VAPOR AND AMBIENT AIR SAMPLING RESULTS FOR SAMPLES COLLECTED ON ST. LAWRENCE FOODS PROPERTY

NATIONAL GRID
OGDENSBURG (KING ST.) FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Date Collected:	Units	AMBIENT-1 12/16/08	SV-1 12/16/08	SV-2 12/16/08	SV-3 12/16/08
Volatile Organic Compounds					
1,1,1-Trichloroethane	ug/m3	ND	0.46 J	ND	1.5 J [1.5 J]
1,1,2,2-Tetrachloroethane	ug/m3	ND	ND	ND	ND [ND]
1,1,2-Trichloroethane	ug/m3	ND	ND	ND	ND [ND]
1,1-Dichloroethane	ug/m3	ND	ND	ND	ND [ND]
1,1-Dichloroethene	ug/m3	ND	ND	ND	ND [ND]
1,2,3-Trimethylbenzene	ug/m3	ND	ND	ND	ND [ND]
1,2,4-Trichlorobenzene	ug/m3	ND	ND	ND	ND [ND]
1,2,4-Trimethylbenzene	ug/m3	ND	3.0	ND	5.4 J [4.3 J]
1,2-Dibromoethane	ug/m3	ND	ND	ND	ND [ND]
1,2-Dichlorobenzene	ug/m3	ND	ND	ND	ND [ND]
1,2-Dichloroethane	ug/m3	ND	ND	ND	ND [ND]
1,2-Dichloropropane	ug/m3	ND	ND	ND	ND [ND]
1,2-Dichlorotetrafluoroethane	ug/m3	ND	ND	ND	ND [ND]
1,3,5-Trimethylbenzene	ug/m3	ND	0.77 J	ND	1.6 J [1.1 J]
1,3-Butadiene	ug/m3	ND	ND	ND	ND [ND]
1,3-Dichlorobenzene	ug/m3	ND	ND	ND	ND [ND]
1,4-Dichlorobenzene	ug/m3	ND	ND	ND	ND [ND]
1,4-Dioxane	ug/m3	ND	ND	ND	ND [ND]
1-Methylnaphthalene	ug/m3	ND	ND	ND	ND [ND]
2,2,4-Trimethylpentane	ug/m3	ND	0.74 J	ND	ND [ND]
2-Chlorotoluene	ug/m3	ND	ND	ND	ND [ND]
2-Methylnaphthalene	ug/m3	ND	ND	ND	ND [ND]
3-Chloropropene	ug/m3	ND	ND	ND	ND [ND]
4-Ethyltoluene	ug/m3	ND	0.85 J	ND	ND [ND]
Acetone	ug/m3	20 J	120 J	74 J	110 J [91 J]
Benzene	ug/m3	0.60 J	3.0	ND	4.6 J [4.0 J]
Benzyl Chloride	ug/m3	ND	ND	ND	ND [ND]
Bromodichloromethane	ug/m3	ND	ND	ND	ND [ND]
Bromoethene	ug/m3	ND	ND	ND	ND [ND]
Bromoform	ug/m3	ND	ND	ND	ND [ND]
Bromomethane	ug/m3	ND	ND	ND	ND [ND]
Carbon Disulfide	ug/m3	0.32 J	0.21 J	5.6 J	0.85 J [0.72 J]
Carbon Tetrachloride	ug/m3	0.40 J	0.37 J	ND	1.2 J [0.37 J]
Chlorobenzene	ug/m3	ND	ND	ND	ND [ND]
Chloroethane	ug/m3	ND	ND	ND	ND [ND]
Chloroform	ug/m3	ND	1.0	ND	1.4 J [ND]
Chloromethane	ug/m3	1.1 J	1.1 J	ND	4.7 J [ND]
cis-1,2-Dichloroethene	ug/m3	ND	ND	ND	4.2 J [4.2 J]
cis-1,3-Dichloropropene	ug/m3	ND	ND	ND	ND [ND]
Cyclohexane	ug/m3	1.3 J	2.3	ND	ND [ND]
Dibromochloromethane	ug/m3	ND	ND	ND	ND [ND]
Dichlorodifluoromethane	ug/m3	2.2 J	620 DJ	14 J	2.1 J [1.9 J]
Ethylbenzene	ug/m3	ND	2.4	ND	5.1 J [3.4 J]
Freon TF	ug/m3	0.52 J	0.43 J	ND	0.58 J [0.54 J]
Hexachlorobutadiene	ug/m3	ND	ND	ND	ND [ND]

See Notes on Page 2.

TABLE 1
SOIL VAPOR AND AMBIENT AIR SAMPLING RESULTS FOR SAMPLES COLLECTED ON ST. LAWRENCE FOODS PROPERTY

NATIONAL GRID
OGDENSBURG (KING ST.) FORMER MGP SITE
OGDENSBURG, NEW YORK

Location ID: Date Collected:	Units	AMBIENT-1 12/16/08	SV-1 12/16/08	SV-2 12/16/08	SV-3 12/16/08
Volatile Organic Compounds					
Indane	ug/m3	ND	ND	ND	ND [ND]
Indene	ug/m3	ND	ND	ND	ND [ND]
Isopropyl Alcohol	ug/m3	1.1 J	3.8 J	ND	ND [ND]
m&p-Xylene	ug/m3	ND	8.4	ND	17 J [11 J]
Methyl Butyl Ketone	ug/m3	0.38 J	ND	ND	1.9 J [1.6 J]
Methyl Ethyl Ketone	ug/m3	3.2	15	ND	ND [ND]
Methyl Isobutyl Ketone	ug/m3	0.38 J	0.56 J	ND	0.95 J [0.86 J]
Methylene Chloride	ug/m3	3.2	7.1	15 J	ND [2.4 J]
Methyl-tert-butyl ether	ug/m3	ND	ND	ND	ND [ND]
Naphthalene	ug/m3	ND	ND	ND	ND [0.48 J]
n-Butane	ug/m3	1.6	18	48,000 DJ	380 DJ [390 DJ]
n-Decane	ug/m3	ND	3.1 J	9.5 J	8.6 J [5.5 J]
n-Dodecane	ug/m3	ND	0.61 J	ND	ND [1.4 J]
n-Heptane	ug/m3	0.66 J	2.7	1,700 J	85 J [94 J]
n-Hexane	ug/m3	0.49 J	3.7	11,000 DJ	330 DJ [380 DJ]
n-Nonane	ug/m3	ND	0.30 J	50 J	1.4 J [1.7 J]
n-Octane	ug/m3	ND	0.39 J	310 J	9.0 J [10 J]
n-Undecane	ug/m3	ND	2.9 J	ND	5.4 J [4.9 J]
Pentane	ug/m3	0.70 J	7.8	26,000 DJ	550 DJ [600 DJ]
Styrene	ug/m3	ND	ND	ND	ND [ND]
tert-Butyl Alcohol	ug/m3	2.1 J	2.5 J	2.7 J	3.5 J [2.7 J]
Tetrachloroethene	ug/m3	ND	ND	ND	ND [ND]
Thiophene	ug/m3	ND	ND	ND	ND [ND]
Toluene	ug/m3	0.95	14	12 J	20 J [15 J]
trans-1,2-Dichloroethene	ug/m3	ND	ND	ND	ND [ND]
trans-1,3-Dichloropropene	ug/m3	ND	ND	ND	ND [ND]
Trichloroethene	ug/m3	ND	ND	ND	5.4 J [5.4 J]
Trichlorofluoromethane	ug/m3	1.1	1.8	ND	1.1 J [1.1 J]
Vinyl Chloride	ug/m3	ND	ND	ND	ND [ND]
Xylene (o)	ug/m3	ND	3.3	ND	6.7 J [4.5 J]

Notes:
J = Estimated Value.
ND = Not Detected.

CITY:SYR DIV/GROUP:141 DB:WLJ LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\SYRACUSE\ACT\B0036671\0000\00010\DWG\36671P02.DWG LAYOUT: 1SAVED: 3/18/2009 1:09 PM ACADVER: 17.0S (LMS TECH) PAGESETUP: —PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 3/18/2009 1:13 PM BY: JONES, WENDY
XREFS: IMAGES: 36671X01.sld PROJECTNAME: —

LEGEND:

△ SOIL VAPOR SAMPLING POINT

○ AMBIENT AIR SAMPLING POINT

TAR WELL — FEATURE FROM 1909 SANBORN MAP

TAR WELL — FEATURE FROM SEPTEMBER 1925 SANBORN MAP

APPROXIMATE SITE BOUNDARY

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.

0 80' 160'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK

REMEDIAL INVESTIGATION

SOIL VAPOR AND AMBIENT AIR SAMPLING LOCATIONS ON ST. LAWRENCE FOODS PROPERTY

ARCADIS

FIGURE 1

Powlin, Scott

From: Powlin, Scott
Sent: Tuesday, December 30, 2008 10:20 AM
To: 'Bernard Franklin'; 'Zwelonke I. Ushe'
Cc: 'Stucker, Steven P.'; Young, Terry W
Subject: Ogdensburg MGP - Preliminary Soil Vapor Sampling Results for Samples Collected on Primo Foods Property
Attachments: Primo preliminary SVI data.pdf

Bernie and Ian:

On behalf of Steve Stucker with National Grid, the attached pdf contains preliminary soil vapor sampling results for samples collected along the southern edge of the Primo Foods building which is located north of the Ogdensburg Former MGP site. The attached PDF also shows the approximate location of the samples. The samples were identified as SV-1 through SV-3 in the lab sheets....these are the PSV-1 through PSV-3 locations shown on the map. We will prepare a validation report once the full data packages are received and assemble a report of these results shortly thereafter. The results will also be provided to the property owner within 30 days of validation.

Please contact Steve at Steven.Stucker@us.ngrid.com or 315-428-5652 if you have any questions.

Hope your holidays are going well.
Scott

ARCADIS
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6723 Towpath Road
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Syracuse, New York 13214-0066

Phone: 315.671.9456
Fax: 315.446.8053
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LEGEND:

B-20 △	PROPOSED SOIL BORING
MW-18 ⊕	PROPOSED MONITORING WELL
PSV-1	PROPOSED SOIL VAPOR SAMPLE POINT
MW-10 ⊕	MONITORING WELL
VP-1 △	SOIL VAPOR SAMPLING POINT
PZ-1 ◎	PIEZOMETER
HA-1	HAND-AUGER BORING
	TEST PIT
B-1 ▲	SOIL BORING
SS-01 △	SURFACE SOIL SAMPLE
PW-1 ◉	APPROXIMATE LOCATION OF PRODUCTION WELL LOCATED INSIDE PRIMO FOODS FACILITY
TAR WELL	FEATURE FROM 1909 SANBORN MAP
TAR WELL	FEATURE FROM SEPTEMBER 1925 SANBORN MAP
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE ROAD RIGHT-OF WAY
	CHAINLINK FENCE
	UTILITY POLE
□	CATCH BASIN
Ⓢ	MANHOLE
258	TOPOGRAPHIC CONTOUR (2 FT. CONTOUR INTERVAL)

NOTES:

1. BASE MAP FROM SURVEY BY WCT SURVEYORS, P.C., ON 11/21/2003, 12/22/2003 AND 4/7/2004. ELEVATIONS ARE BASED ON THE NAVD 88 DATUM. BASE MAP UPDATED BY C.T. MALE SURVEYORS ON SEPTEMBER 7, 2006.
2. HISTORICAL FEATURE LOCATIONS AND SCALE ARE APPROXIMATE.

0 100' 200'

GRAPHIC SCALE

NATIONAL GRID
OGDENSBURG (KING STREET) NON-OWNED FORMER MGP SITE
OGDENSBURG, NEW YORK
REMEDIAL INVESTIGATION

PROPOSED INVESTIGATION LOCATIONS

ARCADIS

FIGURE
1

ARCADIS U.S., Inc.

Client Sample ID: SV-1

GC/MS Volatiles

Lot-Sample #	H8L170300 - 001	Work Order #	K4WLF1AA	Matrix.........:	AIR
Date Sampled...:	12/16/2008	Date Received..:	12/17/2008		
Prep Date.........:	12/18/2008	Analysis Date...	12/18/2008		
Prep Batch #.....:	8354075				
Dilution Factor.:	1	Method..............:	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	**49**	**5.0**	**120**		**12**
1,4-Dioxane	ND	0.50	ND		1.8
Ethylbenzene	**0.54**	**0.20**	**2.4**		**0.87**
Trichlorofluoromethane	**0.32**	**0.20**	**1.8**		**1.1**
n-Heptane	**0.65**	**0.50**	**2.7**		**2.0**
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	**1.1**	**0.50**	**3.7**		**1.8**
2-Hexanone	ND	0.50	ND		2.0
2,2,4-Trimethylpentane	**0.16**	**0.50**	**0.74**	**J**	**2.3**
Isopropyl alcohol	**1.5**	**2.0**	**3.8**	**J**	**4.9**
tert-Butyl alcohol	**0.83**	**2.0**	**2.5**	**J**	**6.1**
Methylene chloride	**2.0**	**0.50**	**7.1**	**B**	**1.7**
2-Methylnaphthalene	ND	2.5	ND		15
Naphthalene	ND	0.50	ND		2.6
Benzene	**0.93**	**0.20**	**3.0**		**0.64**
n-Octane	**0.083**	**0.40**	**0.39**	**J**	**1.9**
Pentane	**2.7**	**1.0**	**7.8**		**3.0**
Benzyl chloride	ND	0.40	ND		2.1
Styrene	ND	0.20	ND		0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	ND	0.20	ND		1.4
Toluene	**3.7**	**0.20**	**14**		**0.75**
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	**0.084**	**0.20**	**0.46**	**J**	**1.1**
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	ND	0.20	ND		1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.057**	**0.20**	**0.43**	**J**	**1.5**
1,2,4-Trimethylbenzene	**0.60**	**0.20**	**3.0**		**0.98**
1,3,5-Trimethylbenzene	**0.16**	**0.20**	**0.77**	**J**	**0.98**
Vinyl chloride	ND	0.20	ND		0.51
o-Xylene	**0.75**	**0.20**	**3.3**		**0.87**
1-Methylnaphthalene	ND	2.5	ND		15
Methyl tert-butyl ether	ND	1.0	ND		3.6
n-Decane	**0.53**	**1.0**	**3.1**	**J**	**5.8**
n-Dodecane	**0.087**	**1.0**	**0.61**	**J**	**7.0**
n-Undecane	**0.46**	**1.0**	**2.9**	**J**	**6.4**
Nonane	**0.057**	**0.50**	**0.30**	**J**	**2.6**

ARCADIS U.S., Inc.

Client Sample ID: SV-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 001 **Work Order #** K4WLF1AA **Matrix.........:** AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	**1.9**	**0.20**	**8.4**		**0.87**
Bromodichloromethane	ND	0.20	ND		1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND		1.5
2-Butanone (MEK)	**5.2**	**1.0**	**15**		**2.9**
4-Methyl-2-pentanone (MIBK)	**0.14**	**0.50**	**0.56**	**J**	**2.0**
Vinyl bromide	ND	0.20	ND		0.87
n-Butane	**7.7**	**0.40**	**18**		**0.95**
Bromoform	ND	0.20	ND		2.1
Bromomethane	ND	0.20	ND		0.78
Indene	ND	0.40	ND		1.9
1,3-Butadiene	ND	0.40	ND		0.88
4-Ethyltoluene	**0.17**	**0.40**	**0.85**	**J**	**2.0**
Thiophene	ND	0.20	ND		0.69
Carbon disulfide	**0.067**	**0.50**	**0.21**	**J**	**1.6**
Carbon tetrachloride	**0.059**	**0.20**	**0.37**	**J**	**1.3**
Chlorobenzene	ND	0.20	ND		0.92
1,2,3-Trimethylbenzene	ND	0.20	ND		0.98
Dibromochloromethane	ND	0.20	ND		1.7
Chloroethane	ND	0.20	ND		0.53
Chloroform	**0.21**	**0.20**	**1.0**		**0.98**
Chloromethane	**0.51**	**0.50**	**1.1**		**1.0**
3-Chloropropene	ND	0.20	ND		0.63
Indane	ND	0.20	ND		0.97
2-Chlorotoluene	ND	0.40	ND		2.1
Cyclohexane	**0.67**	**0.50**	**2.3**		**1.7**
1,2-Dichlorobenzene	ND	0.20	ND		1.2
1,3-Dichlorobenzene	ND	0.20	ND		1.2
1,4-Dichlorobenzene	ND	0.20	ND		1.2
Dichlorodifluoromethane	**110**	**0.20**	**540**	**E**	**0.99**
1,1-Dichloroethane	ND	0.20	ND		0.81
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	ND	0.20	ND		0.79
trans-1,2-Dichloroethene	ND	0.20	ND		0.79
1,2-Dichloropropane	ND	0.20	ND		0.92
cis-1,3-Dichloropropene	ND	0.20	ND		0.91

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
ethanol	ND	ppb(v/v)
1,2,3,4-tetramethylbenzene	ND	ppb(v/v)
1,2,3,5-tetramethylbenzene	ND	ppb(v/v)
1,2,4,5-tetramethylbenzene	ND	ppb(v/v)

ARCADIS U.S., Inc.

Client Sample ID: SV-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 001 **Work Order #** K4WLF1AA **Matrix.........:** AIR

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	99	70 - 130

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
E	Estimated result. Result concentration exceeds the calibration range.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SV-1

GC/MS Volatiles

Lot-Sample #	H8L170300 - 001	**Work Order #**	K4WLF2AA	**Matrix.........:**	AIR
Date Sampled...:	12/16/2008	**Date Received..:**	12/17/2008		
Prep Date.........:	12/19/2008	**Analysis Date...**	12/19/2008		
Prep Batch #.....:	8357094				
Dilution Factor.:	4	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
Dichlorodifluoromethane	**130**	**0.80**	**620**	**D**	**4.0**

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	99	70 - 130

Qualifiers

D	Result was obtained from the analysis of a dilution.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SV-2

GC/MS Volatiles

Lot-Sample #	H8L170300 - 002	**Work Order #**	K4WLW1AA	**Matrix.........:**	AIR
Date Sampled...:	12/16/2008	**Date Received..:**	12/17/2008		
Prep Date.........:	12/18/2008	**Analysis Date...**	12/19/2008		
Prep Batch #.....:	8354075				
Dilution Factor.:	18.18	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	3.6	ND		17
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	ND		25
Acetone	**31**	**91**	**74**	**J**	**220**
1,4-Dioxane	ND	9.1	ND		33
Ethylbenzene	ND	3.6	ND		16
Trichlorofluoromethane	ND	3.6	ND		20
n-Heptane	**430**	**9.1**	**1700**		**37**
Hexachlorobutadiene	ND	18	ND		190
n-Hexane	**2000**	**9.1**	**6900**	**E**	**32**
2-Hexanone	ND	9.1	ND		37
2,2,4-Trimethylpentane	ND	9.1	ND		42
Isopropyl alcohol	ND	36	ND		89
tert-Butyl alcohol	**0.90**	**36**	**2.7**	**J**	**110**
Methylene chloride	**4.2**	**9.1**	**15**	**J B**	**32**
2-Methylnaphthalene	ND	45	ND		260
Naphthalene	ND	9.1	ND		48
Benzene	ND	3.6	ND		12
n-Octane	**67**	**7.3**	**310**		**34**
Pentane	**5200**	**18**	**15000**	**E**	**54**
Benzyl chloride	ND	7.3	ND		38
Styrene	ND	3.6	ND		15
1,1,2,2-Tetrachloroethane	ND	3.6	ND		25
Tetrachloroethene	ND	3.6	ND		25
Toluene	**3.1**	**3.6**	**12**	**J**	**14**
1,2,4-Trichlorobenzene	ND	18	ND		130
1,1,1-Trichloroethane	ND	3.6	ND		20
1,1,2-Trichloroethane	ND	3.6	ND		20
Trichloroethene	ND	3.6	ND		20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	3.6	ND		28
1,2,4-Trimethylbenzene	ND	3.6	ND		18
1,3,5-Trimethylbenzene	ND	3.6	ND		18
Vinyl chloride	ND	3.6	ND		9.3
o-Xylene	ND	3.6	ND		16
1-Methylnaphthalene	ND	45	ND		260
Methyl tert-butyl ether	ND	18	ND		66
n-Decane	**1.6**	**18**	**9.5**	**J**	**110**
n-Dodecane	ND	18	ND		130
n-Undecane	ND	18	ND		120
Nonane	**9.6**	**9.1**	**50**		**48**

ARCADIS U.S., Inc.

Client Sample ID: SV-2

GC/MS Volatiles

Lot-Sample # H8L170300 - 002 **Work Order #** K4WLW1AA **Matrix.........:** AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	ND	3.6	ND		16
Bromodichloromethane	ND	3.6	ND		24
1,2-Dibromoethane (EDB)	ND	3.6	ND		28
2-Butanone (MEK)	ND	18	ND		54
4-Methyl-2-pentanone (MIBK)	ND	9.1	ND		37
Vinyl bromide	ND	3.6	ND		16
n-Butane	**5900**	**7.3**	**14000**	**E**	**17**
Bromoform	ND	3.6	ND		38
Bromomethane	ND	3.6	ND		14
Indene	ND	7.3	ND		35
1,3-Butadiene	ND	7.3	ND		16
4-Ethyltoluene	ND	7.3	ND		36
Thiophene	ND	3.6	ND		13
Carbon disulfide	**1.8**	**9.1**	**5.6**	**J**	**28**
Carbon tetrachloride	ND	3.6	ND		23
Chlorobenzene	ND	3.6	ND		17
1,2,3-Trimethylbenzene	ND	3.6	ND		18
Dibromochloromethane	ND	3.6	ND		31
Chloroethane	ND	3.6	ND		9.6
Chloroform	ND	3.6	ND		18
Chloromethane	ND	9.1	ND		19
3-Chloropropene	ND	3.6	ND		11
Indane	ND	3.6	ND		18
2-Chlorotoluene	ND	7.3	ND		38
Cyclohexane	ND	9.1	ND		31
1,2-Dichlorobenzene	ND	3.6	ND		22
1,3-Dichlorobenzene	ND	3.6	ND		22
1,4-Dichlorobenzene	ND	3.6	ND		22
Dichlorodifluoromethane	**2.8**	**3.6**	**14**	**J**	**18**
1,1-Dichloroethane	ND	3.6	ND		15
1,2-Dichloroethane	ND	3.6	ND		15
1,1-Dichloroethene	ND	3.6	ND		14
cis-1,2-Dichloroethene	ND	3.6	ND		14
trans-1,2-Dichloroethene	ND	3.6	ND		14
1,2-Dichloropropane	ND	3.6	ND		17
cis-1,3-Dichloropropene	ND	3.6	ND		17

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
ethanol	ND	ppb(v/v)
1,2,3,4-tetramethylbenzene	ND	ppb(v/v)
1,2,3,5-tetramethylbenzene	ND	ppb(v/v)
1,2,4,5-tetramethylbenzene	ND	ppb(v/v)

ARCADIS U.S., Inc.

Client Sample ID: SV-2

GC/MS Volatiles

Lot-Sample # H8L170300 - 002 | Work Order # K4WLW1AA | Matrix.........: AIR

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	93	70 - 130

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
E	Estimated result. Result concentration exceeds the calibration range.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SV-2

GC/MS Volatiles

Lot-Sample #	H8L170300 - 002	**Work Order #**	K4WLW2AA	**Matrix.........:**	AIR
Date Sampled...:	12/16/2008	**Date Received..:**	12/17/2008		
Prep Date.........:	12/19/2008	**Analysis Date...**	12/19/2008		
Prep Batch #.....:	8357094				
Dilution Factor.:	329	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
n-Hexane	**3100**	**160**	**11000**	**D**	**580**
Pentane	**8800**	**330**	**26000**	**D**	**970**
n-Butane	**20000**	**130**	**48000**	**D**	**310**

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	95	70 - 130

Qualifiers

D Result was obtained from the analysis of a dilution.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SV-3

GC/MS Volatiles

Lot-Sample #	H8L170300 - 003	**Work Order #**	K4WL21AA	**Matrix.........:**	AIR
Date Sampled...:	12/16/2008	**Date Received..:**	12/17/2008		
Prep Date.........:	12/18/2008	**Analysis Date...**	12/18/2008		
Prep Batch #.....:	8354075				
Dilution Factor.:	1	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	**47**	**5.0**	**110**		**12**
1,4-Dioxane	ND	0.50	ND		1.8
Ethylbenzene	**1.2**	**0.20**	**5.1**		**0.87**
Trichlorofluoromethane	**0.20**	**0.20**	**1.1**		**1.1**
n-Heptane	**21**	**0.50**	**85**		**2.0**
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	**100**	**0.50**	**350**	**E**	**1.8**
2-Hexanone	**0.47**	**0.50**	**1.9**	**J**	**2.0**
2,2,4-Trimethylpentane	ND	0.50	ND		2.3
Isopropyl alcohol	ND	2.0	ND		4.9
tert-Butyl alcohol	**1.2**	**2.0**	**3.5**	**J**	**6.1**
Methylene chloride	**0.48**	**0.50**	**1.7**	**J B**	**1.7**
2-Methylnaphthalene	ND	2.5	ND		15
Naphthalene	ND	0.50	ND		2.6
Benzene	**1.4**	**0.20**	**4.6**		**0.64**
n-Octane	**1.9**	**0.40**	**9.0**		**1.9**
Pentane	**190**	**1.0**	**550**	**E**	**3.0**
Benzyl chloride	ND	0.40	ND		2.1
Styrene	ND	0.20	ND		0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	ND	0.20	ND		1.4
Toluene	**5.3**	**0.20**	**20**		**0.75**
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	**0.28**	**0.20**	**1.5**		**1.1**
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	**1.0**	**0.20**	**5.4**		**1.1**
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.075**	**0.20**	**0.58**	**J**	**1.5**
1,2,4-Trimethylbenzene	**1.1**	**0.20**	**5.4**		**0.98**
1,3,5-Trimethylbenzene	**0.32**	**0.20**	**1.6**		**0.98**
Vinyl chloride	ND	0.20	ND		0.51
o-Xylene	**1.5**	**0.20**	**6.7**		**0.87**
1-Methylnaphthalene	ND	2.5	ND		15
Methyl tert-butyl ether	ND	1.0	ND		3.6
n-Decane	**1.5**	**1.0**	**8.6**		**5.8**
n-Dodecane	ND	1.0	ND		7.0
n-Undecane	**0.85**	**1.0**	**5.4**	**J**	**6.4**
Nonane	**0.26**	**0.50**	**1.4**	**J**	**2.6**

ARCADIS U.S., Inc.

Client Sample ID: SV-3

GC/MS Volatiles

Lot-Sample # H8L170300 - 003 Work Order # K4WL21AA Matrix.........: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	**3.9**	**0.20**	**17**		**0.87**
Bromodichloromethane	ND	0.20	ND		1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND		1.5
2-Butanone (MEK)	ND	1.0	ND		2.9
4-Methyl-2-pentanone (MIBK)	**0.23**	**0.50**	**0.95**	**J**	**2.0**
Vinyl bromide	ND	0.20	ND		0.87
n-Butane	**140**	**0.40**	**340**	**E**	**0.95**
Bromoform	ND	0.20	ND		2.1
Bromomethane	ND	0.20	ND		0.78
Indene	ND	0.40	ND		1.9
1,3-Butadiene	ND	0.40	ND		0.88
4-Ethyltoluene	ND	0.40	ND		2.0
Thiophene	ND	0.20	ND		0.69
Carbon disulfide	**0.27**	**0.50**	**0.85**	**J**	**1.6**
Carbon tetrachloride	**0.18**	**0.20**	**1.2**	**J**	**1.3**
Chlorobenzene	ND	0.20	ND		0.92
1,2,3-Trimethylbenzene	ND	0.20	ND		0.98
Dibromochloromethane	ND	0.20	ND		1.7
Chloroethane	ND	0.20	ND		0.53
Chloroform	**0.28**	**0.20**	**1.4**		**0.98**
Chloromethane	**2.3**	**0.50**	**4.7**		**1.0**
3-Chloropropene	ND	0.20	ND		0.63
Indane	ND	0.20	ND		0.97
2-Chlorotoluene	ND	0.40	ND		2.1
Cyclohexane	ND	0.50	ND		1.7
1,2-Dichlorobenzene	ND	0.20	ND		1.2
1,3-Dichlorobenzene	ND	0.20	ND		1.2
1,4-Dichlorobenzene	ND	0.20	ND		1.2
Dichlorodifluoromethane	**0.42**	**0.20**	**2.1**		**0.99**
1,1-Dichloroethane	ND	0.20	ND		0.81
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	**1.1**	**0.20**	**4.2**		**0.79**
trans-1,2-Dichloroethene	ND	0.20	ND		0.79
1,2-Dichloropropane	ND	0.20	ND		0.92
cis-1,3-Dichloropropene	ND	0.20	ND		0.91

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
ethanol	ND	ppb(v/v)
1,2,3,4-tetramethylbenzene	ND	ppb(v/v)
1,2,3,5-tetramethylbenzene	ND	ppb(v/v)
1,2,4,5-tetramethylbenzene	ND	ppb(v/v)

ARCADIS U.S., Inc.

Client Sample ID: SV-3

GC/MS Volatiles

Lot-Sample # H8L170300 - 003 **Work Order #** K4WL21AA **Matrix.........:** AIR

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	100	70 - 130

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
E	Estimated result. Result concentration exceeds the calibration range.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: SV-3

GC/MS Volatiles

Lot-Sample #	H8L170300 - 003	**Work Order #**	K4WL22AA	**Matrix.........:**	AIR
Date Sampled...:	12/16/2008	**Date Received..:**	12/17/2008		
Prep Date.........:	12/19/2008	**Analysis Date...**	12/19/2008		
Prep Batch #.....:	8357094				
Dilution Factor.:	5	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
n-Hexane	93	2.5	330	D	8.8
Pentane	190	5.0	550	D	15
n-Butane	160	2.0	380	D	4.8

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	97	70 - 130

Qualifiers

D Result was obtained from the analysis of a dilution.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: DUP-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 004 Work Order # K4WL61AA Matrix.........: AIR

Date Sampled...: 12/16/2008 Date Received..: 12/17/2008
Prep Date.........: 12/18/2008 Analysis Date... 12/19/2008
Prep Batch #.....: 8354075
Dilution Factor.: 1 Method..............: TO-15

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	**38**	**5.0**	**91**		**12**
1,4-Dioxane	ND	0.50	ND		1.8
Ethylbenzene	**0.79**	**0.20**	**3.4**		**0.87**
Trichlorofluoromethane	**0.20**	**0.20**	**1.1**		**1.1**
n-Heptane	**23**	**0.50**	**94**		**2.0**
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	**110**	**0.50**	**370**	**E**	**1.8**
2-Hexanone	**0.38**	**0.50**	**1.6**	**J**	**2.0**
2,2,4-Trimethylpentane	ND	0.50	ND		2.3
Isopropyl alcohol	ND	2.0	ND		4.9
tert-Butyl alcohol	**0.88**	**2.0**	**2.7**	**J**	**6.1**
Methylene chloride	**0.69**	**0.50**	**2.4**	**B**	**1.7**
2-Methylnaphthalene	ND	2.5	ND		15
Naphthalene	**0.092**	**0.50**	**0.48**	**J**	**2.6**
Benzene	**1.2**	**0.20**	**4.0**		**0.64**
n-Octane	**2.2**	**0.40**	**10**		**1.9**
Pentane	**180**	**1.0**	**530**	**E**	**3.0**
Benzyl chloride	ND	0.40	ND		2.1
Styrene	ND	0.20	ND		0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	ND	0.20	ND		1.4
Toluene	**3.9**	**0.20**	**15**		**0.75**
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	**0.28**	**0.20**	**1.5**		**1.1**
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	**1.0**	**0.20**	**5.4**		**1.1**
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.071**	**0.20**	**0.54**	**J**	**1.5**
1,2,4-Trimethylbenzene	**0.88**	**0.20**	**4.3**		**0.98**
1,3,5-Trimethylbenzene	**0.23**	**0.20**	**1.1**		**0.98**
Vinyl chloride	ND	0.20	ND		0.51
o-Xylene	**1.0**	**0.20**	**4.5**		**0.87**
1-Methylnaphthalene	ND	2.5	ND		15
Methyl tert-butyl ether	ND	1.0	ND		3.6
n-Decane	**0.94**	**1.0**	**5.5**	**J**	**5.8**
n-Dodecane	**0.20**	**1.0**	**1.4**	**J**	**7.0**
n-Undecane	**0.76**	**1.0**	**4.9**	**J**	**6.4**
Nonane	**0.33**	**0.50**	**1.7**	**J**	**2.6**

ARCADIS U.S., Inc.

Client Sample ID: DUP-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 004 **Work Order #** K4WL61AA **Matrix.........:** AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	**2.6**	**0.20**	**11**		**0.87**
Bromodichloromethane	ND	0.20	ND		1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND		1.5
2-Butanone (MEK)	ND	1.0	ND		2.9
4-Methyl-2-pentanone (MIBK)	**0.21**	**0.50**	**0.86**	**J**	**2.0**
Vinyl bromide	ND	0.20	ND		0.87
n-Butane	**130**	**0.40**	**310**	**E**	**0.95**
Bromoform	ND	0.20	ND		2.1
Bromomethane	ND	0.20	ND		0.78
Indene	ND	0.40	ND		1.9
1,3-Butadiene	ND	0.40	ND		0.88
4-Ethyltoluene	ND	0.40	ND		2.0
Thiophene	ND	0.20	ND		0.69
Carbon disulfide	**0.23**	**0.50**	**0.72**	**J**	**1.6**
Carbon tetrachloride	**0.058**	**0.20**	**0.37**	**J**	**1.3**
Chlorobenzene	ND	0.20	ND		0.92
1,2,3-Trimethylbenzene	ND	0.20	ND		0.98
Dibromochloromethane	ND	0.20	ND		1.7
Chloroethane	ND	0.20	ND		0.53
Chloroform	ND	0.20	ND		0.98
Chloromethane	ND	0.50	ND		1.0
3-Chloropropene	ND	0.20	ND		0.63
Indane	ND	0.20	ND		0.97
2-Chlorotoluene	ND	0.40	ND		2.1
Cyclohexane	ND	0.50	ND		1.7
1,2-Dichlorobenzene	ND	0.20	ND		1.2
1,3-Dichlorobenzene	ND	0.20	ND		1.2
1,4-Dichlorobenzene	ND	0.20	ND		1.2
Dichlorodifluoromethane	**0.38**	**0.20**	**1.9**		**0.99**
1,1-Dichloroethane	ND	0.20	ND		0.81
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	**1.1**	**0.20**	**4.2**		**0.79**
trans-1,2-Dichloroethene	ND	0.20	ND		0.79
1,2-Dichloropropane	ND	0.20	ND		0.92
cis-1,3-Dichloropropene	ND	0.20	ND		0.91

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
ethanol	ND	ppb(v/v)
1,2,3,4-tetramethylbenzene	ND	ppb(v/v)
1,2,3,5-tetramethylbenzene	ND	ppb(v/v)
1,2,4,5-tetramethylbenzene	ND	ppb(v/v)

ARCADIS U.S., Inc.

Client Sample ID: DUP-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 004 Work Order # K4WL61AA Matrix.........: AIR

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	100	70 - 130

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
E	Estimated result. Result concentration exceeds the calibration range.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: DUP-1

GC/MS Volatiles

Lot-Sample #	H8L170300 - 004	**Work Order #**	K4WL62AA	**Matrix.........:**	AIR
Date Sampled...:	12/16/2008	**Date Received..:**	12/17/2008		
Prep Date.........:	12/19/2008	**Analysis Date...**	12/19/2008		
Prep Batch #.....:	8357094				
Dilution Factor.:	5	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
n-Hexane	**110**	**2.5**	**380**	**D**	**8.8**
Pentane	**200**	**5.0**	**600**	**D**	**15**
n-Butane	**170**	**2.0**	**390**	**D**	**4.8**

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	100	70 - 130

Qualifiers

D Result was obtained from the analysis of a dilution.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: AMBIENT-1

GC/MS Volatiles

Lot-Sample #	H8L170300 - 005	Work Order #	K4WMC1AA	Matrix........:	AIR
Date Sampled...:	12/16/2008	Date Received..:	12/17/2008		
Prep Date.........:	12/18/2008	Analysis Date...	12/19/2008		
Prep Batch #.....:	8354075				
Dilution Factor.:	1	Method.............:	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	**8.6**	**5.0**	**20**		**12**
1,4-Dioxane	ND	0.50	ND		1.8
Ethylbenzene	ND	0.20	ND		0.87
Trichlorofluoromethane	**0.20**	**0.20**	**1.1**		**1.1**
n-Heptane	**0.16**	**0.50**	**0.66**	**J**	**2.0**
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	**0.14**	**0.50**	**0.49**	**J**	**1.8**
2-Hexanone	**0.093**	**0.50**	**0.38**	**J**	**2.0**
2,2,4-Trimethylpentane	ND	0.50	ND		2.3
Isopropyl alcohol	**0.45**	**2.0**	**1.1**	**J**	**4.9**
tert-Butyl alcohol	**0.70**	**2.0**	**2.1**	**J**	**6.1**
Methylene chloride	**0.93**	**0.50**	**3.2**	**B**	**1.7**
2-Methylnaphthalene	ND	2.5	ND		15
Naphthalene	ND	0.50	ND		2.6
Benzene	**0.19**	**0.20**	**0.60**	**J**	**0.64**
n-Octane	ND	0.40	ND		1.9
Pentane	**0.24**	**1.0**	**0.70**	**J**	**3.0**
Benzyl chloride	ND	0.40	ND		2.1
Styrene	ND	0.20	ND		0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	ND	0.20	ND		1.4
Toluene	**0.25**	**0.20**	**0.95**		**0.75**
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	ND	0.20	ND		1.1
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	ND	0.20	ND		1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	**0.067**	**0.20**	**0.52**	**J**	**1.5**
1,2,4-Trimethylbenzene	ND	0.20	ND		0.98
1,3,5-Trimethylbenzene	ND	0.20	ND		0.98
Vinyl chloride	ND	0.20	ND		0.51
o-Xylene	ND	0.20	ND		0.87
1-Methylnaphthalene	ND	2.5	ND		15
Methyl tert-butyl ether	ND	1.0	ND		3.6
n-Decane	ND	1.0	ND		5.8
n-Dodecane	ND	1.0	ND		7.0
n-Undecane	ND	1.0	ND		6.4
Nonane	ND	0.50	ND		2.6

ARCADIS U.S., Inc.

Client Sample ID: AMBIENT-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 005 **Work Order #** K4WMC1AA **Matrix.........:** AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
m-Xylene & p-Xylene	ND	0.20	ND		0.87
Bromodichloromethane	ND	0.20	ND		1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND		1.5
2-Butanone (MEK)	**1.1**	**1.0**	**3.2**		**2.9**
4-Methyl-2-pentanone (MIBK)	**0.093**	**0.50**	**0.38**	**J**	**2.0**
Vinyl bromide	ND	0.20	ND		0.87
n-Butane	**0.68**	**0.40**	**1.6**		**0.95**
Bromoform	ND	0.20	ND		2.1
Bromomethane	ND	0.20	ND		0.78
Indene	ND	0.40	ND		1.9
1,3-Butadiene	ND	0.40	ND		0.88
4-Ethyltoluene	ND	0.40	ND		2.0
Thiophene	ND	0.20	ND		0.69
Carbon disulfide	**0.10**	**0.50**	**0.32**	**J**	**1.6**
Carbon tetrachloride	**0.064**	**0.20**	**0.40**	**J**	**1.3**
Chlorobenzene	ND	0.20	ND		0.92
1,2,3-Trimethylbenzene	ND	0.20	ND		0.98
Dibromochloromethane	ND	0.20	ND		1.7
Chloroethane	ND	0.20	ND		0.53
Chloroform	ND	0.20	ND		0.98
Chloromethane	**0.52**	**0.50**	**1.1**		**1.0**
3-Chloropropene	ND	0.20	ND		0.63
Indane	ND	0.20	ND		0.97
2-Chlorotoluene	ND	0.40	ND		2.1
Cyclohexane	**0.38**	**0.50**	**1.3**	**J**	**1.7**
1,2-Dichlorobenzene	ND	0.20	ND		1.2
1,3-Dichlorobenzene	ND	0.20	ND		1.2
1,4-Dichlorobenzene	ND	0.20	ND		1.2
Dichlorodifluoromethane	**0.45**	**0.20**	**2.2**		**0.99**
1,1-Dichloroethane	ND	0.20	ND		0.81
1,2-Dichloroethane	ND	0.20	ND		0.81
1,1-Dichloroethene	ND	0.20	ND		0.79
cis-1,2-Dichloroethene	ND	0.20	ND		0.79
trans-1,2-Dichloroethene	ND	0.20	ND		0.79
1,2-Dichloropropane	ND	0.20	ND		0.92
cis-1,3-Dichloropropene	ND	0.20	ND		0.91

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
ethanol	ND	ppb(v/v)
1,2,3,4-tetramethylbenzene	ND	ppb(v/v)
1,2,3,5-tetramethylbenzene	ND	ppb(v/v)
1,2,4,5-tetramethylbenzene	ND	ppb(v/v)

ARCADIS U.S., Inc.

Client Sample ID: AMBIENT-1

GC/MS Volatiles

Lot-Sample # H8L170300 - 005 **Work Order #** K4WMC1AA **Matrix.........:** AIR

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	98	70 - 130

Qualifiers

B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.
J	Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample #	H8L190000 - 075B	**Work Order #**	K41J81AA	**Matrix.........:**	AIR
	12/15/2008				
Prep Date.........:	12/18/2008	**Date Received..:**	12/16/2008		
		Analysis Date...	12/18/2008		
Prep Batch #.....:	8354075				
Dilution Factor.:	1	**Method..............:**	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)		REPORTING LIMIT (ug/m3)
trans-1,3-Dichloropropene	ND	0.20	ND		0.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.20	ND		1.4
Acetone	ND	5.0	ND		12
1,4-Dioxane	ND	0.50	ND		1.8
Ethylbenzene	ND	0.20	ND		0.87
Trichlorofluoromethane	ND	0.20	ND		1.1
n-Heptane	ND	0.50	ND		2.0
Hexachlorobutadiene	ND	1.0	ND		11
n-Hexane	ND	0.50	ND		1.8
2-Hexanone	ND	0.50	ND		2.0
2,2,4-Trimethylpentane	ND	0.50	ND		2.3
Isopropyl alcohol	ND	2.0	ND		4.9
tert-Butyl alcohol	ND	2.0	ND		6.1
Methylene chloride	**0.059**	**0.50**	**0.20**	**J**	**1.7**
2-Methylnaphthalene	ND	2.5	ND		15
Naphthalene	ND	0.50	ND		2.6
Benzene	ND	0.20	ND		0.64
n-Octane	ND	0.40	ND		1.9
Pentane	ND	1.0	ND		3.0
Benzyl chloride	ND	0.40	ND		2.1
Styrene	ND	0.20	ND		0.85
1,1,2,2-Tetrachloroethane	ND	0.20	ND		1.4
Tetrachloroethene	ND	0.20	ND		1.4
Toluene	ND	0.20	ND		0.75
1,2,4-Trichlorobenzene	ND	1.0	ND		7.4
1,1,1-Trichloroethane	ND	0.20	ND		1.1
1,1,2-Trichloroethane	ND	0.20	ND		1.1
Trichloroethene	ND	0.20	ND		1.1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	0.20	ND		1.5
1,2,4-Trimethylbenzene	ND	0.20	ND		0.98
1,3,5-Trimethylbenzene	ND	0.20	ND		0.98
Vinyl chloride	ND	0.20	ND		0.51
o-Xylene	ND	0.20	ND		0.87
1-Methylnaphthalene	ND	2.5	ND		15
Methyl tert-butyl ether	ND	1.0	ND		3.6
n-Decane	ND	1.0	ND		5.8
n-Dodecane	ND	1.0	ND		7.0
n-Undecane	ND	1.0	ND		6.4

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # H8L190000 - 075B   Work Order # K41J81AA   Matrix.........: AIR

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
Nonane	ND	0.50	ND	2.6
m-Xylene & p-Xylene	ND	0.20	ND	0.87
Bromodichloromethane	ND	0.20	ND	1.3
1,2-Dibromoethane (EDB)	ND	0.20	ND	1.5
2-Butanone (MEK)	ND	1.0	ND	2.9
4-Methyl-2-pentanone (MIBK)	ND	0.50	ND	2.0
Vinyl bromide	ND	0.20	ND	0.87
n-Butane	ND	0.40	ND	0.95
Bromoform	ND	0.20	ND	2.1
Bromomethane	ND	0.20	ND	0.78
Indene	ND	0.40	ND	1.9
1,3-Butadiene	ND	0.40	ND	0.88
4-Ethyltoluene	ND	0.40	ND	2.0
Thiophene	ND	0.20	ND	0.69
Carbon disulfide	ND	0.50	ND	1.6
Carbon tetrachloride	ND	0.20	ND	1.3
Chlorobenzene	ND	0.20	ND	0.92
1,2,3-Trimethylbenzene	ND	0.20	ND	0.98
Dibromochloromethane	ND	0.20	ND	1.7
Chloroethane	ND	0.20	ND	0.53
Chloroform	ND	0.20	ND	0.98
Chloromethane	ND	0.50	ND	1.0
3-Chloropropene	ND	0.20	ND	0.63
Indane	ND	0.20	ND	0.97
2-Chlorotoluene	ND	0.40	ND	2.1
Cyclohexane	ND	0.50	ND	1.7
1,2-Dichlorobenzene	ND	0.20	ND	1.2
1,3-Dichlorobenzene	ND	0.20	ND	1.2
1,4-Dichlorobenzene	ND	0.20	ND	1.2
Dichlorodifluoromethane	ND	0.20	ND	0.99
1,1-Dichloroethane	ND	0.20	ND	0.81
1,2-Dichloroethane	ND	0.20	ND	0.81
1,1-Dichloroethene	ND	0.20	ND	0.79
cis-1,2-Dichloroethene	ND	0.20	ND	0.79
trans-1,2-Dichloroethene	ND	0.20	ND	0.79
1,2-Dichloropropane	ND	0.20	ND	0.92
cis-1,3-Dichloropropene	ND	0.20	ND	0.91

TENTATIVELY INDENTIFIED COMPOUNDS	RESULT	UNITS
None		

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample # H8L190000 - 075B | Work Order # K41J81AA | Matrix.........: AIR

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	99	70 - 130

Qualifiers

J Estimated result. Result is less than RL.

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H8L190000 - 075C **Work Order #** K41J81AC **Matrix.........:** AIR

12/15/2008

Prep Date.........: 12/18/2008 **Date Received..:** 12/16/2008

Analysis Date... 12/18/2008

Prep Batch #.....: 8354075

Dilution Factor.: 1 **Method..............:** TO-15

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
Benzene	2.50	2.72	8.0	8.7	109	70 - 130
Toluene	2.50	2.26	9.4	8.5	91	70 - 130
Trichloroethene	2.50	2.53	13	14	101	70 - 130
Chlorobenzene	2.50	2.40	12	11	96	70 - 130
1,1-Dichloroethene	2.50	2.86	9.9	11	114	70 - 130

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	106	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: INTRA-LAB BLANK

GC/MS Volatiles

Lot-Sample #	H8L220000 - 094B	Work Order #	K442G1AA	Matrix.........:	AIR
	12/15/2008	Date Received..:	12/16/2008		
Prep Date.........:	12/19/2008	Analysis Date...	12/19/2008		
Prep Batch #.....:	8357094				
Dilution Factor.:	1	Method..............:	TO-15		

PARAMETER	RESULTS (ppb(v/v))	REPORTING LIMIT (ppb(v/v))	RESULTS (ug/m3)	REPORTING LIMIT (ug/m3)
n-Hexane	ND	0.50	ND	1.8
Pentane	ND	1.0	ND	3.0
n-Butane	ND	0.40	ND	0.95
Dichlorodifluoromethane	ND	0.20	ND	0.99

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	97	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)

ARCADIS U.S., Inc.

Client Sample ID: CHECK SAMPLE

GC/MS Volatiles

Lot-Sample # H8L220000 - 094C **Work Order #** K442G1AC **Matrix.........:** AIR

12/15/2008 **Date Received..:** 12/16/2008
Prep Date.........: 12/19/2008 **Analysis Date...** 12/19/2008
Prep Batch #.....: 8357094
Dilution Factor.: 1 **Method..............:** TO-15

PARAMETER	SPIKE AMOUNT (ppb(v/v))	MEASURED AMOUNT (ppb(v/v))	SPIKE AMOUNT (ug/m3)	MEASURED AMOUNT (ug/m3)	PERCENT RECOVERY	RECOVERY LIMITS
1,1-Dichloroethene	2.50	2.73	9.9	11	109	70 - 130
Benzene	2.50	2.84	8.0	9.1	114	70 - 130
Trichloroethene	2.50	2.77	13	15	111	70 - 130
Toluene	2.50	2.56	9.4	9.6	102	70 - 130
Chlorobenzene	2.50	2.55	12	12	102	70 - 130

SURROGATE	PERCENT RECOVERY	LABORATORY CONTROL LIMITS (%)
4-Bromofluorobenzene	104	70 - 130

The 'Result' in ug/m3 is calculated using the following equation: Amount Found(before rounding)*(Molecular Weight/24.45)

The 'Reporting Limit' in ug/m3 is calculated using the following equation: (Reporting Limit(before rounding) * Dilution Factor) * (Molecular Weight/24.45)