Feasibility Study Report
Millens Scrapyard Site (No. 356030)
Kingston, New York
Work Assignment D007624-17

Prepared for

New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7017

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Prepared by

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EA Project No. 14907.17

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I, Donald F. Conan, certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Feasibility Study Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for remedy selection and reporting (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Donald F. Conan, PE	17 August 2015	
Name	Date	Signature

17 August 2015
Donald F. Conan, P.E. — Date
Vice President

17 August 2015
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Project Manager

August 2015
Version: FINAL
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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	Microgram(s) per liter
ARAR	Appropriate or relevant and applicable requirement
bgs	Below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of concern
DER	Division of Environmental Remediation
EA	EA Engineering, P.C. and Its Affiliate EA Science and Technology
EPA	United States Environmental Protection Agency
ESI	Ecosystems Strategies, Inc.
FS	Feasibility study
ft	Feet (foot)
GRA	General response action
in.	Inch(es)
mi	Mile(s)
mg/kg	Milligram(s) per kilogram
No.	Number
NYCRR	New York Code of Rules and Regulations
NYSDEC	New York State Department of Conservation
ORC	Oxygen release compound
RAO	Remedial action objective
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
SCG	Standards, criteria, and guidance
SCO	Soil cleanup objective
SVOC	Semivolatile organic compound
VOC	Volatile organic compound

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1. INTRODUCTION AND PROJECT OVERVIEW

EA Engineering, P.C., and its affiliate EA Science and Technology (EA), under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment No. D007624-17) were tasked to perform a remedial investigation (RI) and feasibility study (FS) at the Millens Scrapyard site (NYSDEC Site No. 356030) located in the city of Kingston, Ulster County, New York (Figure 1-1).

1.1 PURPOSE AND SCOPE

A limited RI/FS was conducted for the Millens Scrapyard site in September 2004 by Ecosystems Strategies, Inc. (ESI) (2004). In February 2010, EA was contracted by NYSDEC to prepare a Draft FS based on information presented in the 2004 RI/FS. While EA was producing the Draft FS, site owner B. Millens Sons, Inc. self-implemented a remedial action at the site from September 2009 through December 2010 without NYSDEC approval. As a result of the remedial action, the FS drafted by EA was never finalized. In 2012, EA was contracted by NYSDEC to conduct an RI/FS to evaluate current site conditions and the effectiveness of the remedial action performed by the property owner. The focus of the RI was to characterize the nature and extent of any liners or caps emplaced during the remedial action, evaluate the characteristics of backfill material used to restore excavated areas to grade, and evaluate the nature and extent of remaining impacts to onsite soil and groundwater. Additionally, an area of offsite surface soil was investigated.

This FS Report has been prepared to develop and evaluate alternatives for remedial action and to determine which alternative is the most appropriate, cost effective, and protective of public health and the environment for the Millens Scrapyard site based on the RI conducted by EA and the results of that investigation.

This FS has been conducted in accordance with the most recent versions of the 1988 United States Environmental Protection Agency (EPA) *Guidance for Conducting RIs and FSs under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)* (EPA 1988) and NYSDEC *Division of Environmental Remediation (DER)-10, Technical Guidance for Site Investigation and Remediation* (NYSDEC 2010), and focused on a limited number of remedial alternatives proven effective at addressing remediation of site contaminants of concern (COCs) identified during the RI (EA 2014).

1.2 REPORT ORGANIZATION

This FS Report is organized as follows:

- ***Section 1***—Introduction and Project Overview
- ***Section 2***—Summary of RI and Exposure Assessment
- ***Section 3***—Development of Remedial Action Objectives (RAOs)
- ***Section 4***—General Response Actions (GRAs)

- ***Section 5***—Identification and Screening of Technologies
- ***Section 6***—Scoping and Development of Remedial Alternatives
- ***Section 7***—Costing and Evaluation Criteria
- ***Section 8***—Detailed Analysis of Alternatives and Recommendations
- ***Section 9***—References.

1.3 BACKGROUND

1.3.1 Site Location

The Millens Scrapyard site encompasses 74,528 square feet (ft) (1.7 acres) and is located at 230 East Strand Street, Kingston, New York in Ulster County at the confluence of Rondout Creek and the Hudson River (Figure 1-1). The site is situated in an industrialized area and is bordered on the east by North Street, on the north by East Strand Street, and on the south by a railroad right-of-way (Figure 1-2). The Millens Staging Area site (NYSDEC Site No. 356040) is located to the east of the scrapyard. Residential properties are located north and northwest of the site, and commercial property is located to the west. The property immediately west of the site historically operated as an oil storage facility consisting of storage tanks and a distribution depot (ESI 2004); the area is currently vacant. The former Kingston manufactured gas plant is located to the south, immediately opposite the railroad right-of-way. A natural gas transmission main is currently operated at the former manufactured gas plant. A 10-inch (in.) high pressure transmission line extends east from the manufactured gas plant site and generally along the railroad right-of-way. This transmission line angles northwest toward the Millens Staging Area.

1.3.2 Site History

For the past 50 plus years, the site has been used as a metal recycling and salvage yard. Scrap metal separation is the main activity conducted onsite. Over the years, various metals were stockpiled throughout the site. During the 1950s and into the early 1960s, electrical transformers were dismantled onsite (ESI 2004). A car crushing area was located in the northeast portion of the site. Before being crushed, vehicles were drained of fluids in the vehicle draining area located east of the car crusher. Once drained, vehicles were stored near the car crusher. Gasoline tanks were stored separately, southwest of the North Street gate (ESI 2004).

In 2009-2010, a remedial action was implemented and supervised by DT Consulting Services, Inc. Subsurface material was reportedly excavated from the site in a phased approach and disposed of offsite. The property was excavated in sections so that normal operations could continue at the site during remediation. After excavation activities were completed within each section, post-excavation soil samples were collected from the walls and floor of the excavated area, and submitted for laboratory analysis. Excavations were backfilled and a Claymax® LC Liner System was installed within each completed section. Concrete fragments, dust, and crushed stone were used for backfill at the site. No pre-characterization sampling and documentation was completed for backfill materials used to bring excavated areas to surface grade. An informal email to the NYSDEC from the property owner's attorney indicated that the

remedial action was conducted in accordance with the Remedial Action Plan prepared by DT Consulting Services, Inc. in 2006 (DT Consulting Services, Inc. 2006); construction activities were completed in December 2010.

In 2012, the scrapyard operations were relocated to a new property purchased by B. Millens Sons, Inc., and remaining scrap and equipment were removed from the site.

1.3.3 Current Site Features/Use

The site has remained vacant since the relocation of the scrapyard operations in 2012. The site's main existing features include a brick building located in the northwestern portion of the site. There is currently a concrete slab foundation and sprung structure at the former vehicle crushing area located in the northeastern portion of the site. The remainder of the site is generally open space. Based on the city of Kingston records, the site appears to be connected to the central water and sewer system, as well as electrical and natural gas services. The main building located on the northwestern portion of the property has several floor drains with no known discharge. No groundwater supply wells are located onsite (ESI 2004).

1.3.4 Physiography

The subject site is located on the U.S. Geological Survey Kingston East Quadrangle, New York 7.5-minute series topographic map, dated 1980 (Figure 1-3). Topography at the site is generally flat. Elevation at the site is approximately 8 ft above mean sea level, with a predominant downward slope to the southeast toward Rondout Creek. The nearest surface water features, as noted on the topographic map, are Rondout Creek (located approximately 0.04 mile [mi] south) and the Hudson River (located approximately 0.4 mi east). Rondout Creek flows to the northeast into the south-flowing Hudson River.

1.3.5 Site Geology

The site is located in the Hudson-Mohawk Lowlands physiographic province. The Hudson lowlands are bounded by the Catskill Mountains to the west and the Taconic Mountains to the east. A review of the Bedrock Geologic Map of New York, Lower Hudson Sheet published by the University of the State of New York, the State Education Department (1970), indicates that bedrock in this area is made up of units of the Ordovician Austin Glen Formation, which includes sedimentary graywacke and shale units. The Surficial Geologic Map of New York Lower Hudson Sheet (1989) indicates that the soils in the vicinity of the site are either fill material or recent deposits. The recent deposits are typically confined to the flood plain areas within the valley. The soils tend to be oxidized, non-calcareous, fine sand and gravels occasionally overlain by silt.

Based on a description of well logs available from drilling conducted in support of the RI/FS (ESI 2004), the surficial and subsurface deposits at the site likely consist of various fill materials.

The subsurface materials encountered during the 2014 RI formed two distinct layers. The uppermost layer from 1 to 6 ft below ground surface (bgs) consisted of rocky fill material mixed with occasional sand and silt, brick, and crushed stone and concrete dependent on the location. The next deepest layer represented native material, which consisted of a wet sand and silt layer. Subsurface material below this layer was not investigated during the RI. The total depth and extents of excavations completed during previous remedial actions were not well documented; however, subsurface soil material at the site in the upper 6 ft of overburden consists largely of mixed fill materials. A demarcation layer was observed in some test pits and soil borings at depths ranging from approximately 0.3 to 1.3 ft bgs (4-16 in. bgs). The material used for the demarcation layer/cover material was not always consistent within the excavation cell or between cells. The areas where the demarcation area was observed corresponded roughly with areas reported to have been excavated; however, the liner/demarcation layer was not observed in all areas that were reportedly excavated (e.g., SB-16, SB-17, TP-07, etc.). Additionally, it is unclear as to the purpose of the demarcation layer/liner considering the shallow depth and inconsistent material and placement. The liner, as placed, does not protect all fill material from recontamination because it is not placed over the entire site.

1.3.6 Site Hydrology/Hydrogeology

The highest groundwater elevations have been observed at MW-1, located along the northern site boundary of the Millens Scrapyard site (6.80 ft above mean sea level in January 2013 and 5.69 ft above mean sea level in October 2013). The lowest groundwater elevations have been observed in MW-6, located just east of the southeast corner of the site (2.09 ft above mean sea level in January 2013 and 1.95 ft above mean sea level in October 2013).

Based on gauging results, shallow groundwater flow is generally to the south and southeast across the site toward Rondout Creek (Figure 1-4). The horizontal gradient across the site generally ranged from 0.01 to 0.02, with a steeper gradient of approximately 0.03 in the easternmost portion of the site between wells MW-10 and MW-11.

The site is located adjacent to a flood plain with surface water drainage and overland flow to the southeast following the slope toward Rondout Creek, located approximately 235 ft south/southeast. Rondout Creek discharges to the Hudson River, located approximately 1,000 ft to the east. The Hudson River flows south to the New York Harbor and Atlantic Ocean.

NYSDEC identifies Rondout Creek south of the site as a Class C water body, meaning its best usage is for fishing (NYSDEC 2010). The Hudson River is classified as a Class A water body, meaning it is used for a source of drinking water, swimming and other recreation, and fishing. The Port Ewen drinking water intake is located on the Hudson River approximately 2.3 mi downstream from the confluence of Rondout Creek and the Hudson River.

2. SUMMARY OF REMEDIAL INVESTIGATION AND EXPOSURE ASSESSMENT

The following sections briefly summarize the environmental impacts at the Millens Scrapyard site. Analytical results used in this FS were obtained from the RI (EA 2014).

This section is organized by media of potential concern. The impacts associated with the environmental media are based on analytical results and their comparison with the appropriate standards, criteria, and guidance (SCGs) based on site use:

- ***Soil/Fill***—6 New York Code of Rules and Regulations (NYCRR) Part 375 Environmental Remediation Programs – Soil Cleanup Objectives (SCOs) (NYSDEC 2006) for Unrestricted Use.

- ***Groundwater***—NYCRR Part 703.5 Surface Water and Groundwater Quality Standards and Groundwater Effluent Limitations, as presented in the Division of Water Technical and Operational Guidance Series 1.1.1, (NYSDEC 1998, as amended).

A full analysis of all data collected during the RI is included in the RI Report (EA 2014).

2.1 SUBSURFACE SOIL

The goal of the 2014 RI soil delineation efforts was to identify all contaminants exceeding unrestricted use SCOs. RI data were compared to SCOs to identify areas that may require remediation to meet unrestricted use.

Subsurface soil results from the 2014 RI indicate that site soil and fill materials contain several inorganic constituents, as well as semilvolatile organic compounds (SVOCs), volatile organic compounds (VOCs), and one polychlorinated biphenyl constituent exceeding unrestricted use SCOs (NYSDEC 2010). A summary of constituents that exceed SCOs is provided in the following table.

Constituents	6 NYCRR Part 375 Table 375-6.8(a) Unrestricted Use SCOs (mg/kg)	No. of Exceedances/ No. of Samples	Concentration Range (mg/kg)
Inorganics			
Arsenic	13	2/44	14.9-21.5
Barium	350	1/44	417
Cadmium	2.5	4/44	3.0-25.1
Chromium	30	1/44	41.8
Copper	50	7/44	73-624
Lead	63	12/44	68.8-2,500
Mercury	0.18	6/44	0.215-15.4
Nickel	30	3/44	35.3-80
Zinc	109	14/44	121-3,030

Constituents	6 NYCRR Part 375 Table 375-6.8(a) Unrestricted Use SCOs (mg/kg)	No. of Exceedances/ No. of Samples	Concentration Range (mg/kg)
VOCs			
Acetone	0.05	3/44	0.066-0.55
Ethylbenzene	1	1/44	6.8
Toluene	0.7	2/44	4.2-12
Xylenes	0.26	5/44	0.75-39
SVOCs			
Benzo(a)anthracene	1	6/44	1.1-19
Benzo(a)pyrene	1	6/44	1.2-17
Benzo(b)fluoranthene	1	7/44	1.3-15
Benzo(k)fluoranthene	0.8	7/44	1.3-12
Chrysene	1	6/44	1.4-18
Dibenzo(a,h)anthracene	0.33	2/44	0.52-2.9
Indeno(1,2,3-cd)pyrene	0.5	7/44	0.77-9.6
3+4 methylphenol	0.33	2/44	0.41-2.8
Phenol	0.33	1/44	1.2
Polychlorinated Biphenyls			
Aroclor	0.1	9/44	0.1-4.6

NOTE: mg/kg = Milligrams per kilogram.
Table includes only those target analyte list metals that exceeded the standard or guidance value in one or more samples.

In general, the most elevated concentrations of COCs were observed in the center of the site, along the former site access roads; however, COCs were present at concentrations exceeding unrestricted use SCOs across much of the site (Figure 2-1). Soil/fill material concentrations that exceeded unrestricted use SCOs were generally observed at depths ranging from 3 to 8 ft bgs. RI data tables and figures are provided in Appendix A.

2.2 GROUNDWATER

The 2014 RI groundwater evaluation program included the installation of four new groundwater monitoring wells to supplement the existing monitoring well network followed by the completion of two rounds of groundwater sampling. For the January 2013 groundwater sampling event, samples were analyzed for total metals, dissolved metals, and VOCs. Due to the low concentrations of metals observed during the first event, October 2013 samples were only analyzed for VOCs. The table below provides a summary of the frequency of groundwater concentrations exceeding applicable groundwater quality standards.

The majority of the exceedances were detected in monitoring wells located in the southeast corner of the site (MW-12, MW-14, and MW-05). RI data tables and figures are provided in Appendix A.

Constituents	Groundwater Standards (s) and Guidance (g) Values[a] (µg/L)	No. of Exceedances/ No. of Samples	Concentration Range (µg/L)	Location of Maximum Concentration
January 2013 Sampling Event				
Total Metals[b]				
Aluminum	100(s)	6/11	123-2,310	MW-12
Iron	300(s)	11/11	389-15,600	MW-13
Lead	25(s)	1/11	31	MW-12
Manganese	300(s)	9/11	577-6,840	MW-2
Sodium	20,000(s)	10/11	23,700-121,000	MW-14
Dissolved Metals				
Iron	300(s)	7/11	572-7,210	MW-6
Manganese	300(s)	9/11	585-4,220	MW-2
Sodium	20,000(s)	10/11	23,500-121,000	MW-14
Volatile Organic Compounds				
Acetone	50(g)	1/11	100	MW-14
Benzene	1(s)	3/11	1.2-46	MW-12
Ethylbenzene	5(s)	1/11	21	MW-12
Toluene	5(s)	2/11	12-120	MW-12
m,p-Xylene	5(s)	2/11	18-77	MW-12
o-Xylene	5(s)	2/11	13-46	MW-12
Semivolatile Organic Compounds				
Phenol	1(s)	2/12	7.5-17	MW-12
October 2013 Sampling Event				
Benzene	1(s)	4/11	2.6–64	MW-12
Ethylbenzene	5(s)	1/11	28	MW-12
Toluene	5(s)	1/11	140	MW-12
m,p-Xylene	5(s)	2/11	15-100	MW-12
o-Xylene	5(s)	2/11	8.1-55	MW-12

(a) NYSDEC 1998, as amended.
(b) Inorganic constituents analyzed by EPA Method 6000/7000 series.
NOTE: µg/L = Micrograms per liter.
Table includes only those analytes that exceeded the standard or guidance value in one or more samples.

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3. DEVELOPMENT OF REMEDIAL ACTION OBJECTIVES

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for all remedial actions is considered to be restoration of the site to the pre-disposal/pre-release conditions to the extent practicable and legal. RAOs are defined as the medium-specific or operable unit-specific cleanup objectives that provide protection of public health and the environment.

The media of concern at the Millens Scrapyard site are soil/fill material and groundwater. The COCs for soil/fill material and groundwater include inorganic and organic constituents. The full list of soil/fill COCs is provided in the table in Section 2.1. The full list of groundwater COCs is provided in the table in Section 2.2.

3.1 POTENTIALLY APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Applicable or relevant and appropriate requirements (ARARs) are local, state, and federal regulations, including environmental laws and regulations that are used in the selection of remedial alternatives, as well as other non-environmental laws and regulations such as the Occupational Safety and Health Act. The development and evaluation of remedial alternatives include a comparison of alternative site remedies to ARARs. The recommended remedial action for the site must satisfy all ARARs unless specific waivers have been granted.

EPA defines "applicable" and "relevant and appropriate" in the revised National Contingency Plan, codified at 40 Code of Federal Regulations (CFR) 300.5 as follows:

- ***Applicable Requirements***—Substantive environmental protection requirements, criteria, or limitations promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstances at a CERCLA site.

- ***Relevant and Appropriate Requirements***—Standards of control that address problems or situations sufficiently similar to those encountered at a CERCLA site that their use is well suited to the particular site.

To determine whether a requirement is relevant and appropriate, characteristics of the remedial action, the hazardous substances present, and the physical characteristics of the site must be compared to those addressed in the statutory or regulatory requirement. In some cases, a requirement may be relevant, but not appropriate. In other cases, only part of a requirement will be considered relevant and appropriate. When it has been determined that a requirement is both relevant and appropriate, the requirement must be complied to the same degree as if it were applicable (EPA 1988).

ARARs for remedial action alternatives at the Millens Scrapyard site can be generally classified into one of the following three functional groups:

- ***Chemical-Specific***—Health- or risk-based numerical values or methodologies that establish cleanup levels or discharge limits for particular contaminants. Typical examples of chemical-specific ARARs include those in NYSDEC regulations and in Resource Conservation and Recovery Act (RCRA) Toxicity Characteristic criteria.

- ***Action-Specific***—Requirements that set controls or restrictions on the design, implementation, and performance levels of activities related to the management of hazardous substances, pollutants, or contaminants. Typical examples of action-specific ARARs include National Pollutant Discharge Elimination System requirements or Clean Air Act requirements.

- ***Location-Specific***—Requirements that restrict remedial actions based on the characteristics of the site or its immediate environs. Typical examples of location-specific ARARs include federal/state wetlands protection guidelines.

To-be-considered materials (e.g., federal/state criteria, advisories, and guidance values) are non-promulgated advisories or guidance issued by a federal or state government, which are not legally binding and, therefore, do not have the status of potential ARARs:

- Federal criteria, advisories, and guidance documents
- State of New York criteria, advisories, and guidance documents.

Federal and state guidance documents or criteria that are not generally enforceable, but are advisory, do not have the status of potential ARARs. Guidance documents or advisories to be considered in determining the necessary level of cleanup for protection of human health or the environment may be used where no specific ARARs exist for a chemical or situation, or where such ARARs are not sufficient to afford protection.

Federal and state requirements for soil, water, and air were considered to determine if they were ARARs, based on site characteristics, site location, and the alternatives considered. The following sections summarize the specific federal, state, and local ARARs for the remedial actions that may be taken at the Millens Scrapyard site, and for the types of technologies that will be developed into remedial alternatives. Each ARAR has been chosen for its potential applicability or relevance and appropriateness.

3.1.1 Chemical-Specific Applicable or Relevant and Appropriate Requirements

Chemical-specific requirements are established health- or risk-based numerical values or methodologies that establish cleanup levels or discharge limits in environmental media for specific substances or pollutants. Cleanup standards for impacted soil are defined in 6 NYCRR Part 375 Environmental Remediation Programs with SCOs specified for Unrestricted Use.

3.1.2 Action-Specific Applicable or Relevant and Appropriate Requirements

Action-specific ARARs set controls or restrictions on the design, implementation, and performance levels of activities related to the management of hazardous substances, pollutants, or contaminants. The potential action-specific ARARs include:

- ***Occupational Safety and Health Act, 29 CFR 1910***—Site activities will be conducted under appropriate Occupational Safety and Health Act standards.

- ***Department of Transportation Rules for Hazardous Materials Transport, 49 CFR, Parts 107, 171.1-500***—Addresses requirements for marking, manifesting, handling, and transport of hazardous materials; applicable if offsite treatment or disposal of wastes is required.

- ***Solid Waste Management Facilities, 6 NYCRR Part 360***—Provides standards and regulations for permitting and operating solid waste management facilities.

- ***Waste Transporter Permits, 6 NYCRR Part 364***—Provides standards and regulations for waste transporters.

- ***Hazardous Waste Management System: General, 6 NYCRR Part 370***—Provides standards and regulations for the state hazardous waste management system.

- ***Identification and Listing of Hazardous Wastes, 6 NYCRR Part 371***—Provides standards and regulations for the identification and listing of hazardous wastes.

- ***Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities, 6 NYCRR Part 372***—Provides standards, regulations, and guidelines for the manifest system, as well as additional standards for generators, transporters, and facilities.

- ***RCRA Toxicity Characteristic Criteria, 40 CFR Part 261.24***—All waste generated during the removal alternative will be characterized and handled per RCRA regulations, as implemented by Washington Administrative Code 173-303.

- ***Land Disposal Restrictions, 6 NYCRR Part 376***—Pertains to alternatives that require land disposal of hazardous wastes.

3.1.3 Location-Specific Applicable or Relevant and Appropriate Requirements

Location-specific ARARs must be considered when developing alternatives because these types of ARARs may affect or restrict remedial activities. Generally, location-specific requirements serve to protect the individual site characteristics, resources, and specific environmental features. The potential location-specific ARARs include:

- ***Protection of Waters, 6 NYCRR Part 608—***Provides standards, regulations, and guidelines for the protection of waters within the state.

3.2 REMEDIAL ACTION OBJECTIVES

RAOs are developed to determine the level of contamination that the remedial action will address. The media cleanup goals are based on New York State SCGs, the site-specific risk assessment, COCs, site characteristics, and feasible actions. These goals can be achieved by either removing the soil/fill material contamination, or preventing impacts to human or ecological receptors via ingestion/direct contact with impacted soil.

RAOs for soil at the Millens Scrapyard site are:

Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

RAOs for groundwater at the Millens Scrapyard site are:

For Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

For Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

- Prevent the discharge of contaminants to surface water.

- Remove the source of groundwater contamination.

3.3 VOLUME OF IMPACTED SOIL

Subsurface soil/fill material impacts identified during the 2014 RI were generally located along site roadways, though additional impacts were identified in the north-central part of the site by East Strand Street and along the southeast fence line. The extent of soil that exceeded SCOs was determined using a 10- × 10-ft grid (Figure 3-1). There is an estimated 3,700 cubic yards of contaminated soil at the site.

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4. GENERAL RESPONSE ACTIONS

Remedial technologies fit into one or more category of GRAs. GRAs are generic, medium-specific, remedial actions that will satisfy the RAOs discussed earlier. GRAs may include no action, institutional controls, containment, removal, treatment, disposal, monitoring, or a combination thereof (EPA 1988). The development of remedial alternatives for this FS begins with the identification of GRAs that can meet RAOs for both soil and groundwater. These GRAs are then screened based on their effectiveness, implementability, and cost; and developed into remedial alternatives to address impacted media at the site (i.e., soil and groundwater).

4.1 GENERAL RESPONSE ACTIONS FOR SOIL

GRAs for soil at the Millens Scrapyard site (including no action, site management, containment, removal, treatment, and disposal) are detailed in the following sections.

4.1.1 No Action

The no action alternative is included for use as the baseline alternative against which other remedial alternatives are compared.

4.1.2 Site Management

Site management (also known as institutional controls) involves the placement of a restriction on the use of property that limits human or environmental exposure, provides notice to any individual who might come in contact with the site, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of site management activities at or pertaining to a site.

4.1.3 Containment

Soil and fill containment would be accomplished by installing either a soil cover or impermeable liner over the impacted soil to eliminate exposure and prevent transport through groundwater.

4.1.4 Removal

Physical removal of impacted fill would be conducted by excavation, using standard construction equipment (i.e., excavators) to remove material from the ground and load it into transport mechanisms (i.e., trucks) for offsite treatment or disposal.

4.1.5 Treatment

Treatment subjects contaminants to processes that alter their state, transforms them to innocuous forms, or immobilizes them. Potentially applicable treatment technologies for soil at this site include *in situ* biological treatment and *in situ* soil flushing.

Biological treatment involves the use of plants to treat the impacted media. This can be achieved through phytoextraction, which involves the physical removal of contaminants from the soil through plant.

Soil flushing is the use of water or other suitable aqueous solution to flush contaminants from soil. The fluid is then extracted *in situ*.

4.1.6 Disposal

Disposal involves transporting the soil to a landfill. The soil would either be placed in a lined landfill cell or used for daily cover, based on characterization results.

4.2 GENERAL RESPONSE ACTIONS FOR GROUNDWATER

GRAs for groundwater at the Millens Scrapyard site (including no action, site management, containment, and treatment) are detailed in the following sections.

4.2.1 No Action

The no action alternative is included for use as the baseline alternative against which other remedial alternatives are compared.

4.2.2 Site Management

Site management (also known as institutional controls) involves the placement of a restriction on the use of groundwater that limits human or environmental exposure, and prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of site management activities at or pertaining to a site.

4.2.3 Containment

Groundwater containment would be accomplished by installing a slurry wall from the ground surface to the confining layer to either contain contaminated groundwater, or divert it away from drinking water intakes or toward a treatment system. Effectiveness is based on the ability to key the slurry wall into the confining layer, and cost is driven by the depth to this layer.

4.2.4 Treatment

Treatment subjects contaminants to processes that alter their state, transforms them to innocuous forms, or immobilizes them. Potentially applicable treatment technologies for groundwater at this site include *in situ* biological treatment including monitored natural attenuation and enhanced bioremediation, as well as *ex situ* physical/chemical treatment.

5. IDENTIFICATION AND SCREENING OF TECHNOLOGIES

The potentially applicable technologies identified earlier are screened using the process defined in DER-10, Technical Guidance for Site Investigation and Remediation (NYSDEC 2010). Three preliminary screening criteria (i.e., effectiveness, implementability, and cost) were used to screen the remedial technologies identified earlier for each media of concern. The results of the technology screening process were summarized in a letter dated 3 October 2014 from EA to NYSDEC; a copy of the letter is provided in Appendix B. The screening of alternatives was designed to provide a basis for an overall assessment of applicable technologies based on impacted media identified at the site and related areas during the RI.

5.1 SCREENING CRITERIA

5.1.1 Effectiveness

Effectiveness is a measure of the ability of an option to: (1) reduce toxicity, mobility, or volume of contamination, (2) minimize residual risks, (3) afford long-term protection, (4) comply with ARARs, (5) minimize short-term impacts, and (6) achieve protectiveness in a limited duration. Technologies that offer significantly less effectiveness than other proposed technologies may be eliminated from the alternative development process. Options that do not provide adequate protection of human health and the environment likewise may be eliminated from further consideration.

5.1.2 Implementability

Implementability is a measure of the technical feasibility and availability of the option and the administrative feasibility of implementing it (e.g., obtaining permits for offsite activities, right-of-ways, or construction). Options that are technically or administratively infeasible or that would require equipment, specialists, or facilities that are not available within a reasonable period may be eliminated from further consideration.

5.1.3 Cost

Qualitative relative costs for implementing the remedy are considered. Technologies that cost more to implement, but that offer no benefit in effectiveness or implementability over other technologies, may be excluded from the alternative development process.

5.2 SCREENING SUMMARY – SOIL

5.2.1 Soil Technologies Not Retained for Further Analysis

From the list of technologies potentially applicable for remediation of the COCs in soil at this site, a few technologies were excluded from further consideration because they were considered ineffective, not implementable at this site, or too costly relative to the other technologies under consideration (Table 5-1). The reasons for exclusion are presented in this section.

Enhanced bioremediation was not retained because it would require a long timeframe with limited effectiveness. Cold temperatures would slow the process. A treatability study would also need to be completed to determine the effectiveness of this application of the technology.

Ex situ biological treatment was not retained because it would require a large amount of space for staging of biopiles. A treatability study would also need to be completed to determine the effectiveness of this application of the technology.

Impermeable cover was not retained because it costs more than soil cover, which would adequately address the RAOs.

Soil flushing was not retained due to the high relative cost and unknown level of effectiveness.

Solidification was not retained because it would not be effective for VOC or SVOC contaminants in the soil.

Acid leaching was not retained due to difficulty of implementation. This technology also requires a long timeframe for implementation with a significantly higher cost than other screened technologies.

5.2.2 Soil Technologies Retained for Further Analysis

Technologies that will be retained for further evaluation are removal, disposal, and containment. Removal would be implemented through the excavation of impacted soil using an excavator. Disposal would be implemented through loading and transporting excavated soil to appropriate offsite disposal facilities. Soil would be characterized and accepted by the disposal facility prior to transport. Containment would be implemented through the placement of a 2-ft soil cover over remaining impacted soil.

5.3 SCREENING SUMMARY – GROUNDWATER

5.3.1 Groundwater Technologies Not Retained for Further Analysis

From the list of technologies potentially applicable for remediation of the COCs in groundwater at this site, a few technologies were excluded from further consideration because they were considered ineffective, not implementable at this site, or too costly relative to the other technologies under consideration (Table 5-1). The reasons for exclusion are detailed below.

The use of physical barriers was not retained. Groundwater sampling results indicated exceedances of SCGs in both onsite and offsite groundwater. These contaminants would not be contained by a barrier placed within the site boundary.

Filtration was not retained. This technology has moderately high startup costs, and would require long-term maintenance and monitoring, including replacement of filters, and disposal of spent filter materials.

5.3.2 Groundwater Technologies Retained for Further Analysis

Technologies that will be retained for further evaluation are monitored natural attenuation and enhanced bioremediation. Monitored natural attenuation would involve natural degradation processes that cause contaminants to break down over the long term. Groundwater would be monitored to track progress. Enhanced bioremediation would involve the addition of reagents to the contaminated groundwater that would augment the natural degradation processes. Long-term monitoring would be required; however, the breakdown process is expected to be much faster than monitored natural attenuation.

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6. SCOPING AND DEVELOPMENT OF REMEDIAL ALTERNATIVES

Scoping for the FS was completed based on correspondence between EA and the NYSDEC. EA performed the alternative comparison in accordance with DER-10 (NYSDEC 2010) and the EPA publication *Guidance for Conducting RIs and FSs under CERCLA* (EPA l540lG-891004) (EPA 1988).

The scoping and development of the technologies/alternatives selected during the previous step of the FS process and during discussions with NYSDEC are described below. Each alternative takes a comprehensive approach, involving remediation of both soil and groundwater.

6.1 REMEDIAL ALTERNATIVES

The extent and volume of soil requiring remediation was determined based on data collected during the RI (EA 2014) (Figure 3-1). This treatment area includes localized areas along site roadways, in the north-central part of the site by East Strand Street, and along the south-east fence line. Groundwater contamination was identified along the eastern and southern boundaries of the site. Four alternatives have been considered for this site, including a No Action alternative as Alternative 1.

6.1.1 Onsite Area Alternative 1: No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative would leave the area in its present condition.

6.1.2 Alternative 2: Site Management

Site management includes the placement of land/groundwater use restrictions, implementation of increased site security, and long-term groundwater monitoring. Land use restrictions may take the form of an environmental easement or deed restriction, which will restrict or limit the use of the land and/or groundwater. Site security would involve repairing/maintaining the site entrance controls (i.e., gates and locks) and the perimeter fence. Onsite and offsite groundwater monitoring wells would be sampled semiannually for the first 5 years, and be reduced to annually for the following 25 years to track any changes in site-related contaminant concentrations in groundwater.

6.1.3 Alternative 3: Capping of Contaminated Soil with a Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls

Alternative 3 involves the placement of a soil cover over impacted areas. Erosion and sedimentation control measures would be installed to prevent sediment migration offsite during construction activities. Prior to placement of the soil cover, existing impacted soil would be re-graded slightly to accommodate smooth grades with the additional cover soil to be placed as well so as to promote positive surface drainage toward the southeast. A non-woven geotextile fabric would be placed over the area shown on Figure 6-1 to serve as a demarcation layer

indicating remaining impacts. Eighteen inches of common fill followed by 6 in. of topsoil would be placed over the geotextile. The soil cover would be seeded and mulched to promote vegetative growth.

Following the placement of the soil cover, site management activities discussed in Section 6.1.2 would be completed and site groundwater would be monitored for natural attenuation. Groundwater monitoring would be completed semiannually for the first 5 years and annually for the following 25 years. Onsite monitoring wells would need to be protected during the placement of the soil cover, but would not need to be replaced.

6.1.4 Alternative 4: Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater, and Institutional Controls

Under this alternative, soil that contains contaminants at concentrations exceeding unrestricted use SCOs would be excavated and disposed of offsite and groundwater would be treated using an oxygen release compound (ORC®). A pre-design assessment of groundwater microbial communities for selection of the ORC reagent would be completed prior to remediation. In addition, a pre-design characterization study would be completed to verify hazardous versus non-hazardous soil/fill quantities.

Prior to commencement of excavation activities, the following site preparation activities would take place:

- All existing site monitoring wells would be sampled to establish the baseline conditions.
- Erosion and sedimentation control measures would be installed to prevent sediment migration offsite during excavation activities.
- Monitoring wells MW-1, MW-7R, and MW-12 would be decommissioned.
- A surveyor would mark out the excavation limits.

Following site preparation, materials would be excavated and disposed of offsite at an approved disposal facility. Analytical soil/fill material data obtained during the RI were from total constituent analysis rather than Toxicity Characteristic Leaching Procedure extraction. Based on weight tickets obtained from the 2009-2010 remedial action, approximately 40 percent of material was disposed of as hazardous waste. Based on the RI results and the quantity from the previous remedial action, it is estimated that 35 percent of the soil would be disposed of as hazardous waste. The remaining 65 percent would be disposed of as non-hazardous waste. These quantities may change based on the pre-design characterization study.

Following excavation to depths shown on Figure 6-2, confirmation soil samples would be collected at a rate of one per 900 square ft on the excavation bottoms and one per 30 linear ft along excavation sidewalls. Following confirmation soil sampling, the excavated areas would be restored to smooth grades using clean fill and topsoil from offsite; however, an area in the

southeast corner of the site would be prepared for ORC reagent application before it is restored. A 20- × 20-ft area shown on Figure 6-2 would be excavated an additional 5 ft to intersect the groundwater interface by 2 ft and facilitate effective reagent application. The ORC reagent would be deposited in the exposed groundwater to enhance degradation of VOC contaminants in groundwater. Following application, the additionally excavated soil (which had previously been confirmed to be clean) would be returned to the excavation and the remaining excavation would be restored to smooth grades using clean fill and topsoil from offsite. The following would be completed as part of site restoration:

- All fill materials would be placed and compacted in 1-ft lifts.
- Seed and mulch would be applied to all disturbed areas.
- Monitoring wells MW-1, MW-7R, and MW-12 would be replaced and developed.

Monitoring wells would be sampled quarterly for the first year and annually for an additional 29 years to monitor the effectiveness of the reagent application. Additional applications may be necessary and would be determined based on monitoring results.

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7. COSTING AND EVALUATION CRITERIA

7.1 COST ASSUMPTIONS

Cost assumptions were prepared for each alternative using EPA's *Guide to Developing and Documenting Cost Estimates during the FS* (EPA 1996). Net present value of the project costs was estimated using an interest rate of 5 percent. The cost assumptions were calculated using the most common products and application methods available for a remedial alternative. The EPA guidance was used in conjunction with *DER-10 Technical Guidance for Site Investigation and Remediation* (NYSDEC 2010).

Cost estimates were prepared for each alternative based on the assumptions detailed in Chapter 6. Appendix C shows the detailed cost estimates developed. A summary of the costs for all alternatives is provided in this table.

Alternative	Net Present Value	Capital Cost	Annual Cost (Years 1-5)	Annual Cost (Years 6-30)
Alternative 2				
Site Management	**$214,464**	$28,675	$18,860	$18,860
Alternative 3				
Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls	**$593,033**	$376,302	$22,001	$11,000
Alternative 4				
Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater, and Institutional Controls	**$1,975,977**	$1,845,920	$28,904	$7,226

7.2 CRITERIA USED FOR ANALYSIS OF ALTERNATIVES

The criteria to which potential remedial alternatives are compared (and used during this detailed analysis) are defined in 6 NYCRR Part 375 (NYSDEC 2006) and are listed below:

- Overall protectiveness of public health and the environment
- Conformance to SCGs
- Long-term effectiveness and permanence
- Reduction in toxicity, mobility, or volume of contamination through treatment
- Short-term impacts and effectiveness
- Implementability
- Cost effectiveness
- Land use
- Community acceptance.

A description of the criteria and how alternatives are evaluated against them follows.

Overall Protectiveness of Public Health and the Environment—This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Conformance to SCGs—Compliance with SCGs addresses whether a remedy would meet environmental laws, regulations, and other standards and criteria. The SCGs were presented in Chapter 3.

Long-Term Effectiveness and Permanence—This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain onsite after the recommended remedy has been implemented, the following items are evaluated: (1) magnitude of the remaining risks, (2) adequacy of the engineering and/or institutional controls intended to limit the risk, and (3) reliability of these controls.

Reduction of Toxicity, Mobility, or Volume of Contamination through Treatment—The degree to which the alternative permanently reduces the toxicity, mobility, or volume of hazardous substances including the adequacy of the alternative in destroying the hazardous substances, reduction or elimination of hazardous substance releases and sources of releases, degree of irreversibility of waste treatment process, and characteristics and quantity of treatment residuals generated. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility, or volume of the wastes at the site.

Short-Term Impacts and Effectiveness—Evaluation of the short-term effectiveness for an alternative includes consideration of the risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks. Impacts from remedial action implementation include vehicle traffic; temporary relocation of residences/buildings; temporary closure of public facilities; odor; open excavations; and noise, dust, and safety concerns associated with extensive heavy equipment activity. The greatest short-term risk to human health is related to safety and general construction activity.

Implementability—The technical and administrative feasibility of implementing each alternative is evaluated. Technical feasibility includes the difficulties associated with construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and other potential implementation barriers.

Cost-Effectiveness—Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

Land Use—The current and anticipated future use of the site will be considered. Land use must comply with applicable zoning laws and maps.

Community Acceptance—Public comments will be considered after the close of the public comment period.

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8. DETAILED ANALYSIS OF ALTERNATIVES AND RECOMMENDATIONS

The purpose of this FS was to develop, screen, and evaluate potential remedial alternatives for the Millens Scrapyard site. Remedies were identified and screened in accordance with EPA (1988, 1996) and NYSDEC (1998, 2006, 2010) guidance. The comparison of alternatives and recommendations are described below; and summarized in Table 8-1.

The following remedial alternatives are considered for this FS:

- ***Alternative 1***—No Action.
- ***Alternative 2***—Site Management.
- ***Alternative 3***—Capping of Contaminated Soil with a Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls.
- ***Alternative 4***—Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater, and Institutional Controls.

8.1 COMPARISON OF ALTERNATIVES

8.1.1 Overall Protectiveness of Public Health and the Environment

This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

Alternative 1 does not fulfill this criterion. Alternative 2 fulfills this criterion through the implementation of institutional controls. Through containment, Alternative 3 closes off the soil exposure pathway; in conjunction with the implementation of institutional controls, this criterion is fulfilled. Alternative 4 fulfills this criterion by removing the contaminants from the site.

8.1.2 Standards, Criteria, and Guidance

Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria.

Alternatives 1, 2, and 3 do not meet this criterion, as soil exceeding SCGs will remain onsite. Alternative 4 fulfills this criterion by removing soil and treating groundwater exceeding SCGs.

8.1.3 Long-Term Effectiveness and Permanence

This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If fill or treated residuals remain onsite after the recommended remedy has been implemented, the following items are evaluated: (1) magnitude of the remaining risks, (2) adequacy of the engineering and/or institutional controls intended to limit the risk, and (3) reliability of these controls.

Alternatives 1 and 2 will not provide long-term effectiveness or permanence. Alternative 3 would moderately fulfill this criterion, as it involves leaving impacted soil/fill onsite and would require long-term monitoring. Alternative 4 would fulfill this criterion because contaminants would be removed from the site.

8.1.4 Reduction of Toxicity, Mobility, or Volume of Contamination through Treatment

Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility, or volume of contamination through treatment at the site.

Alternatives 1 and 2 do not employ treatment and will not reduce the toxicity, mobility, or volume of contamination. Alternative 3 will not reduce the toxicity or volume of contamination, but will reduce the mobility of soil contaminants by containment. Alternative 4 will fulfill this criterion via removal (soil) and treatment (groundwater) of contamination.

8.1.5 Short-Term Impacts and Effectiveness

This criterion evaluates the potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 1 and 2 do not pose additional risk to the community, workers, or environment, as there are no construction activities involved. Alternatives 3 and 4 pose increased short-term risks to the public during grading and excavation, through the production of dust; these effects can be reduced through the implementation of standard dust mitigation construction practices. Workers can potentially be exposed to impacted media during grading and excavation activities involved in Alternatives 3 and 4. Risks can be minimized by implementing health and safety controls, including the use of appropriate personal protective equipment.

8.1.6 Implementability

This criterion evaluates the technical and administrative feasibility of implementing each alternative.

All alternatives are implementable and have been used nationally.

8.1.7 Cost-Effectiveness

This criterion evaluates estimated capital costs, as well as annual operation, maintenance, and monitoring costs on a present-worth basis.

Alternative 1 is the least expensive, but is also the least effective. Alternative 2 could be implemented at a relatively low cost; however, this alternative is not effective. Alternative 3 is moderately expensive, and is also moderately effective. This alternative would serve to protect

public health without removing the contaminants. Alternative 4 is the most expensive, but is also the most effective.

8.1.8 Land Use

Alternatives 1 and 2 would not affect the future use of the site since contamination would remain. Alternative 3 involves a soil cover, and land use would be limited. Alternative 4 involves the removal of fill with concentrations exceeding unrestricted use SCGs, which would result in less restricted land use.

8.1.9 Community Acceptance

This criterion evaluates concerns of the community regarding the investigation and evaluation of alternatives. The Millens Scrapyard site has not been presented to the community for comment at this point.

Based on consideration of all of the above criteria, Alternative 3 is recommended because it is the lowest cost alternative that will effectively protect public health.

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Figures

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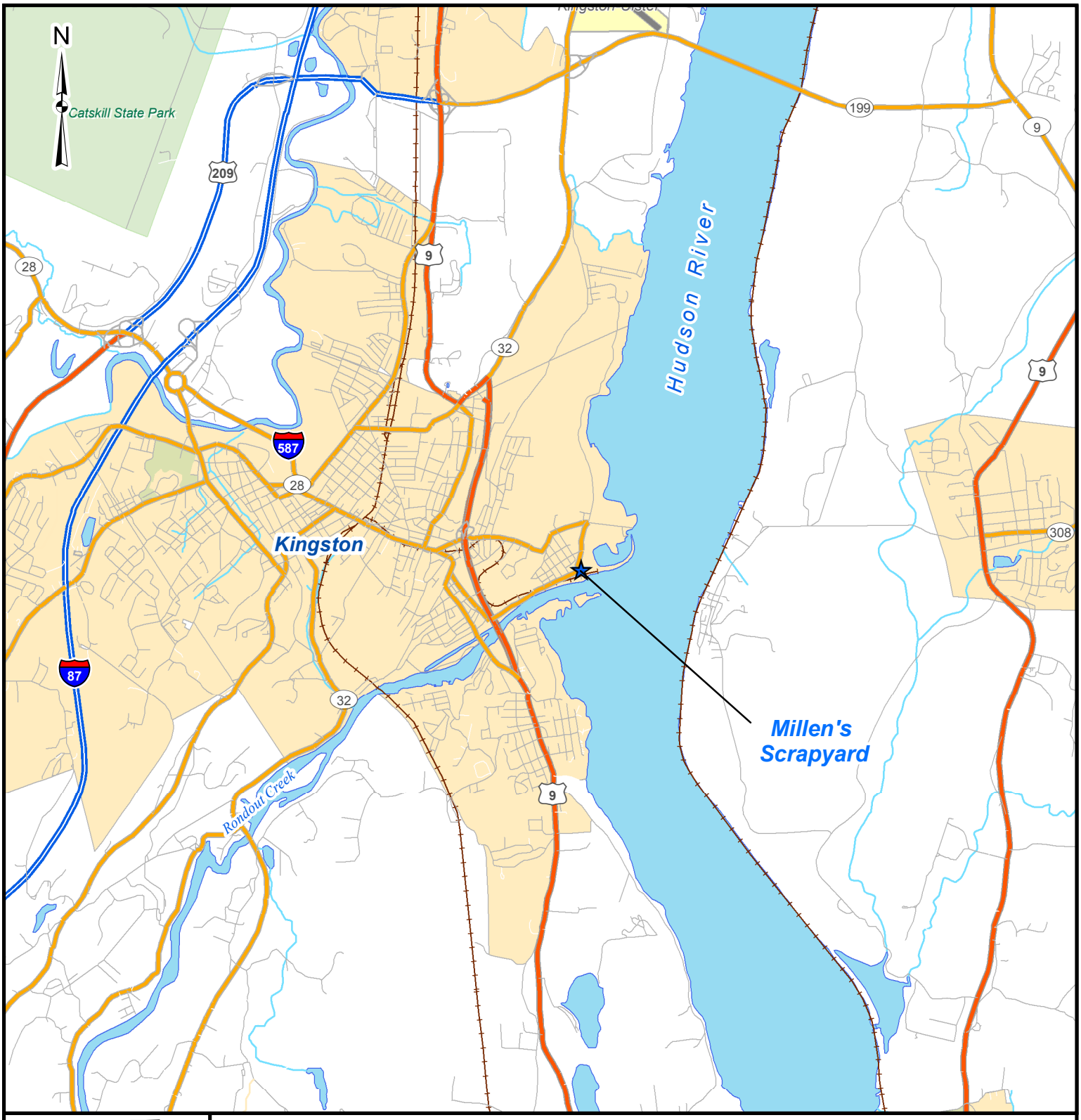

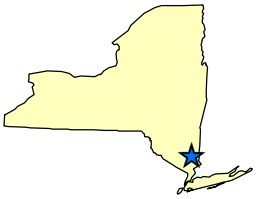

Legend

★ Site Location

0 0.5 1 1.5 2 Miles

1 inch equals 1 miles

Source: ESRI Streetmaps (2005).

MILLENS SCRAPYARD (SITE NO. 356030)
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FIGURE 1-1
MILLENS SCRAPYARD
SITE LOCATION

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
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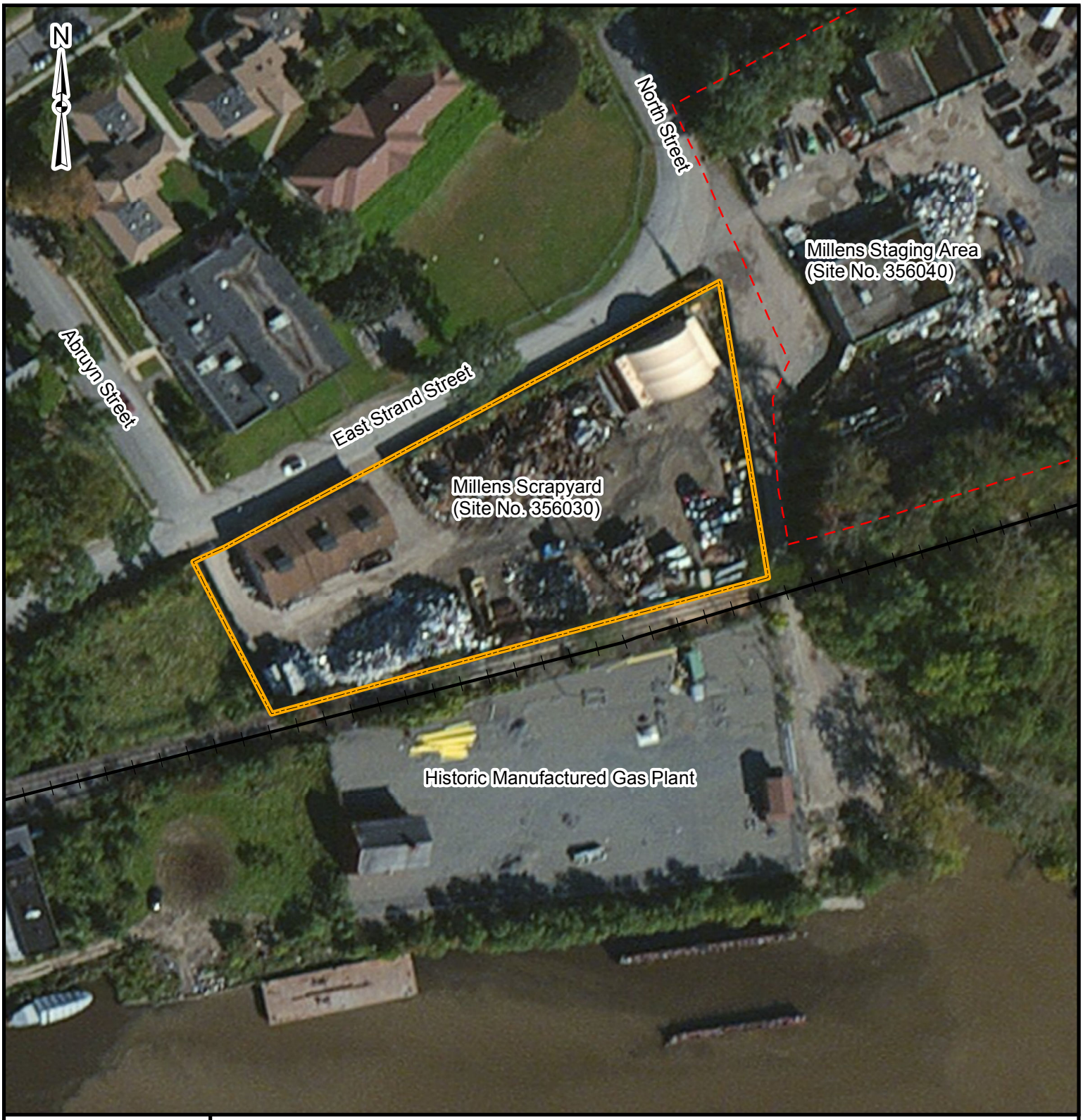

Legend

- Site Boundary
- Former Millens Staging Area
- Railroad

Feet
0 50 100 150 200

1 inch = 100 feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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FIGURE 1-2
SITE MAP

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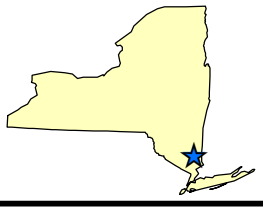

Legend

Site Boundary

Feet

0 500 1,000 1,500 2,000

1 inch = 1,000 feet

Source: USGS (1:100,000) QUADRANGLE
Seamless Data Distribution

MILLENS SCRAPYARD (SITE NO. 356030)
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FIGURE 1-3
MILLENS SCRAPYARD
TOPOGRAPHIC
QUADRANGLE MAP

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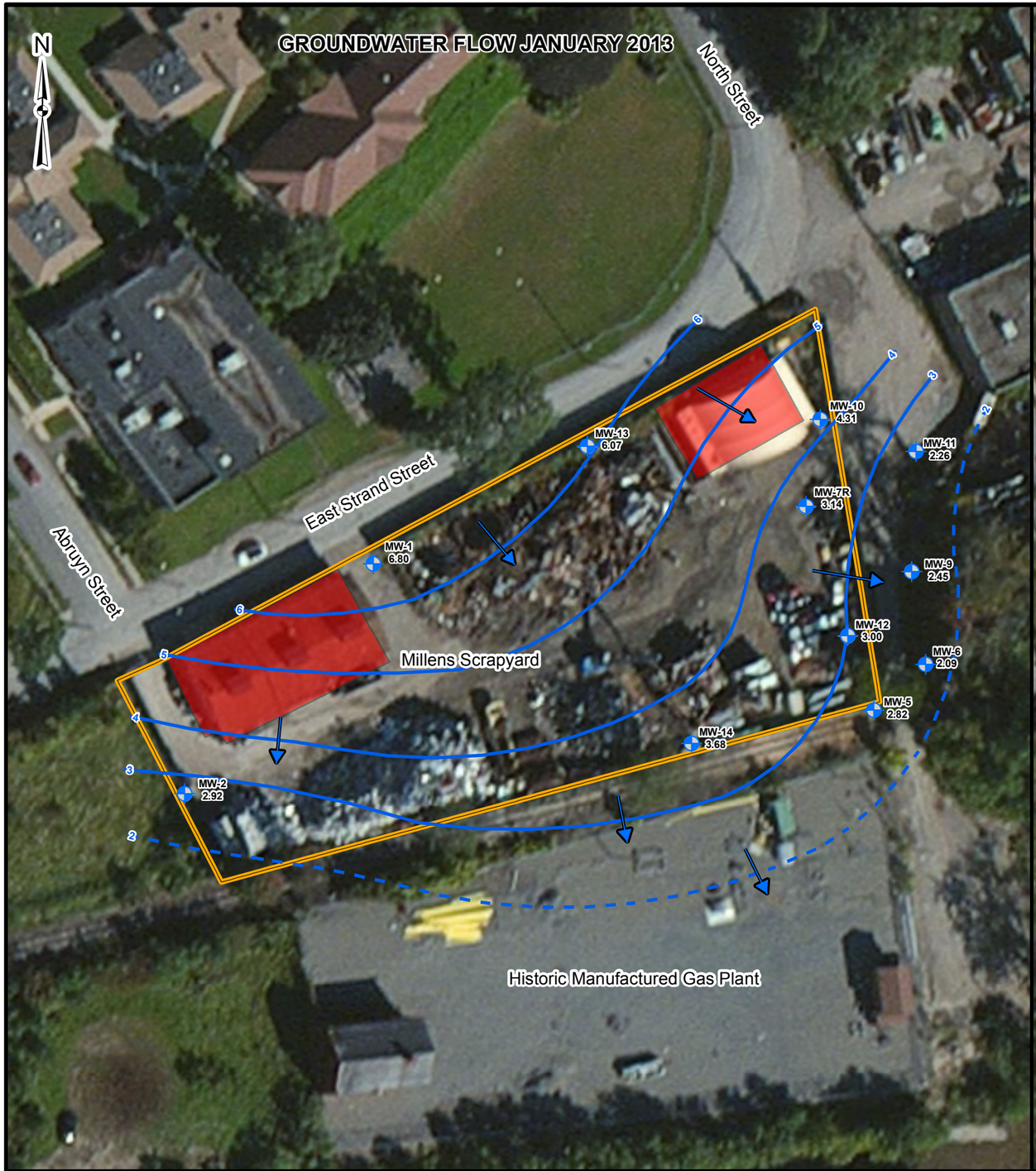

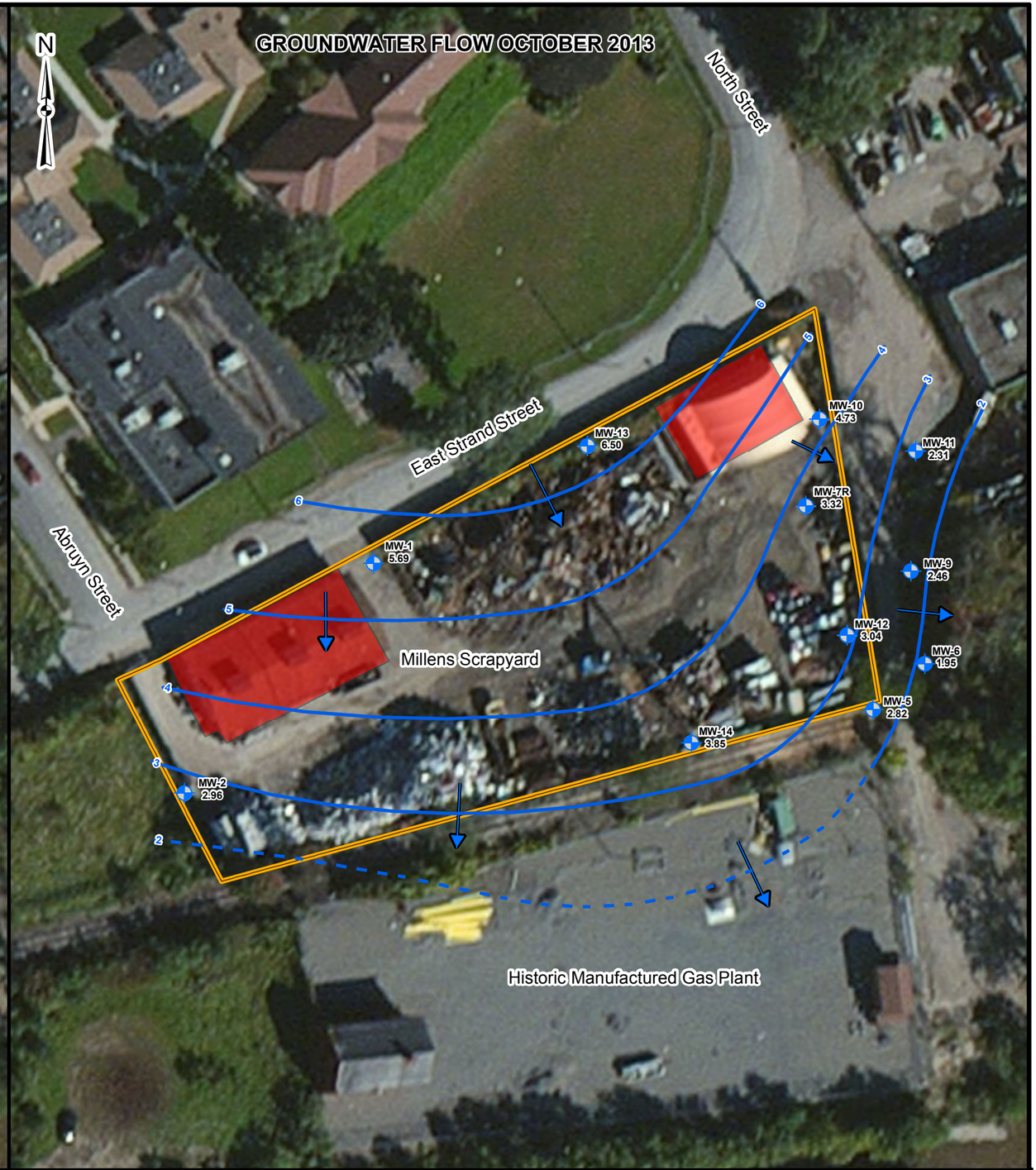

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FIGURE 1-4
GROUNDWATER CONTOURS
AND FLOW DIRECTION

0 35 70 105 140 Feet
1 inch = 70 feet

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Legend

- Site Boundary
- Structures
- Monitoring Well
- 1 Foot Groundwater Elevation Contour
- 1 Foot Inferred Groundwater Elevation Contour
- Inferred Groundwater Flow Direction

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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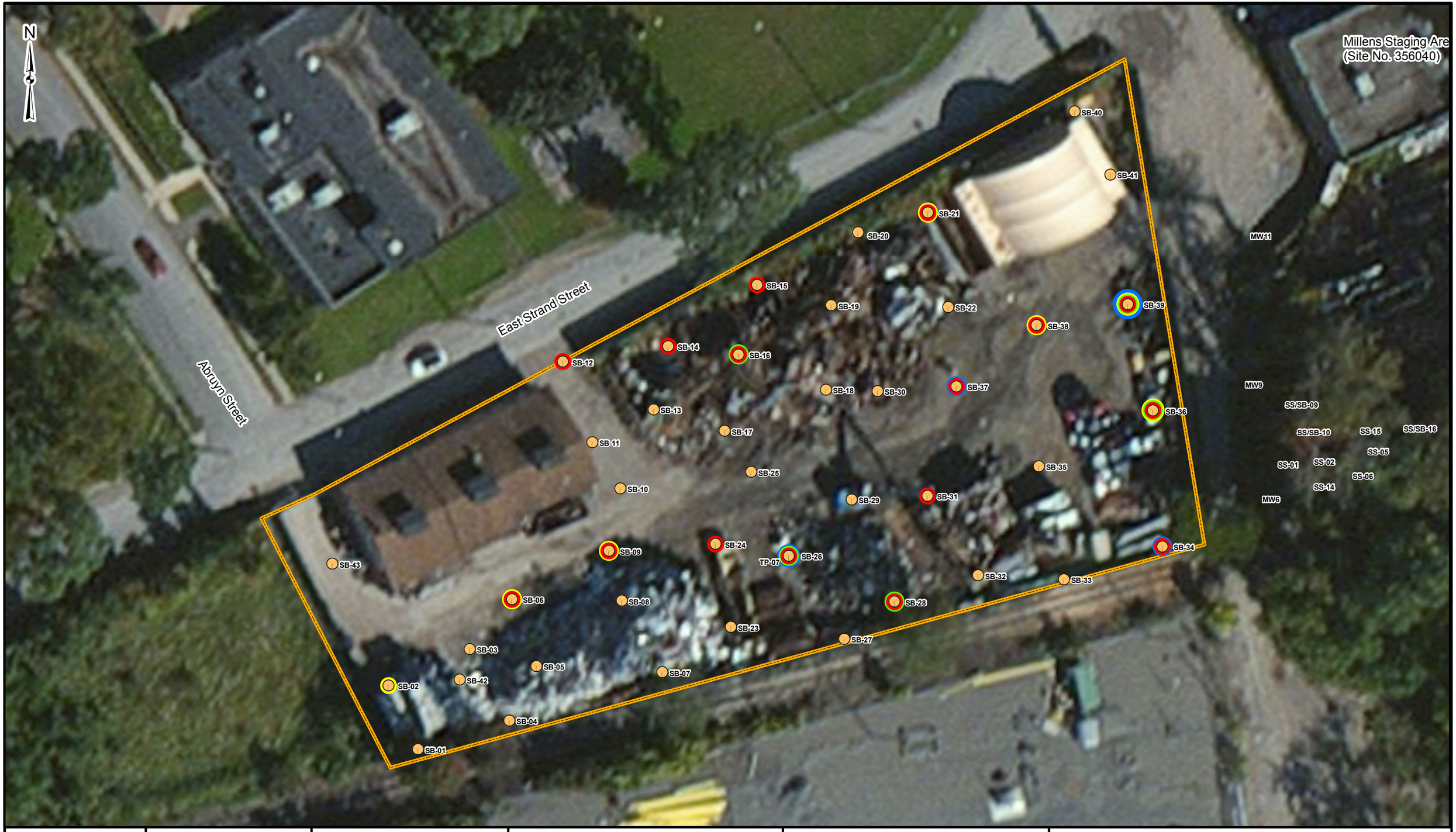

	MILLENS SCRAPYARD (356030) FEASIBILITY STUDY REPORT KINGSTON, NEW YORK		FIGURE 2-1 RI SUMMARY OF SCO EXCEEDANCES IN SOIL/FILL			0 20 40 60 80 Feet 1 inch = 40 feet		
	PROJECT MGR: CJS	DESIGNED BY: MEM	CREATED BY: MEM	CHECKED BY: RSC	PROJECT NO: 1490717	DATE: JULY 2015	SCALE: AS SHOWN	FILE NO: GIS/PROJECTS/ 1490717_FIG2-1.MXD

Legend

- Site Boundary
- Soil Borings

Soil Boring Exceedences

- Metals
- VOCs
- PCBs
- SVOCs

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MILLENS SCRAPYARD (356030)
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KINGSTON, NEW YORK

FIGURE 3-1
INTERPRETED HORIZONTAL EXTENT
OF CONTAMINATED SOIL/FILL

0 20 40 60 80 Feet
1 inch = 40 feet

Legend
- Site Boundary
- Interpreted Impacts
- Soil Borings

Soil Boring Exceedences
- Metals
- VOCs
- PCBs
- SVOCs

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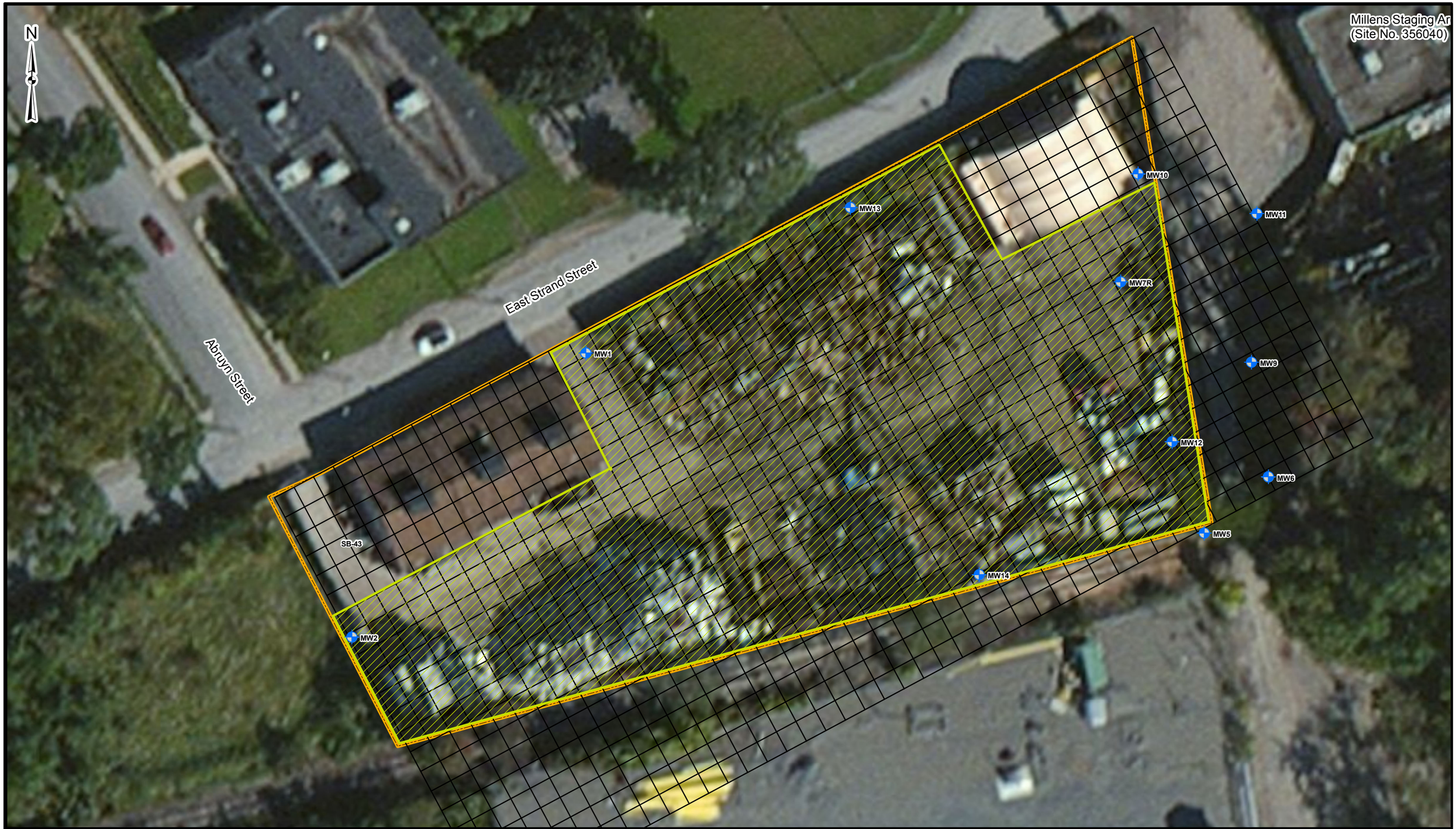

MILLENS SCRAPYARD (356030) FEASIBILITY STUDY REPORT KINGSTON, NEW YORK		FIGURE 6-1 ALTERNATIVE 3 SOIL COVER, MONITORED NATURAL ATTENUATION OF GROUNDWATER			0 20 40 60 80 Feet 1 inch = 40 feet			**Legend** Site Boundary Proposed Soil Cover Area Monitoring Well
PROJECT MGR: CJS	DESIGNED BY: MEM	CREATED BY: MEM	CHECKED BY: RSC	PROJECT NO: 1490717	DATE: JULY 2015	SCALE: AS SHOWN	FILE NO: GIS/PROJECTS/ 1490717_FIG6-1.MXD	Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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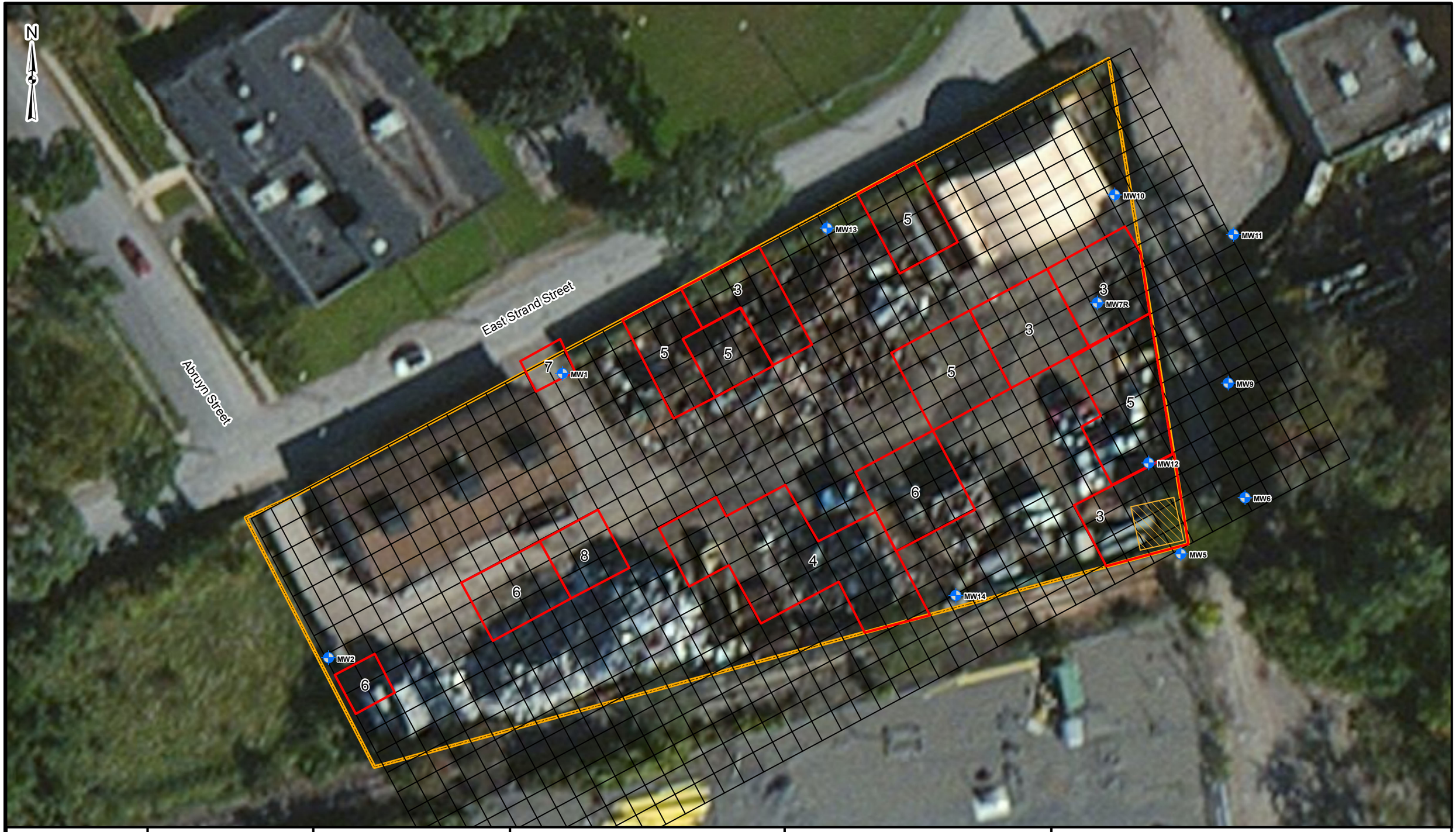

		MILLENS SCRAPYARD (356030) FEASIBILITY STUDY REPORT KINGSTON, NEW YORK	FIGURE 6-2 ALTERNATIVE 4 HOT SPOT EXCAVATION, ENHANCED AEROBIC BIOREMEDIATION FOR GROUNDWATER					
		PROJECT MGR: CJS	DESIGNED BY: MEM	CREATED BY: MEM	CHECKED BY: RSC	PROJECT NO: 1490717	DATE: JULY 2015	SCALE: AS SHOWN	FILE NO: GIS/PROJECTS/ 1490717_FIG6-2.MXD

Feet
0 20 40 60 80
1 inch = 40 feet

Legend

- Site Boundary
- 6 Proposed Excavation (Depth - ft)
- Monitoring Well
- ORC Application Area

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

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Tables

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TABLE 5-1 TECHNOLOGY SCREENING MATRIX

Technology	Process Options	Effectiveness in Addressing RAOs	Implementability	Key Factors	Cost	Status
SOIL/FILL TECHNOLOGIES						
Institutional Controls						
Institutional controls	Land use restrictions.	Effective for human health risk RAOs associated with contact of fill	Easily implemented	Requires regulatory and public acceptance of restricted/ diminished resource use.	Low	Retained for potential combination with other technologies.
***In Situ* Biological Treatment**						
In Situ Biological Treatment	Enhanced bioremediation.	Effective for risk-based RAOs and source control.	Implementable; may require long timeframes, and effectiveness may be limited.	Would not provide short-term risk reduction and overall effectiveness may be limited; more often used to remediate low level residual contamination following source removal; would not remediate inorganic COCs.	Moderate	Not retained.
Ex Situ Biological Treatment	Remove the source of impacts to groundwater.	Effective for risk-based RAOs and source control.	Moderately difficult to implement; has large spatial requirements for treatment of soil following excavation; would require treatability study; requires import and availability of reagents.	Space available onsite for staging of biopiles is limiting factor; would require treatability study to identify effectiveness of amendment(s).	Moderate	Not retained.

Technology	Process Options	Effectiveness in Addressing RAOs	Implementability	Key Factors	Cost	Status
Containment						
Covering	Soil cover.	Effectively addresses RAOs associated with contact with fill by placing barrier over impacted soil.	Easy to implement; requires import of soil for cover; monitoring of soil cover thickness; requires periodic maintenance and monitoring; requires development of a site management plan that is tied to an institutional control.	Effectively prevents contact of fill; would require long-term groundwater monitoring.	Moderate	Retain for consideration.
	Impermeable cover (i.e., clay, asphalt, plastic, etc.).	Effectively addresses RAOs associated with contact with fill by placing impermeable barrier over impacted soil.	Moderately easy to implement; requires import of impermeable material for cover; may require installation by experienced professionals (i.e., asphalt, plastic); requires periodic maintenance and monitoring; requires development of a site management plan that is tied to an institutional control.	Effectively prevents contact of fill; would require long-term groundwater monitoring.	Moderate	Retain for consideration.
***In Situ* Physical/Chemical Treatment**						
Soil Flushing	Extraction of contaminants from soil with water or other suitable aqueous solutions; soil flushing process includes injection or infiltration process of extraction fluid through soil *in situ*.	Effectively addresses RAOs.	Considered an emerging technology, has not been widely implemented; moderately difficult to implement; addition of environmentally compatible solvents may be used to increase effective solubility of some COCs; however, flushing solution may alter the physical/ chemical properties of the soil system; technology offers the potential for recovery of metals and can mobilize a wide range of organic and inorganic contaminants from coarse-grained soils.	Capture of groundwater and flushing fluids with desorbed contaminants may need treatment to meet appropriate discharge standards prior to release to local, publicly owned wastewater treatment works or receiving streams; separation of solvents from recovered flushing fluid, for reuse in the process, is a major factor in the cost of soil flushing. Treatment of the recovered fluids results in process sludges and residual solids, i.e., spent carbon and spent ion exchange resin, which must be appropriately treated before disposal. Residual flushing additives in soil may be a concern.	High	Not retained.

Technology	Process Options	Effectiveness in Addressing RAOs	Implementability	Key Factors	Cost	Status
Removal						
Excavation	Mechanical excavation used to remove soil/fill material.	Will address relevant RAOs, assuming use of handling treatment/ disposal options discussed below.	Easy to implement.	Site is moderately sized, and impacts are shallow; would achieve RAOs relatively quickly.	Low, Moderate	Retain for consideration.
***Ex Situ* Physical/Chemical Treatment**						
Solidification or Stabilization	Amendments added to modify physical and chemical properties of material to facilitate handling and disposal.	Effective at immobilizing inorganics within fill; however, is not effective for VOCs or SVOCs in soil.	Relatively easy to implement; can be performed on small batches as material is staged for transport; requires import and addition of amendments; result is decreased water content and toxicity and mobility of contaminants.	Requires use of amendments to achieve stabilization.	Moderate	Not retained.
Ex Situ chemical treatment	Acid leaching used to remove inorganics from soil/fill.	Effective at removing inorganics within fill; however, is not effective for VOCs or SVOCs in soil.	Difficult to implement; requires establishment of a designated treatment facility using potentially hazardous chemicals to remove inorganics from fill.	Requires long-term use of facilities for soil/fill treatment and disposal or recycling of leached fluids; rate of treatment may limit rate of excavation and disposal; requires use and maintenance of specialized equipment and chemicals.	High	Not retained.
Disposal						
Offsite Disposal	Offsite commercial landfill.	Required for excavation options to meet RAOs.	Low degree of difficulty to implement; requires identification of landfills capable of accepting material; landfill capacity and permitting may limit excavation and disposal rates.	Long range transport may be required dependent on landfill capacity/location; extensive site work and earthwork to accommodate transportation of material.	Moderate	Retain for consideration.

Technology	Process Options	Effectiveness in Addressing RAOs	Implementability	Key Factors	Cost	Status
GROUNDWATER TECHNOLOGIES						
Institutional controls						
Institutional Controls	Groundwater use restrictions; and long-term monitoring program.	Effective for human health risk RAOs.	Easily implemented.	Requires regulatory and public acceptance of restricted/diminished resource use.	Low	Retained for use with other technologies.
***In Situ* Biological Treatment**						
Monitored Natural Attenuation	Biodegradation.	Potentially effective over the long term; groundwater will be monitored to evaluate effectiveness.	Easily implemented.	Dependent on existing conditions; i.e., contaminant concentrations, oxygen content, and microbes; intermediate degradation products may be more mobile and more toxic than the original contaminant; long-term monitoring will be required.	Low	Retained for use with other technologies.
Enhanced Bioremediation	Enhanced aerobic bioremediation.	Effective for all RAOs.	Moderately easy to implement; would require treatability study and pilot test to determine appropriate reagents and application rates.	Dependent on existing conditions; i.e., contaminant concentrations, oxygen content, and hydraulic conductivity; long-term monitoring will be required.	Moderate	Retained for use with other technologies.
Containment						
Physical Barriers	A slurry wall is installed from the ground surface to a confining layer; contains contaminated groundwater, may also divert contaminated groundwater from drinking water intakes or toward a treatment system.	Effective for prevention of contaminant migration, thereby effective for all RAOs.	Easily implementable; requires design/construction of an engineered slurry wall or other type of physical barrier.	Most effective when barrier is able to be keyed into a low permeability layer; cost increases greatly when installed deeper than 100 feet.	Low	Not retained.

Technology	Process Options	Effectiveness in Addressing RAOs	Implementability	Key Factors	Cost	Status
***Ex Situ* Physical/Chemical Treatment**						
Filtration (Adsorption/Absorption)	Isolates solid particles by running a fluid stream through a porous medium; utilizes gravity or a pressure differential across the filtration medium; chemicals are not destroyed; they are merely concentrated, making reclamation possible.	Effective for all RAOs.	Moderate difficulty for implementation; would require design/construction of treatment process and facility; treatment times are extensive; requires long-term operation and maintenance; hydrogeological data would be needed to determine flows rates and treatment process parameters.	High concentrations of contaminants would require frequent replacement of adsorbent unit; chemicals are not destroyed, thereby requiring proper treatment, disposal, or reclamation.	Moderate to High	Not retained.

NOTE: COC = Contaminant of concern.
RAO = Remedial action objective.
SVOC = Semivolatile organic compound.
VOC = Volatile organic compound.

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TABLE 8-1 ALTERNATIVE EVALUATION SUMMARY

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	**Site Management**	**Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls**	**Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater, and Institutional Controls**
(1) Overall Protectiveness of Public Health and the Environment				
	There is no reduction of risk with this alternative. The soil contaminant migration pathways would continue to pose unacceptable risk to all receptors.	Prevents human contact through the implementation of institutional controls.	Prevents human contact and reduces potential migration of contaminants to groundwater and surface water.	Prevents human contact and reduces potential migration of contaminants to groundwater and surface water.
(2) Standards, Criteria, and Guidance				
	Does not meet SCG criteria.	Does not meet SCG criteria.	Does not meet SCG criteria.	Will meet SCG criteria.
(3) Long-Term Effectiveness and Permanence				
	This alternative will not provide long-term effectiveness or permanence. This alternative offers no controls.	This alternative will not provide long-term effectiveness or permanence.	When designed and implemented properly, effectively eliminates exposure and prevents transport; however, requires long-term monitoring/maintenance.	When designed and implemented properly, effectively eliminates exposure and prevents transport; however, requires long-term monitoring/maintenance.
(4) Reduction of Toxicity, Mobility, or Volume of Contamination				
Amount of Hazardous Materials Destroyed, Treated, or Removed	None.	None.	None.	Will reduce the volume and mobility of contamination via soil removal.
Degree of Expected Reductions in Toxicity, Mobility, or Volume	None.	None.	Contaminated soil will be contained using a soil cover, thereby reducing contaminant mobility. Toxicity and volume of contaminants will not be reduced.	Contaminated soil will be disposed of in permitted facilities that use measures to reduce or eliminate the risk of toxic mobility.
Irreversible Treatment?	No.	No.	Reversible. Contaminated fill could be uncovered.	Yes.
Residuals Remaining After Treatment	Yes.	Contaminants will remain onsite.	Residuals will remain under cover.	No.

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	**Site Management**	**Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls**	**Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater, and Institutional Controls**
(5) Short-Term Impact and Effectiveness				
Community Protection	There is no action and, therefore, no additional risk to the community.	No additional risk to the community.	Increased short-term risks to the public during grading activities. Dust may be produced during grading activities. These can be mitigated through standard construction practices.	Increased short-term risks to the public during excavation activities and transport of equipment and materials to and from site. Dust may be produced during excavation and backfill activities. These can be mitigated through standard construction practices.
Worker Protection	There is no action and, therefore, no workers will be present on site.	Workers can potentially be minimally exposed to contaminated media during fence repair activities. Risks can be minimized by implementing health and safety controls.	Workers can potentially be exposed to contaminated media during grading activities. Work around heavy equipment carries potential risk to workers. Risks can be minimized by implementing controls.	Workers can potentially be exposed to contaminated media during excavation activities. Work around heavy equipment carries potential risk to workers. Risks can be minimized by implementing health and safety controls.
Environmental Impacts	There are no short-term impacts associated with this alternative.	Wastes produced will include contaminated personal protective equipment. Wastes will be managed in compliance with ARARs.	Wastes produced will include contaminated personal protective equipment. Wastes will be managed in compliance with ARARs.	Wastes produced will include contaminated personal protective equipment. Wastes will be managed in compliance with ARARs.
Time Until Action Complete (Field Construction Time)	No action taken.	Approximately 2 days (for initial fence repairs)	Approximately 3 months.	Approximately 3 months.

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
	No Action	**Site Management**	**Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls**	**Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater, and Institutional Controls**
(6) Implementability				
Ability to Construct and Operate	Not applicable.	Excavation, disposal, demolition, and containment alternatives can be implemented, and have been used nationally.	Excavation, disposal, demolition, and containment alternatives can be implemented, and have been used nationally.	Excavation, disposal, demolition, and containment alternatives can be implemented, and have been used nationally.
Monitoring Requirements	Not applicable.	Groundwater sampling will be completed to monitor potential contaminant migration.	Groundwater sampling will be completed for monitored natural attenuation.	Soil will be sampled and analyzed to confirm removal of impacted area; groundwater sampling will be completed to monitor effectiveness of treatment.
Availability of Equipment and Specialists	Not applicable.	Equipment and specialists are available for the implementation of all of these technologies.		
Ability to Obtain Approvals and Coordinate with Other Agencies	Not applicable.	Ability to obtain approvals and coordinate with other agencies assumed to be possible.		
(7) Cost Effectiveness				
Cost	**$0**	**$214,464**	**$593,033**	**$1,975,977**
(8) Land Use				
	Not applicable.	Restricted	Restricted	Unrestricted.
(9) Community Acceptance				
	To be determined.	To be determined.	To be determined.	To be determined.

NOTE: ARAR = Applicable or relevant and appropriate requirement.
SCG = Standards, criteria, and guidance.

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Appendixes

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Appendix A

Remedial Investigation Data Tables and Figures

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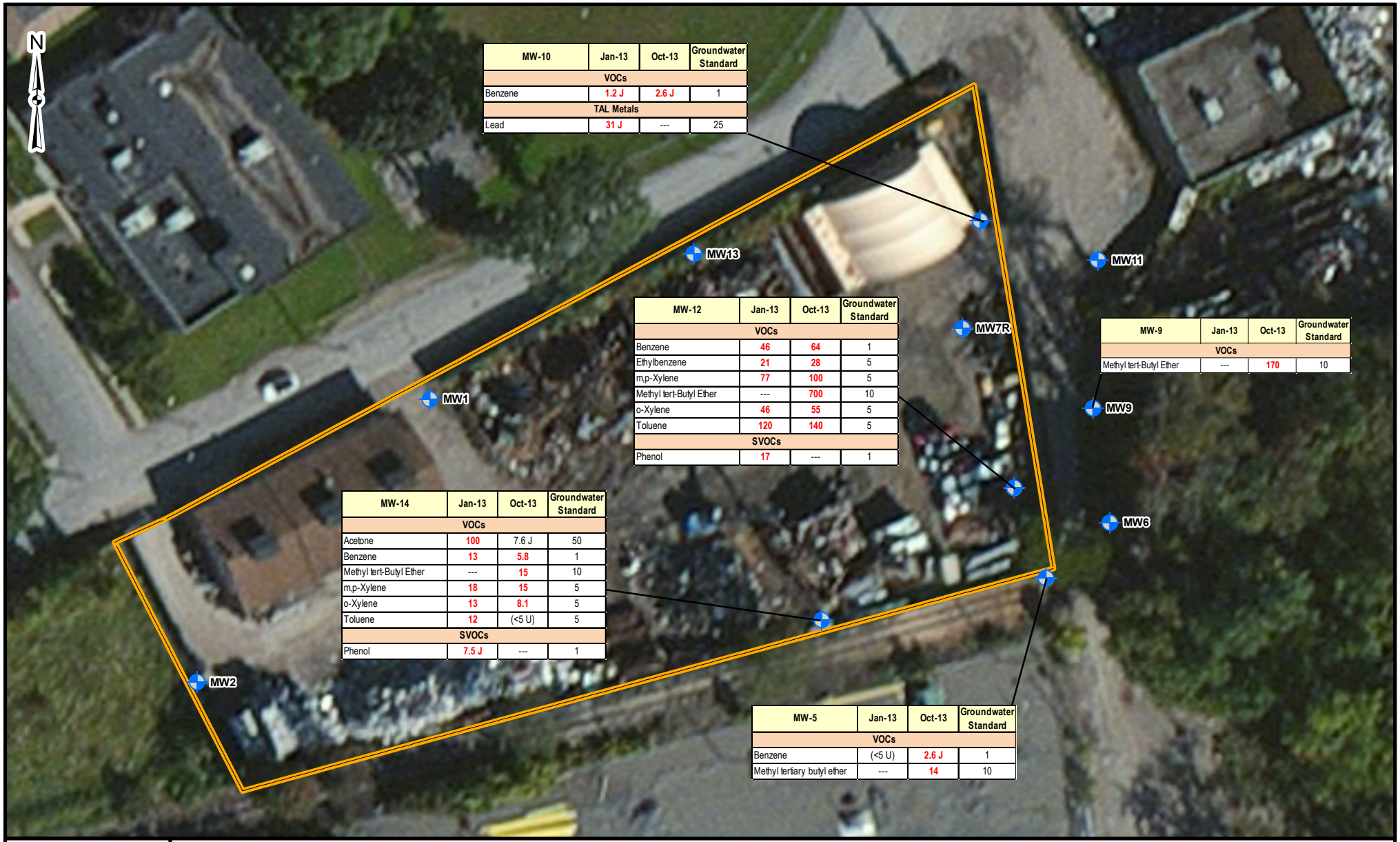

Legend

Site Boundary

Monitoring Well

All values are in micrograms per liter (parts per billion)

BOLD = Concentration was above the NYSDEC Ambient Water Quality Standard Class GA

J = Compound reported at an estimated concentration below the sample quantitation limit.

U = Not detected above the associated method detection limit.

VOC = Volatile Organic Compound

SVOC = Semivolatile Organic Compound

TAL = Target Analyte List

NS = Not Sampled

Feet

0 30 60 90 120

1 inch = 60 feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MILLENS SCRAPYARD (SITE NO. 356030)
REMEDIAL INVESTIGATION REPORT
KINGSTON, NEW YORK

FIGURE 3-12
GROUNDWATER SAMPLING RESULTS

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
CJS	ALK	ALK	RSC	AS SHOWN	AUGUST, 2014	14907.17	GIS\FIGURES\RI\1490717_Millens_Figure_X.MXD

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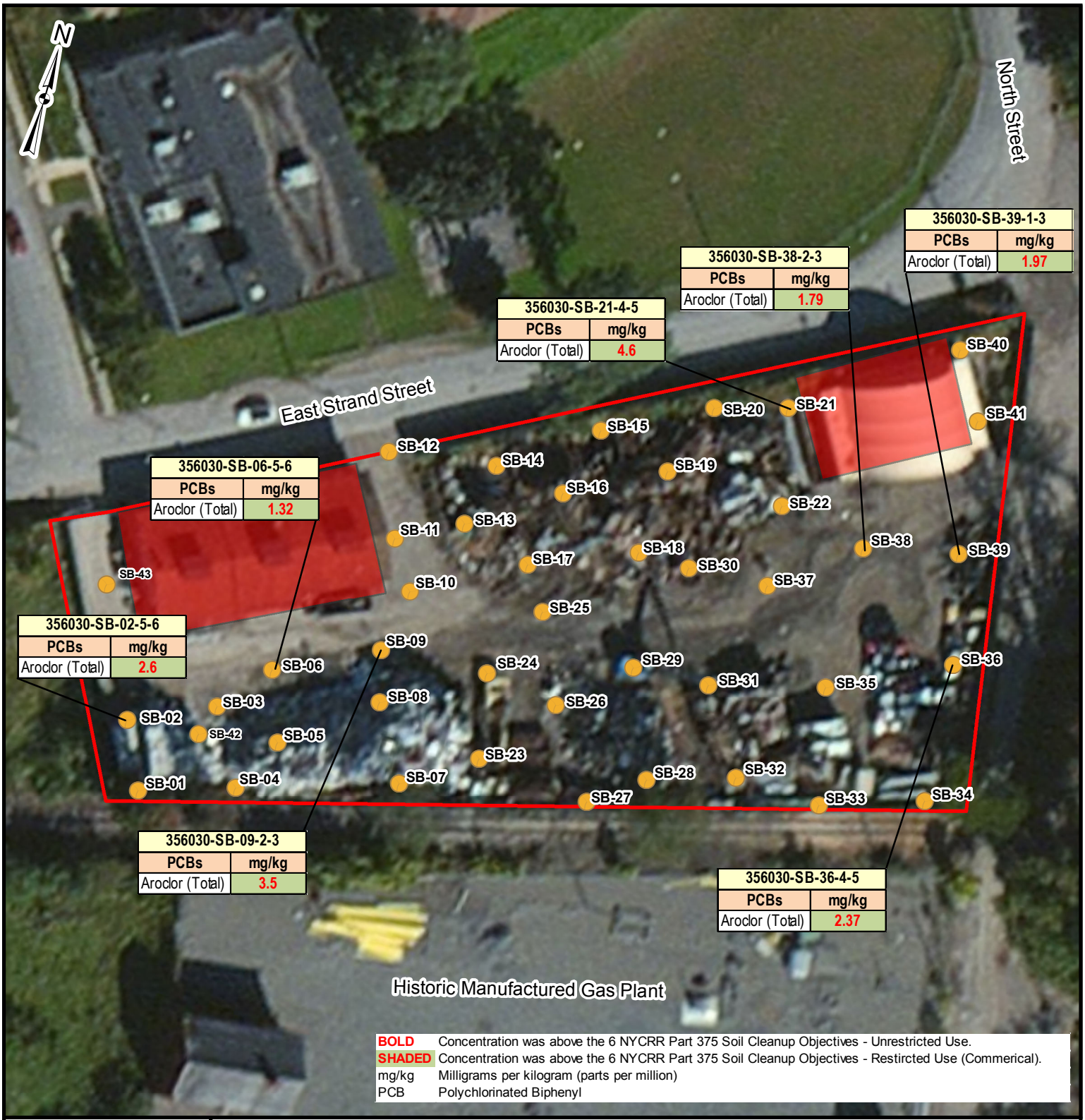
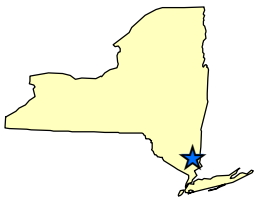


BOLD	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.
SHADED	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use (Commerical).
mg/kg	Milligrams per kilogram (parts per million)
PCB	Polychlorinated Biphenyl



Legend

- Site Boundary
- Structures
- Soil Boring

0 30 60 90 120 Feet

1 inch = 60 feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MILLENS SCRAPYARD (SITE NO. 356030)
REMEDIAL INVESTIGATION REPORT
KINGSTON, NEW YORK

FIGURE 3-8
ON-SITE SUBSURFACE SOIL
PCB EXCEEDANCES

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
CJS	CJS	HAW	RSC	AS SHOWN	AUGUST, 2014	14907.17	GIS\FIGURES\14907.17 Millens\GIS\MXDs\RI

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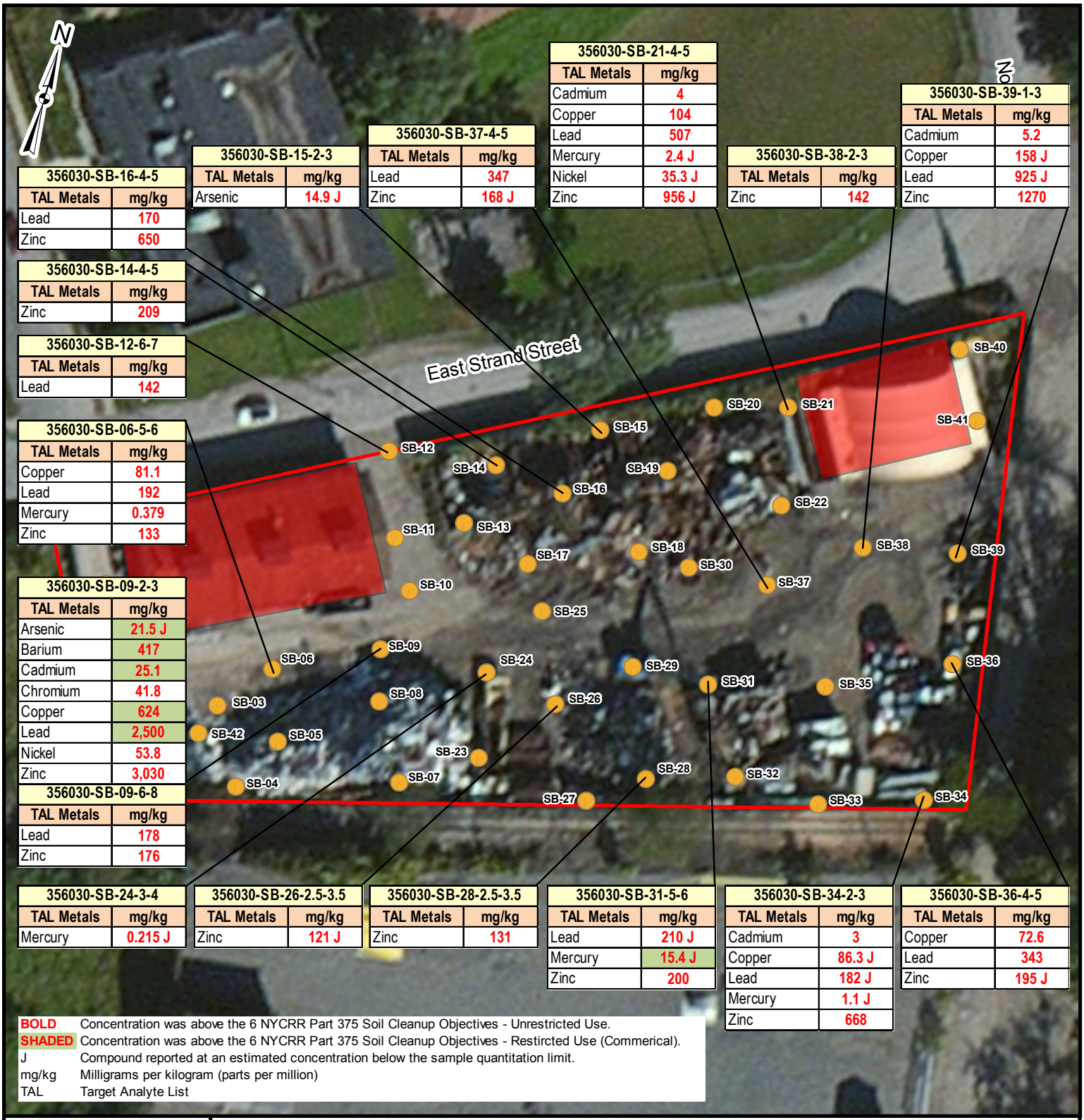


356030-SB-16-4-5	
TAL Metals	mg/kg
Lead	170
Zinc	650

356030-SB-14-4-5	
TAL Metals	mg/kg
Zinc	209

356030-SB-12-6-7	
TAL Metals	mg/kg
Lead	142

356030-SB-06-5-6	
TAL Metals	mg/kg
Copper	81.1
Lead	192
Mercury	0.379
Zinc	133

356030-SB-09-2-3	
TAL Metals	mg/kg
Arsenic	21.5 J
Barium	417
Cadmium	25.1
Chromium	41.8
Copper	624
Lead	2,500
Nickel	53.8
Zinc	3,030

356030-SB-09-6-8	
TAL Metals	mg/kg
Lead	178
Zinc	176

356030-SB-15-2-3	
TAL Metals	mg/kg
Arsenic	14.9 J

356030-SB-37-4-5	
TAL Metals	mg/kg
Lead	347
Zinc	168 J

356030-SB-21-4-5	
TAL Metals	mg/kg
Cadmium	4
Copper	104
Lead	507
Mercury	2.4 J
Nickel	35.3 J
Zinc	956 J

356030-SB-38-2-3	
TAL Metals	mg/kg
Zinc	142

356030-SB-39-1-3	
TAL Metals	mg/kg
Cadmium	5.2
Copper	158 J
Lead	925 J
Zinc	1270

356030-SB-24-3-4	
TAL Metals	mg/kg
Mercury	0.215 J

356030-SB-26-2.5-3.5	
TAL Metals	mg/kg
Zinc	121 J

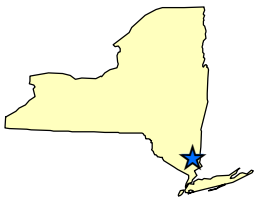
356030-SB-28-2.5-3.5	
TAL Metals	mg/kg
Zinc	131

356030-SB-31-5-6	
TAL Metals	mg/kg
Lead	210 J
Mercury	15.4 J
Zinc	200

356030-SB-34-2-3	
TAL Metals	mg/kg
Cadmium	3
Copper	86.3 J
Lead	182 J
Mercury	1.1 J
Zinc	668

356030-SB-36-4-5	
TAL Metals	mg/kg
Copper	72.6
Lead	343
Zinc	195 J

BOLD	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.
SHADED	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use (Commerical).
J	Compound reported at an estimated concentration below the sample quantitation limit.
mg/kg	Milligrams per kilogram (parts per million)
TAL	Target Analyte List



Legend

- Site Boundary
- Soil Boring
- Structures

0 30 60 90 120 Feet

1 inch = 60 feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MILLENS SCRAPYARD (SITE NO. 356030)
REMEDIAL INVESTIGATION REPORT
KINGSTON, NEW YORK

FIGURE 3-7
ON-SITE SUBSURFACE SOIL
METAL EXCEEDANCES

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
CJS	CJS	HAW	RSC	AS SHOWN	AUGUST, 2014	14907.17	GIS\FIGURES\14907.17 Millens\GIS\MXDs\RI

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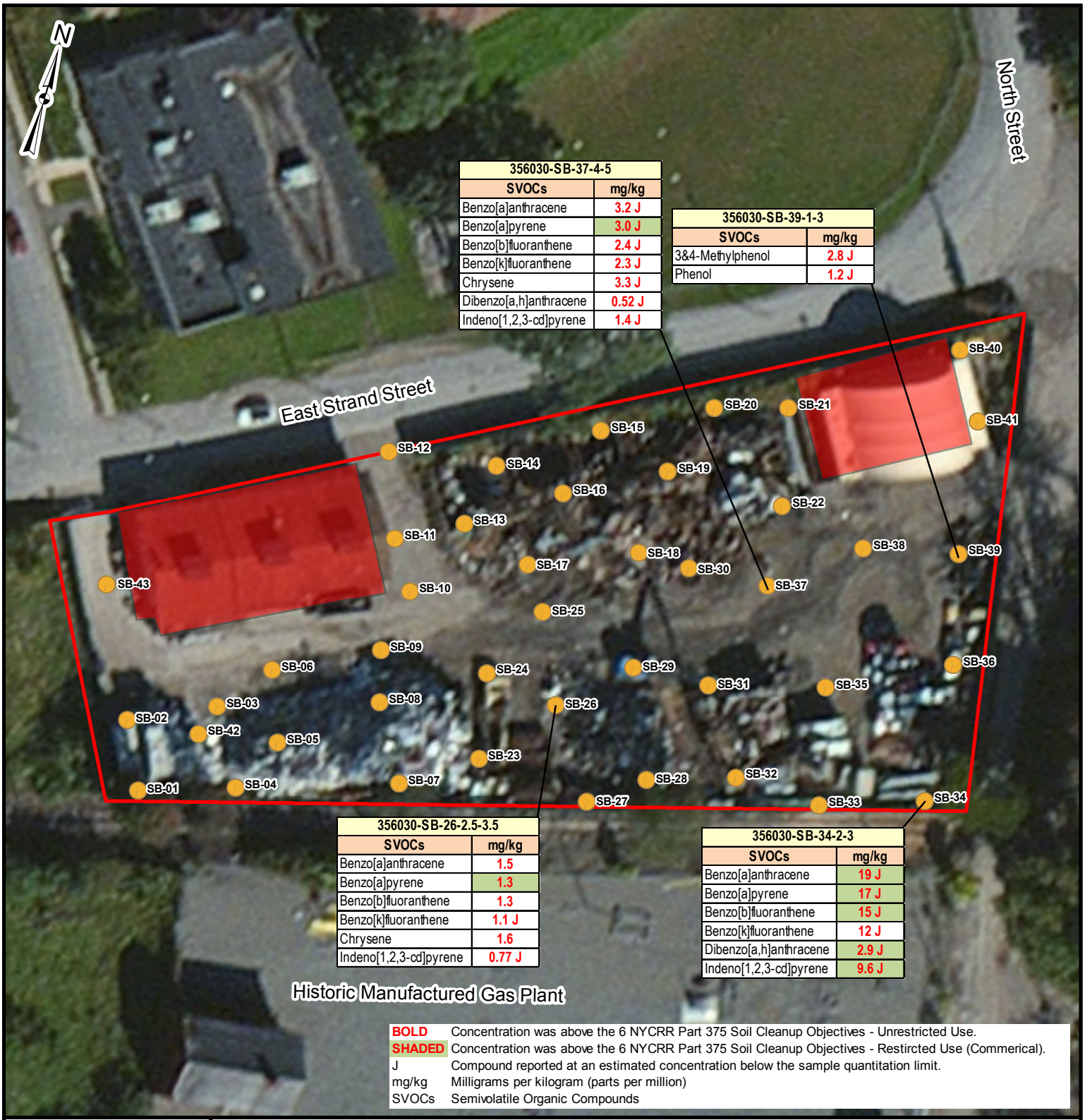


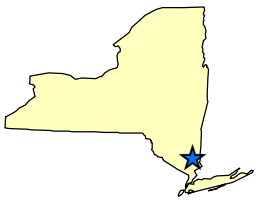
356030-SB-37-4-5	
SVOCs	mg/kg
Benzo[a]anthracene	3.2 J
Benzo[a]pyrene	3.0 J
Benzo[b]fluoranthene	2.4 J
Benzo[k]fluoranthene	2.3 J
Chrysene	3.3 J
Dibenzo[a,h]anthracene	0.52 J
Indeno[1,2,3-cd]pyrene	1.4 J

356030-SB-39-1-3	
SVOCs	mg/kg
3&4-Methylphenol	2.8 J
Phenol	1.2 J

356030-SB-26-2.5-3.5	
SVOCs	mg/kg
Benzo[a]anthracene	1.5
Benzo[a]pyrene	1.3
Benzo[b]fluoranthene	1.3
Benzo[k]fluoranthene	1.1 J
Chrysene	1.6
Indeno[1,2,3-cd]pyrene	0.77 J

356030-SB-34-2-3	
SVOCs	mg/kg
Benzo[a]anthracene	19 J
Benzo[a]pyrene	17 J
Benzo[b]fluoranthene	15 J
Benzo[k]fluoranthene	12 J
Dibenzo[a,h]anthracene	2.9 J
Indeno[1,2,3-cd]pyrene	9.6 J

BOLD	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.
SHADED	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use (Commerical).
J	Compound reported at an estimated concentration below the sample quantitation limit.
mg/kg	Milligrams per kilogram (parts per million)
SVOCs	Semivolatile Organic Compounds



Legend

- Site Boundary
- Structures
- Subsurface Soil

Feet
0 30 60 90 120

1 inch = 60 feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MILLENS SCRAPYARD (SITE NO. 356030)
REMEDIAL INVESTIGATION REPORT
KINGSTON, NEW YORK

FIGURE 3-6
ON-SITE SUBSURFACE SOIL
SVOC EXCEEDANCES

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
CJS	CJS	HAW	RSC	AS SHOWN	AUGUST, 2014	14907.17	GIS\FIGURES\14907.17 Millens\GIS\MXDs\RI

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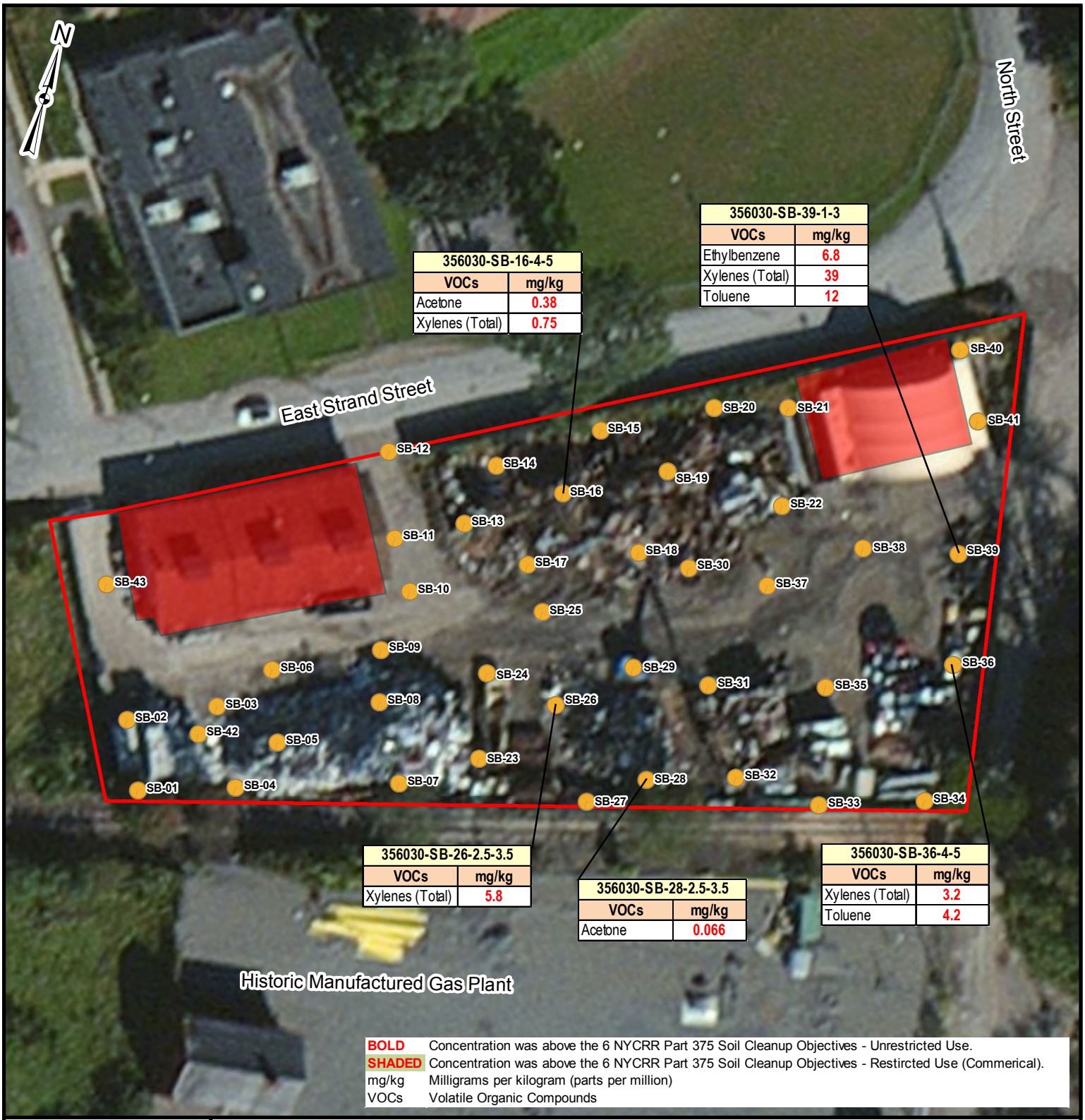


356030-SB-16-4-5	
VOCs	mg/kg
Acetone	0.38
Xylenes (Total)	0.75

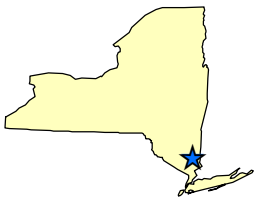
356030-SB-39-1-3	
VOCs	mg/kg
Ethylbenzene	6.8
Xylenes (Total)	39
Toluene	12

356030-SB-26-2.5-3.5	
VOCs	mg/kg
Xylenes (Total)	5.8

356030-SB-28-2.5-3.5	
VOCs	mg/kg
Acetone	0.066

356030-SB-36-4-5	
VOCs	mg/kg
Xylenes (Total)	3.2
Toluene	4.2

BOLD	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.
SHADED	Concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use (Commerical).
mg/kg	Milligrams per kilogram (parts per million)
VOCs	Volatile Organic Compounds



Legend

- Site Boundary
- Structures
- Soil Boring

Feet
0 30 60 90 120
1 inch = 60 feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

MILLENS SCRAPYARD (SITE NO. 356030)
REMEDIAL INVESTIGATION REPORT
KINGSTON, NEW YORK

FIGURE 3-5
ON-SITE SUBSURFACE SOIL
VOC EXCEEDANCES

PROJECT MGR:	DESIGNED BY:	CREATED BY:	CHECKED BY:	SCALE:	DATE:	PROJECT NO:	FILE NO:
CJS	CJS	HAW	RSC	AS SHOWN	AUGUST, 2014	14907.17	GIS\FIGURES\14907.17 Millens\GIS\MXDs\RI

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TABLE 3-2 VOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8260B	Sample ID	356030-SB-01-4-6		356030-SB-02-5-6		356030-SB-03-5-6		356030-SB-04-5-6		356030-SB-05-5-6		356030-SB-06-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-001		R1208700-002		R1208700-003		R1208700-004		R1208700-005		R1208700-006			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
2-Butanone (MEK)	(mg/kg)	(<0.0027)	U	(<0.0026)	U	(<0.0026)	U	(<0.0028)	U	(<0.0026)	U	0.0036	J	0.12	500
2-Hexanone	(mg/kg)	(<0.0015)	U	(<0.0014)	U	(<0.0014)	U	(<0.0015)	U	(<0.0014)	U	(<0.0015)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.0012)	U	(<0.0011)	U	(<0.0011)	U	(<0.0012)	U	(<0.0012)	U	(<0.0012)	U	---	---
Acetone	(mg/kg)	(<0.0033)	U	(<0.0031)	U	(<0.0031)	U	(<0.0035)	U	(<0.0032)	U	0.019		0.05	500
Benzene	(mg/kg)	(<0.00034)	U	(<0.00032)	U	(<0.00032)	U	(<0.00036)	U	(<0.00033)	U	(<0.00034)	U	0.06	44
Carbon Disulfide	(mg/kg)	(<0.0015)	U	(<0.0014)	U	(<0.0014)	U	(<0.0016)	U	(<0.0015)	U	(<0.0015)	U	---	---
Dichloromethane	(mg/kg)	0.0069		0.012		0.0067		0.0058	U	0.018		0.039		---	---
Ethylbenzene	(mg/kg)	(<0.00027)	U	(<0.00026)	U	(<0.00026)	U	(<0.00028)	U	(<0.00026)	U	(<0.00027)	U	1	390
m,p-Xylenes	(mg/kg)	(<0.0013)	U	(<0.0012)	U	(<0.0013)	U	(<0.0014)	U	(<0.0013)	U	(<0.0013)	U	---	---
o-Xylene	(mg/kg)	(<0.00057)	U	(<0.00053)	U	(<0.00053)	U	(<0.00059)	U	(<0.00055)	U	(<0.00057)	U	---	---
Xylenes (Total)	(mg/kg)	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		0.26	500
Toluene	(mg/kg)	(<0.00079)	U	(<0.00074)	U	(<0.00074)	U	(<0.00082)	U	(<0.00076)	U	(<0.00079)	U	0.7	500

Parameter List EPA Method 8260B	Sample ID	356030-SB-07-4-6		356030-SB-08-5-6		356030-SB-09-2-3		356030-SB-09-6-8		356030-SB-10-5-6		356030-SB-11-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-007		R1208700-009		R1208700-010		R1208700-011		R1208700-012		R1208700-013			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
2-Butanone (MEK)	(mg/kg)	(<0.0027)	U	(<0.0027)	U	(<0.23)	U	(<0.0028)	U	0.004	J	(<0.0031)	U	0.12	500
2-Hexanone	(mg/kg)	(<0.0015)	U	(<0.0014)	U	(<0.087)	U	(<0.0015)	U	(<0.0014)	U	(<0.0017)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.0012)	U	(<0.0012)	U	(<0.075)	U	(<0.0012)	U	(<0.0012)	U	(<0.0014)	U	---	---
Acetone	(mg/kg)	0.016		0.0048	J	0.55	J	0.02		(<0.035)	U	(<0.013)	U	0.05	500
Benzene	(mg/kg)	(<0.00034)	U	(<0.00034)	U	(<0.041)	U	(<0.00036)	U	(<0.00033)	U	(<0.0004)	U	0.06	44
Carbon Disulfide	(mg/kg)	(<0.0015)	U	(<0.0015)	U	(<0.045)	U	(<0.0016)	U	(<0.0015)	U	(<0.0017)	U	---	---
Dichloromethane	(mg/kg)	0.025		0.015		0.1	J	0.049		0.023		0.019		---	---
Ethylbenzene	(mg/kg)	(<0.00027)	U	(<0.00027)	U	(<0.047)	U	0.00038	J	(<0.00027)	U	(<0.00032)	U	1	390
m,p-Xylenes	(mg/kg)	(<0.0013)	U	(<0.0013)	U	(<0.081)	U	(<0.0014)	U	(<0.0013)	U	(<0.0015)	U	---	---
o-Xylene	(mg/kg)	(<0.00056)	U	(<0.00056)	U	(<0.044)	U	(<0.00059)	U	(<0.00055)	U	(<0.00065)	U	---	---
Xylenes (Total)	(mg/kg)	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		0.26	500
Toluene	(mg/kg)	(<0.00079)	U	(<0.00078)	U	(<0.051)	U	(<0.00082)	U	(<0.00076)	U	(<0.00091)	U	0.7	500

NOTE:
EPA = U.S. Enivronmental Protection Agency
ID = Identification
NYCRR = New York Code of Rules and Regulation
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit.
J = The associated numerical value is and estimated quantity.
--- = No standard.
Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.

TABLE 3-2 VOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8260B	Sample ID	356030-SB-12-6-7		356030-SB-13-4-5		356030-SB-14-4-5		356030-SB-15-2-3		356030-SB-16-4-5		356030-SB-17-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-014		R1208700-015		R1208700-016		R1208700-017		R1208700-018		R1208700-019			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
2-Butanone (MEK)	(mg/kg)	(<0.0028)	U	(<0.0026)	U	(<0.0031)	U	(<0.0031)	U	0.089		0.006		0.12	500
2-Hexanone	(mg/kg)	(<0.0015)	U	(<0.0014)	U	(<0.0017)	U	(<0.0016)	U	(<0.0075)	U	(<0.0015)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.0012)	U	(<0.0011)	U	(<0.0013)	U	(<0.0013)	U	(<0.0061)	U	(<0.0012)	U	---	---
Acetone	(mg/kg)	(<0.0051)	U	(<0.022)	U	(<0.015)	U	(<0.0038)	U	**0.38**		(<0.042)	U	0.05	500
Benzene	(mg/kg)	(<0.00035)	U	(<0.00033)	U	(<0.00039)	U	(<0.00039)	U	0.0033	J	(<0.00034)	U	0.06	44
Carbon Disulfide	(mg/kg)	(<0.0015)	U	(<0.0014)	U	(<0.0017)	U	(<0.0017)	U	0.0088	J	(<0.0015)	U	---	---
Dichloromethane	(mg/kg)	0.069		0.036		0.037		0.01		0.035		0.018		---	---
Ethylbenzene	(mg/kg)	(<0.00028)	U	(<0.00026)	U	(<0.00031)	U	(<0.00031)	U	0.054		(<0.00027)	U	1	390
m,p-Xylenes	(mg/kg)	(<0.0013)	U	(<0.0013)	U	(<0.0015)	U	(<0.0015)	U	0.38		(<0.0013)	U	---	---
o-Xylene	(mg/kg)	(<0.00057)	U	(<0.00054)	U	(<0.00064)	U	(<0.00064)	U	0.37		(<0.00057)	U	---	---
Xylenes (Total)	(mg/kg)	Not Detected		Not Detected		Not Detected		Not Detected		**0.75**		Not Detected		0.26	500
Toluene	(mg/kg)	(<0.0008)	U	(<0.00075)	U	(<0.00089)	U	(<0.00089)	U	0.0053	J	(<0.00079)	U	0.7	500

Parameter List EPA Method 8260B	Sample ID	356030-SB-18-5-6		356030-SB-19-5-6		356030-SB-20-3-4		356030-SB-21-4-5		356030-SB-22-5-6		356030-SB-23-3-4		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-020		R1208700-021		R1208700-022		R1208700-023		R1208700-024		R1208700-027			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
2-Butanone (MEK)	(mg/kg)	(<0.0027)	U	(<0.0028)	U	(<0.0029)	U	0.009		(<0.0028)	U	0.0037	J	0.12	500
2-Hexanone	(mg/kg)	(<0.0014)	U	(<0.0015)	U	(<0.0015)	U	0.0014	J	(<0.0015)	U	(<0.0014)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.0012)	U	(<0.0012)	U	(<0.0013)	U	0.0012	J	(<0.0012)	U	(<0.0012)	U	---	---
Acetone	(mg/kg)	0.016		(<0.02)	U	(<0.0067)	U	0.031		(<0.014)	U	0.029		0.05	500
Benzene	(mg/kg)	(<0.00034)	U	(<0.00035)	U	(<0.00036)	U	0.0027	J	(<0.00035)	U	0.00064	J	0.06	44
Carbon Disulfide	(mg/kg)	(<0.0015)	U	(<0.0015)	U	(<0.0016)	U	(<0.0014)	U	(<0.0015)	U	0.0023	J	---	---
Dichloromethane	(mg/kg)	0.0049	J	0.029		0.02		0.011		0.034		0.0056		---	---
Ethylbenzene	(mg/kg)	(<0.00027)	U	(<0.00028)	U	(<0.00029)	U	0.0038	J	(<0.00028)	U	0.0021	J	1	390
m,p-Xylenes	(mg/kg)	(<0.0013)	U	(<0.0013)	U	(<0.0014)	U	0.049		(<0.0013)	U	(<0.0013)	U	---	---
o-Xylene	(mg/kg)	(<0.00055)	U	(<0.00057)	U	(<0.00059)	U	0.0061		(<0.00057)	U	(<0.00055)	U	---	---
Xylenes (Total)	(mg/kg)	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		0.26	500
Toluene	(mg/kg)	(<0.00077)	U	(<0.0008)	U	(<0.00083)	U	0.0014	J	(<0.0008)	U	0.00077	U	0.7	500

NOTE: Concentration values in **bold** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.

TABLE 3-2 VOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8260B	Sample ID	356030-SB-24-3-4		356030-SB-25-4-5		356030-SB-26-2.5-3.5		356030-SB-27-3-4		356030-SB-28-2.5-3.5		356030-SB-29-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-028		R1208700-029		R1208700-030		R1208700-031		R1208700-032		R1208700-034			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
2-Butanone (MEK)	(mg/kg)	0.012		(<0.0027)	U	(<0.23)	U	0.0065		0.013		0.0032	J	0.12	500
2-Hexanone	(mg/kg)	(<0.0014)	U	(<0.0014)	U	(<0.085)	U	(<0.0015)	U	(<0.0014)	U	(<0.0015)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.0012)	U	(<0.0012)	U	(<0.074)	U	(<0.0012)	U	0.0052	J	(<0.0012)	U	---	---
Acetone	(mg/kg)	0.099		0.014		(<0.16)	UJ	0.05		**0.066**		0.025		0.05	500
Benzene	(mg/kg)	(<0.00034)	U	(<0.00034)	U	(<0.04)	U	(<0.00034)	U	0.0005	J	(<0.00034)	U	0.06	44
Carbon Disulfide	(mg/kg)	(<0.0015)	U	0.0016	J	(<0.044)	U	(<0.0015)	U	(<0.0014)	U	(<0.0015)	U	---	---
Dichloromethane	(mg/kg)	0.0071		0.0045	J	(<0.068)	U	0.0073		0.0011	J	0.0088		---	---
Ethylbenzene	(mg/kg)	(<0.00027)	U	(<0.00027)	U	0.45	J	(<0.00027)	U	(<0.00026)	U	(<0.00027)	U	1	390
m,p-Xylenes	(mg/kg)	(<0.0013)	U	(<0.0013)	U	3.9		(<0.0013)	U	(<0.0013)	U	(<0.0013)	U	---	---
o-Xylene	(mg/kg)	(<0.00055)	U	(<0.00056)	U	1.9		(<0.00056)	U	(<0.00054)	U	(<0.00056)	U	---	---
Xylenes (Total)	(mg/kg)	Not Detected		Not Detected		**5.8**		Not Detected		Not Detected		Not Detected		0.26	500
Toluene	(mg/kg)	(<0.00077)	U	(<0.00078)	U	0.27	J	(<0.00078)	U	(<0.00075)	U	(<0.00079)	U	0.7	500

Parameter List EPA Method 8260B	Sample ID	356030-SB-30-5-6		356030-SB-31-5-6		356030-SB-32-4-5		356030-SB-33-4-5		356030-SB-34-2-3		356030-SB-35-7-8		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-035		R1208700-036		R1208700-037		R1208700-038		R1208700-039		R1208700-040			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
2-Butanone (MEK)	(mg/kg)	(<0.0027)	U	0.11		0.2		0.0074		0.0047	J	0.0036	J	0.12	500
2-Hexanone	(mg/kg)	(<0.0014)	U	(<0.002)	U	(<0.0015)	U	(<0.0014)	U	(<0.0015)	U	(<0.0014)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.0012)	U	(<0.0016)	U	0.012		0.0016	J	(<0.0013)	U	(<0.0012)	U	---	---
Acetone	(mg/kg)	0.014		1.8		1.8		0.03		0.014		0.02		0.05	500
Benzene	(mg/kg)	(<0.00034)	U	(<0.00046)	U	0.00093	J	0.0014	J	0.0041	J	0.00087	J	0.06	44
Carbon Disulfide	(mg/kg)	(<0.0015)	U	0.01		0.0066		0.0023	J	(<0.0016)	U	(<0.0015)	U	---	---
Dichloromethane	(mg/kg)	0.0021	J	0.024		0.002	J	0.0047	J	(<0.00071)	U	(<0.00065)	U	---	---
Ethylbenzene	(mg/kg)	(<0.00027)	U	(<0.00037)	U	0.0011	J	0.0028	J	0.00031	J	(<0.00027)	U	1	390
m,p-Xylenes	(mg/kg)	(<0.0013)	U	(<0.0018)	U	0.0046	J	0.013		(<0.0014)	U	(<0.0013)	U	---	---
o-Xylene	(mg/kg)	(<0.00056)	U	0.0012	J	0.0039	J	0.0066		(<0.0006)	U	(<0.00055)	U	---	---
Xylenes (Total)	(mg/kg)	Not Detected		0.0012		0.0085		0.0196		Not Detected		Not Detected		0.26	500
Toluene	(mg/kg)	(<0.00078)	U	(<0.0028)	U	(<0.0022)	U	0.013		(<0.00092)	U	(<0.00077)	U	0.7	500

NOTE: UJ = The compound analyzed for, but not detected. The sample quantitation limit is an estimated quantity due to variance from quality control limits.

TABLE 3-2 VOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8260B	Sample ID	356030-SB-36-4-5		356030-SB-37-4-5		356030-SB-38-2-3		356030-SB-39-1-3		356030-SB-40-6-7		356030-SB-41-6-7		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restircted Use - Commercial (mg/kg)
	Lab ID	R1208700-041		R1208700-042		R1208700-043		R1208700-044		R1208700-045		R1208700-046			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
2-Butanone (MEK)	(mg/kg)	(<0.28)	U	0.0038	J	0.0056	J	(<0.21)	U	(<0.0028)	U	(<0.0028)	U	0.12	500
2-Hexanone	(mg/kg)	(<0.11)	U	(<0.0014)	U	(<0.0015)	UJ	(<0.079)	U	(<0.0015)	U	(<0.0015)	U	---	---
4-Methyl-2-pentanone	(mg/kg)	(<0.089)	U	(<0.0011)	U	(<0.0012)	UJ	(<0.068)	U	(<0.0012)	U	(<0.0012)	U	---	---
Acetone	(mg/kg)	(<0.2)	UJ	0.021		0.035	J	(<0.15)	UJ	0.0052	J	0.0061		0.05	500
Benzene	(mg/kg)	0.36	J	(<0.00032)	U	0.0028	J	0.9		0.0022	J	0.0049	J	0.06	44
Carbon Disulfide	(mg/kg)	(<0.054)	U	(<0.0014)	U	0.0031	J	(<0.041)	U	(<0.0015)	U	0.0026	J	---	---
Dichloromethane	(mg/kg)	(<0.082)	U	0.006		0.00069	J	(<0.063)	U	(<0.00069)	U	(<0.00068)	U	---	---
Ethylbenzene	(mg/kg)	0.34	J	(<0.00026)	U	0.025	J	**6.8**		0.001	J	0.018		1	390
m,p-Xylenes	(mg/kg)	1.8	J	(<0.0013)	U	0.038	J	28		0.0019	J	0.051		---	---
o-Xylene	(mg/kg)	1.4		(<0.00053)	U	0.015	J	11		0.0014	J	0.019		---	---
Xylenes (Total)	(mg/kg)	**3.2**		Not Detected		Not Detected		**39**		0.0033		0.07		0.26	500
Toluene	(mg/kg)	**4.2**		(<0.00074)	U	0.014	J	**12**		(<0.0025)	U	(<0.0032)	U	0.7	500

Parameter List EPA Method 8260B	Sample ID	356030-SB-42-5-6		356030-SB-43-5-6		356030-SB-DUP 1[(a)]		356030-SB-DUP 2[(a)]		356030-SB-DUP 3[(a)]		356030-RB1[(b)]		356030-RB2[(b)]	
	Lab ID	R1208700-048		R1208700-049		R1208700-008		R1208700-033		R1208700-047		R1208700-026		R1208700-050	
	Sample Type	Subsurface Soil		Subsurface Soil		QA/QC		QA/QC		QA/QC		QA/QC		QA/QC	
	Sample Date	12/20/2012		12/20/2012		12/19/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012	
2-Butanone (MEK)	(mg/kg)	(<0.0029)	UJ	(<0.0026)	U	(<0.0026)	U	0.0036	J	(<0.0026)	U	(<0.81)	U	(<0.81)	U
2-Hexanone	(mg/kg)	(<0.0015)	UJ	(<0.0014)	U	(<0.0014)	U	(<0.0014)	U	(<0.0014)	U	(<1.7)	UJ	(<1.7)	U
4-Methyl-2-pentanone	(mg/kg)	(<0.0013)	UJ	(<0.0011)	U	(<0.0012)	U	0.0013	J	(<0.0011)	U	(<0.67)	U	(<0.67)	U
Acetone	(mg/kg)	0.0073	J	(<0.0031)	U	0.0085		0.04		(<0.0031)	U	(<1.3)	UJ	(<1.3)	U
Benzene	(mg/kg)	0.0039	J	0.00058	J	(<0.00033)	U	0.0012	J	0.00068	J	(<0.2)	U	(<0.2)	U
Carbon Disulfide	(mg/kg)	(<0.0016)	UJ	(<0.0014)	U	(<0.0015)	U	(<0.0014)	U	(<0.0014)	U	(<0.22)	U	0.25	J
Dichloromethane	(mg/kg)	0.0013	J	(<0.00063)	U	0.028		0.0082		(<0.00063)	U	(<0.32)	U	(<0.32)	U
Ethylbenzene	(mg/kg)	0.00041	J	(<0.00026)	U	(<0.00027)	U	(<0.00026)	U	(<0.00026)	U	(<0.2)	U	(<0.2)	U
m,p-Xylenes	(mg/kg)	(<0.0014)	UJ	(<0.0013)	U	(<0.0013)	U	(<0.0013)	U	(<0.0012)	U	(<0.33)	U	(<0.33)	U
o-Xylene	(mg/kg)	(<0.00059)	UJ	(<0.00053)	U	(<0.00055)	U	(<0.00054)	U	(<0.00053)	U	(<0.2)	U	(<0.2)	U
Xylenes (Total)	(mg/kg)	Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected		Not Detected	
Toluene	(mg/kg)	(<0.0058)	U	(<0.00074)	U	(<0.00076)	U	(<0.00075)	U	(<0.0014)	U	(<0.2)	U	2.4	J

(a) 356030-SB-DUP 1 collected at 356230-SB-07-4-6; 356030-SB-DUP 2 collected at 356230-SB-28-2.5-3.5 ; and 356030-SB-DUP 3 collected at 356030-SB-41-6-7.
(b) Rinsate blanks are aqueous samples, units are in µg/L.
NOTE: QA/QC = Quality Control/Quality Assurance

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID	356030-SB-01-4-6		356030-SB-02-5-6		356030-SB-03-5-6		356030-SB-04-5-6		356030-SB-05-5-6		356030-SB-06-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-001		R1208700-002		R1208700-003		R1208700-004		R1208700-005		R1208700-006			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
2,4-Dimethylphenol	(mg/kg)	(<0.043)	U	(<0.041)	U	(<0.041)	U	(<0.045)	U	(<0.042)	U	(<0.043)	U	---	---
2-Methylnaphthalene	(mg/kg)	(<0.039)	UJ	(<0.037)	UJ	(<0.037)	UJ	(<0.041)	UJ	(<0.038)	UJ	(<0.039)	UJ	---	---
3&4-Methylphenol	(mg/kg)	(<0.059)	U	(<0.055)	U	(<0.055)	U	(<0.061)	U	(<0.057)	U	(<0.059)	U	0.33	500
Acenaphthene	(mg/kg)	(<0.056)	UJ	(<0.052)	UJ	(<0.052)	UJ	(<0.058)	UJ	(<0.054)	UJ	(<0.056)	UJ	20	500
Acenaphthylene	(mg/kg)	(<0.052)	UJ	(<0.049)	UJ	(<0.049)	UJ	(<0.054)	UJ	(<0.05)	UJ	(<0.052)	UJ	100	500
Anthracene	(mg/kg)	(<0.061)	UJ	(<0.057)	UJ	(<0.057)	UJ	(<0.063)	UJ	(<0.059)	UJ	0.075	J	100	500
Benzo[a]anthracene	(mg/kg)	(<0.06)	UJ	(<0.056)	UJ	(<0.056)	UJ	(<0.062)	UJ	(<0.058)	UJ	0.21	J	1	5.6
Benzo[a]pyrene	(mg/kg)	(<0.065)	U	(<0.061)	U	(<0.061)	U	(<0.067)	U	(<0.063)	U	0.23	J	1	1
Benzo[b]fluoranthene	(mg/kg)	(<0.094)	U	(<0.088)	U	(<0.088)	U	(<0.098)	U	(<0.091)	U	0.18	J	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	(<0.073)	U	(<0.069)	U	(<0.069)	U	(<0.076)	U	(<0.071)	U	0.21	J	100	500
Benzo[k]fluoranthene	(mg/kg)	(<0.07)	U	(<0.065)	U	(<0.065)	U	(<0.072)	U	(<0.067)	U	0.18	J	0.8	56
Benzyl Alcohol	(mg/kg)	0.11	J	0.094	J	0.085	J	0.097	J	0.077	J	0.092	J	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	(<0.054)	U	0.094	J	(<0.051)	U	(<0.056)	U	0.054	J	0.37	J	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.059)	U	(<0.056)	U	(<0.056)	U	(<0.062)	U	(<0.057)	U	(<0.059)	U	---	---
Carbazole	(mg/kg)	(<0.054)	U	(<0.051)	U	(<0.051)	U	(<0.056)	U	(<0.052)	U	(<0.054)	U	---	---
Chrysene	(mg/kg)	(<0.054)	U	(<0.051)	U	(<0.051)	U	(<0.057)	U	(<0.053)	U	0.24	J	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	UJ	(<0.098)	UJ	(<0.098)	UJ	(<0.11)	UJ	(<0.11)	UJ	(<0.11)	UJ	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.043)	UJ	(<0.04)	UJ	(<0.04)	UJ	(<0.044)	UJ	(<0.041)	UJ	(<0.043)	UJ	7	350
Diethyl Phthalate	(mg/kg)	(<0.05)	U	(<0.047)	U	(<0.048)	U	(<0.052)	U	(<0.049)	U	(<0.05)	U	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.11)	U	(<0.1)	U	(<0.1)	U	(<0.12)	U	(<0.11)	U	(<0.11)	U	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.075)	U	(<0.07)	U	(<0.07)	U	(<0.077)	U	(<0.072)	U	(<0.075)	U	---	---
Fluoranthene	(mg/kg)	(<0.062)	U	(<0.058)	U	(<0.058)	U	(<0.064)	U	(<0.06)	U	0.46		100	100
Fluorene	(mg/kg)	(<0.049)	UJ	(<0.046)	UJ	(<0.046)	UJ	(<0.051)	UJ	(<0.047)	UJ	(<0.049)	UJ	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	(<0.064)	UJ	(<0.06)	UJ	(<0.06)	UJ	(<0.067)	UJ	(<0.062)	UJ	0.15	J	0.5	5.6
Naphthalene	(mg/kg)	(<0.039)	UJ	(<0.037)	UJ	(<0.037)	UJ	(<0.041)	UJ	(<0.038)	UJ	(<0.039)	UJ	12	500
Phenanthrene	(mg/kg)	(<0.052)	UJ	(<0.049)	UJ	(<0.049)	UJ	(<0.054)	UJ	(<0.051)	UJ	0.4	J	100	500
Phenol	(mg/kg)	(<0.043)	U	(<0.04)	U	(<0.04)	U	(<0.045)	U	(<0.041)	U	(<0.043)	U	0.33	500
Pyrene	(mg/kg)	(<0.075)	U	(<0.071)	U	(<0.071)	U	(<0.078)	U	(<0.073)	U	0.53		100	500

NOTE:
EPA = U.S. Enivronmental Protection Agency
NYCRR = New York Code of Rules and Regulation
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit.
--- = No standard.
UJ = The compound analyzed for, but not detected. The sample quantitation limit is an estimated quantity due to variance from quality control limits.
J = The associated numerical value is and estimated quantity.
Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID Lab ID Sample Type Sample Date	356030-SB-07-4-6 R1208700-007 Subsurface Soil 12/19/2012		356030-SB-08-5-6 R1208700-009 Subsurface Soil 12/19/2012		356030-SB-09-2-3 R1208700-010 Subsurface Soil 12/19/2012		356030-SB-09-6-8 R1208700-011 Subsurface Soil 12/19/2012		356030-SB-10-5-6 R1208700-012 Subsurface Soil 12/19/2012		356030-SB-11-5-6 R1208700-013 Subsurface Soil 12/19/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
2,4-Dimethylphenol	(mg/kg)	(<0.043)	U	(<0.043)	U	(<0.21)	U	(<0.045)	U	(<0.042)	U	(<0.05)	U	---	---
2-Methylnaphthalene	(mg/kg)	(<0.039)	UJ	(<0.039)	UJ	1.8	J	(<0.041)	UJ	(<0.038)	UJ	(<0.045)	UJ	---	---
3&4-Methylphenol	(mg/kg)	(<0.059)	U	(<0.058)	U	(<0.29)	U	(<0.061)	U	(<0.057)	U	(<0.068)	U	0.33	500
Acenaphthene	(mg/kg)	(<0.055)	UJ	(<0.055)	UJ	0.56	J	(<0.058)	UJ	(<0.054)	UJ	(<0.064)	UJ	20	500
Acenaphthylene	(mg/kg)	(<0.052)	UJ	(<0.051)	UJ	(<0.26)	UJ	(<0.054)	UJ	(<0.05)	UJ	(<0.06)	UJ	100	500
Anthracene	(mg/kg)	(<0.061)	UJ	(<0.06)	UJ	0.6	J	(<0.063)	UJ	(<0.059)	UJ	(<0.07)	UJ	100	500
Benzo[a]anthracene	(mg/kg)	0.073	J	(<0.059)	UJ	1.1	J	0.079	J	(<0.058)	UJ	(<0.069)	UJ	1	5.6
Benzo[a]pyrene	(mg/kg)	0.071	J	(<0.064)	U	1.2	J	0.081	J	(<0.063)	U	(<0.075)	U	1	1
Benzo[b]fluoranthene	(mg/kg)	(<0.094)	U	(<0.093)	U	1.3	J	(<0.098)	U	(<0.091)	U	(<0.11)	U	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	(<0.073)	U	(<0.072)	U	1.5	J	(<0.076)	U	(<0.071)	U	(<0.085)	U	100	500
Benzo[k]fluoranthene	(mg/kg)	(<0.069)	U	(<0.069)	U	1.1	J	(<0.072)	U	(<0.067)	U	(<0.08)	U	0.8	56
Benzyl Alcohol	(mg/kg)	0.1	J	0.097	J	(<0.38)	U	0.099	J	0.099	J	0.12	J	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	0.061	J	0.07	J	1.9		0.9		0.062	J	(<0.062)	U	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.059)	U	(<0.059)	U	(<0.29)	U	(<0.062)	U	(<0.058)	U	(<0.069)	U	---	---
Carbazole	(mg/kg)	(<0.054)	U	(<0.053)	U	(<0.26)	U	(<0.056)	U	(<0.052)	U	(<0.062)	U	---	---
Chrysene	(mg/kg)	0.087	J	(<0.054)	U	1.4	J	0.08	J	(<0.053)	U	(<0.063)	U	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	UJ	(<0.11)	UJ	(<0.51)	UJ	(<0.11)	UJ	(<0.11)	UJ	(<0.13)	UJ	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.043)	UJ	(<0.042)	UJ	(<0.21)	UJ	(<0.044)	UJ	(<0.041)	UJ	(<0.049)	UJ	7	350
Diethyl Phthalate	(mg/kg)	(<0.05)	U	(<0.05)	U	(<0.25)	U	(<0.053)	U	(<0.049)	U	(<0.058)	U	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.11)	U	(<0.11)	U	(<0.52)	U	(<0.12)	U	(<0.11)	U	(<0.13)	U	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.074)	U	(<0.073)	U	(<0.36)	U	(<0.077)	U	(<0.072)	U	(<0.086)	U	---	---
Fluoranthene	(mg/kg)	0.088	J	(<0.061)	U	2.1		0.13	J	(<0.06)	U	(<0.072)	U	100	100
Fluorene	(mg/kg)	(<0.049)	UJ	(<0.048)	UJ	1.1	J	(<0.051)	UJ	(<0.047)	UJ	(<0.057)	UJ	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	(<0.064)	UJ	(<0.063)	UJ	1.1	J	(<0.067)	UJ	(<0.062)	UJ	(<0.074)	UJ	0.5	5.6
Naphthalene	(mg/kg)	(<0.039)	UJ	(<0.039)	UJ	0.66	J	(<0.041)	UJ	(<0.038)	UJ	(<0.045)	UJ	12	500
Phenanthrene	(mg/kg)	0.1	J	(<0.052)	UJ	2.7	J	0.15	J	(<0.051)	UJ	(<0.06)	UJ	100	500
Phenol	(mg/kg)	(<0.043)	U	(<0.042)	U	(<0.21)	U	(<0.045)	U	(<0.042)	U	(<0.049)	U	0.33	500
Pyrene	(mg/kg)	0.14	J	(<0.074)	U	2.6		0.14	J	(<0.073)	U	(<0.087)	U	100	500

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID Lab ID Sample Type Sample Date	356030-SB-12-6-7 R1208700-014 Subsurface Soil 12/19/2012		356030-SB-13-4-5 R1208700-015 Subsurface Soil 12/19/2012		356030-SB-14-4-5 R1208700-016 Subsurface Soil 12/19/2012		356030-SB-15-2-3 R1208700-017 Subsurface Soil 12/19/2012		356030-SB-16-4-5 R1208700-018 Subsurface Soil 12/19/2012		356030-SB-17-5-6 R1208700-019 Subsurface Soil 12/19/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
2,4-Dimethylphenol	(mg/kg)	(<0.043)	U	(<0.041)	U	(<0.049)	U	(<0.049)	U	(<0.046)	U	(<0.043)	U	---	---
2-Methylnaphthalene	(mg/kg)	0.039	J	(<0.037)	UJ	0.05	J	(<0.044)	U	0.085	J	(<0.039)	U	---	---
3&4-Methylphenol	(mg/kg)	(<0.059)	U	(<0.056)	U	(<0.067)	U	(<0.066)	U	(<0.062)	U	(<0.059)	U	0.33	500
Acenaphthene	(mg/kg)	0.057	J	(<0.053)	UJ	(<0.063)	U	(<0.063)	U	(<0.059)	U	(<0.056)	U	20	500
Acenaphthylene	(mg/kg)	(<0.052)	UJ	(<0.049)	UJ	(<0.059)	U	(<0.059)	U	(<0.055)	U	(<0.052)	U	100	500
Anthracene	(mg/kg)	0.17	J	(<0.058)	UJ	(<0.069)	U	(<0.069)	U	0.087	J	(<0.061)	U	100	500
Benzo[a]anthracene	(mg/kg)	0.52	J	(<0.057)	UJ	0.076	J	0.094	J	0.16	J	(<0.06)	U	1	5.6
Benzo[a]pyrene	(mg/kg)	0.48		(<0.061)	U	0.077	J	0.094	J	0.14	J	(<0.065)	U	1	1
Benzo[b]fluoranthene	(mg/kg)	0.39	J	(<0.089)	U	(<0.11)	U	(<0.11)	U	(<0.099)	U	(<0.094)	U	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	0.32	J	(<0.069)	U	(<0.083)	U	0.088	J	0.11	J	(<0.073)	U	100	500
Benzo[k]fluoranthene	(mg/kg)	0.41		(<0.066)	U	0.085	J	0.088	J	0.14	J	(<0.07)	U	0.8	56
Benzyl Alcohol	(mg/kg)	0.089	J	0.088	J	0.1	J	0.09	J	0.1	J	0.11	J	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	(<0.054)	U	0.081	J	0.23	J	0.15	J	(<0.057)	U	0.16	J	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.06)	U	(<0.056)	U	(<0.067)	U	(<0.067)	U	(<0.063)	U	(<0.059)	U	---	---
Carbazole	(mg/kg)	(<0.054)	U	(<0.051)	U	(<0.061)	U	(<0.061)	U	(<0.057)	U	(<0.054)	U	---	---
Chrysene	(mg/kg)	0.51		(<0.051)	U	0.1	J	0.11	J	0.2	J	(<0.054)	U	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	UJ	(<0.099)	UJ	(<0.12)	U	(<0.12)	U	(<0.11)	U	(<0.11)	U	0.33	0.56
Dibenzofuran	(mg/kg)	0.049	J	(<0.04)	UJ	(<0.048)	U	(<0.048)	U	(<0.045)	U	(<0.043)	U	7	350
Diethyl Phthalate	(mg/kg)	(<0.051)	U	(<0.048)	U	(<0.057)	U	(<0.057)	U	(<0.053)	U	(<0.05)	U	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.11)	U	(<0.11)	U	(<0.13)	U	(<0.12)	U	0.15	J	(<0.11)	U	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.075)	U	(<0.07)	U	(<0.084)	U	(<0.084)	U	(<0.079)	U	(<0.075)	U	---	---
Fluoranthene	(mg/kg)	1.1		(<0.059)	U	0.18	J	0.19	J	0.35	J	(<0.062)	U	100	100
Fluorene	(mg/kg)	0.057	J	(<0.046)	UJ	(<0.055)	U	(<0.055)	U	(<0.052)	U	(<0.049)	U	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	0.25	J	(<0.061)	UJ	(<0.073)	U	0.081	J	0.097	J	(<0.064)	U	0.5	5.6
Naphthalene	(mg/kg)	0.08	J	(<0.037)	UJ	0.047	J	(<0.044)	U	0.059	J	(<0.039)	U	12	500
Phenanthrene	(mg/kg)	0.71	J	(<0.05)	UJ	0.12	J	0.12	J	0.23	J	(<0.052)	U	100	500
Phenol	(mg/kg)	(<0.043)	U	(<0.041)	U	(<0.049)	U	(<0.048)	U	(<0.045)	U	(<0.043)	U	0.33	500
Pyrene	(mg/kg)	1		(<0.071)	U	0.16	J	0.19	J	0.32	J	(<0.075)	U	100	500

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID Lab ID Sample Type Sample Date	356030-SB-18-5-6 R1208700-020 Subsurface Soil 12/19/2012		356030-SB-19-5-6 R1208700-021 Subsurface Soil 12/19/2012		356030-SB-20-3-4 R1208700-022 Subsurface Soil 12/19/2012		356030-SB-21-4-5 R1208700-023 Subsurface Soil 12/19/2012		356030-SB-22-5-6 R1208700-024 Subsurface Soil 12/19/2012		356030-SB-23-3-4 R1208700-027 Subsurface Soil 12/19/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
2,4-Dimethylphenol	(mg/kg)	(<0.042)	U	(<0.044)	U	(<0.045)	U	(<0.25)	U	(<0.043)	U	(<0.042)	U	---	---
2-Methylnaphthalene	(mg/kg)	(<0.038)	U	(<0.04)	U	(<0.041)	U	3.1		(<0.039)	U	0.045	J	---	---
3&4-Methylphenol	(mg/kg)	(<0.057)	U	(<0.059)	U	(<0.062)	U	(<0.34)	U	(<0.059)	U	(<0.057)	U	0.33	500
Acenaphthene	(mg/kg)	(<0.054)	U	(<0.056)	U	(<0.058)	U	0.45	J	(<0.056)	U	(<0.054)	U	20	500
Acenaphthylene	(mg/kg)	(<0.051)	U	(<0.053)	U	(<0.055)	U	(<0.3)	U	(<0.052)	U	(<0.05)	U	100	500
Anthracene	(mg/kg)	(<0.059)	U	(<0.061)	U	(<0.064)	U	0.56	J	(<0.061)	U	0.12	J	100	500
Benzo[a]anthracene	(mg/kg)	(<0.058)	U	(<0.061)	U	0.088	J	0.69	J	(<0.06)	U	0.18	J	1	5.6
Benzo[a]pyrene	(mg/kg)	(<0.063)	U	(<0.065)	U	0.088	J	0.54	J	(<0.065)	U	0.2	J	1	1
Benzo[b]fluoranthene	(mg/kg)	(<0.091)	U	(<0.095)	U	(<0.099)	U	(<0.54)	U	(<0.095)	U	0.14	J	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	(<0.071)	U	(<0.074)	U	(<0.077)	U	(<0.42)	U	(<0.074)	U	0.2	J	100	500
Benzo[k]fluoranthene	(mg/kg)	(<0.068)	U	(<0.07)	U	0.073	J	0.45	J	(<0.07)	U	0.18	J	0.8	56
Benzyl Alcohol	(mg/kg)	0.12	J	0.13	J	0.13	J	(<0.45)	U	0.11	J	0.092	J	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	0.13	J	0.11	J	(<0.056)	U	35		0.23	J	0.15	J	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.058)	U	(<0.06)	U	(<0.062)	U	0.86	J	(<0.06)	U	(<0.057)	U	---	---
Carbazole	(mg/kg)	(<0.052)	U	(<0.054)	U	(<0.057)	U	(<0.31)	U	(<0.054)	U	(<0.052)	U	---	---
Chrysene	(mg/kg)	(<0.053)	U	0.065	J	0.1	J	0.82	J	(<0.055)	U	0.21	J	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	U	(<0.11)	U	(<0.11)	U	(<0.6)	U	(<0.11)	U	(<0.11)	U	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.042)	U	(<0.043)	U	(<0.045)	U	0.3	J	(<0.043)	U	0.044	J	7	350
Diethyl Phthalate	(mg/kg)	0.083	J	(<0.051)	U	(<0.053)	U	(<0.29)	U	(<0.051)	U	(<0.049)	U	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.11)	U	(<0.11)	U	(<0.12)	U	(<0.61)	U	(<0.11)	U	(<0.11)	U	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.073)	U	(<0.075)	U	(<0.078)	U	(<0.43)	U	(<0.075)	U	(<0.072)	U	---	---
Fluoranthene	(mg/kg)	(<0.06)	U	0.1	J	0.21	J	1.8	J	(<0.063)	U	0.41		100	100
Fluorene	(mg/kg)	(<0.048)	U	(<0.049)	U	(<0.051)	U	0.7	J	(<0.049)	U	0.055	J	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	(<0.063)	U	(<0.065)	U	(<0.067)	U	(<0.37)	U	(<0.065)	U	0.16	J	0.5	5.6
Naphthalene	(mg/kg)	(<0.038)	U	(<0.04)	U	(<0.041)	U	2	J	(<0.039)	U	0.094	J	12	500
Phenanthrene	(mg/kg)	(<0.051)	U	0.073	J	0.19	J	2.4		(<0.053)	U	0.39		100	500
Phenol	(mg/kg)	(<0.042)	U	(<0.043)	U	(<0.045)	U	(<0.25)	U	(<0.043)	U	(<0.041)	U	0.33	500
Pyrene	(mg/kg)	(<0.073)	U	0.11	J	0.2	J	1.7	J	(<0.076)	U	0.31	J	100	500

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID Lab ID Sample Type Sample Date	356030-SB-24-3-4 R1208700-028 Subsurface Soil 12/19/2012		356030-SB-25-4-5 R1208700-029 Subsurface Soil 12/20/2012		356030-SB-26-2.5-3.5 R1208700-030 Subsurface Soil 12/20/2012		356030-SB-27-3-4 R1208700-031 Subsurface Soil 12/20/2012		356030-SB-28-2.5-3.5 R1208700-032 Subsurface Soil 12/20/2012		356030-SB-29-5-6 R1208700-034 Subsurface Soil 12/20/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
2,4-Dimethylphenol	(mg/kg)	(<0.042)	U	(<0.043)	U	(<0.13)	U	(<0.043)	U	(<0.041)	U	(<0.043)	U	---	---
2-Methylnaphthalene	(mg/kg)	(<0.038)	U	(<0.039)	U	0.52	J	(<0.039)	U	(<0.037)	U	(<0.039)	U	---	---
3&4-Methylphenol	(mg/kg)	(<0.058)	U	(<0.058)	U	(<0.17)	U	(<0.059)	U	(<0.056)	U	(<0.059)	U	0.33	500
Acenaphthene	(mg/kg)	(<0.054)	U	(<0.055)	U	(<0.16)	U	(<0.055)	U	(<0.053)	U	(<0.055)	U	20	500
Acenaphthylene	(mg/kg)	(<0.051)	U	(<0.051)	U	(<0.15)	U	(<0.052)	U	(<0.05)	U	(<0.052)	U	100	500
Anthracene	(mg/kg)	(<0.06)	U	(<0.06)	U	0.24	J	(<0.061)	U	0.096	J	(<0.061)	U	100	500
Benzo[a]anthracene	(mg/kg)	0.16	J	(<0.059)	U	**1.5**		(<0.06)	U	0.37		(<0.06)	U	1	5.6
Benzo[a]pyrene	(mg/kg)	0.15	J	(<0.064)	U	**1.3**		(<0.064)	U	0.33	J	(<0.064)	U	1	1
Benzo[b]fluoranthene	(mg/kg)	0.13	J	(<0.093)	U	**1.3**		(<0.093)	U	0.25	J	(<0.094)	U	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	0.13	J	(<0.072)	U	0.86	J	(<0.073)	U	0.23	J	(<0.073)	U	100	500
Benzo[k]fluoranthene	(mg/kg)	0.15	J	(<0.069)	U	**1.1**	**J**	(<0.069)	U	0.23	J	(<0.069)	U	0.8	56
Benzyl Alcohol	(mg/kg)	0.12	J	0.12	J	(<0.23)	U	0.12	J	0.17	J	0.099	J	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	(<0.052)	U	(<0.053)	U	0.58	J	0.083	J	0.25	J	0.059	J	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.058)	U	(<0.059)	U	(<0.17)	U	(<0.059)	U	(<0.057)	U	(<0.059)	U	---	---
Carbazole	(mg/kg)	(<0.053)	U	(<0.053)	U	(<0.16)	U	(<0.054)	U	(<0.051)	U	(<0.054)	U	---	---
Chrysene	(mg/kg)	0.2	J	(<0.054)	U	**1.6**		(<0.054)	U	0.41		(<0.054)	U	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	U	(<0.11)	U	(<0.3)	U	(<0.11)	U	(<0.1)	U	(<0.11)	U	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.042)	U	(<0.042)	U	(<0.13)	U	(<0.042)	U	(<0.041)	U	(<0.043)	U	7	350
Diethyl Phthalate	(mg/kg)	(<0.049)	U	(<0.05)	U	(<0.15)	U	(<0.05)	U	(<0.048)	U	(<0.05)	U	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.11)	U	(<0.11)	U	(<0.31)	U	(<0.11)	U	(<0.11)	U	(<0.11)	U	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.073)	U	(<0.073)	U	(<0.22)	U	(<0.074)	U	(<0.071)	U	(<0.074)	U	---	---
Fluoranthene	(mg/kg)	0.43		(<0.061)	U	3.2		(<0.062)	U	0.9	J	(<0.062)	U	100	100
Fluorene	(mg/kg)	(<0.048)	U	(<0.048)	U	(<0.14)	U	(<0.049)	U	(<0.047)	U	(<0.049)	U	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	0.11	J	(<0.063)	U	**0.77**	**J**	(<0.064)	U	0.2	J	(<0.064)	U	0.5	5.6
Naphthalene	(mg/kg)	(<0.038)	U	(<0.039)	U	0.44	J	(<0.039)	U	(<0.037)	U	(<0.039)	U	12	500
Phenanthrene	(mg/kg)	0.34	J	(<0.052)	U	1.2		(<0.052)	U	0.34	J	(<0.052)	U	100	500
Phenol	(mg/kg)	(<0.042)	U	(<0.042)	U	(<0.13)	U	(<0.043)	U	(<0.041)	U	(<0.043)	U	0.33	500
Pyrene	(mg/kg)	0.34	J	(<0.074)	U	2.0		(<0.075)	U	0.7	J	(<0.075)	U	100	500

NOTE: Concentration values in **bold** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID Lab ID Sample Type Sample Date	356030-SB-30-5-6 R1208700-035 Subsurface Soil 12/20/2012		356030-SB-31-5-6 R1208700-036 Subsurface Soil 12/20/2012		356030-SB-32-4-5 R1208700-037 Subsurface Soil 12/20/2012		356030-SB-33-4-5 R1208700-038 Subsurface Soil 12/20/2012		356030-SB-34-2-3 R1208700-039 Subsurface Soil 12/20/2012		356030-SB-35-7-8 R1208700-040 Subsurface Soil 12/20/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
2,4-Dimethylphenol	(mg/kg)	(<0.042)	U	(<0.058)	U	(<0.043)	U	(<0.042)	R	(<0.45)	UJ	(<0.042)	U	---	---
2-Methylnaphthalene	(mg/kg)	(<0.038)	U	0.054	J	(<0.039)	UJ	(<0.038)	UJ	2.2	J	(<0.038)	UJ	---	---
3&4-Methylphenol	(mg/kg)	(<0.058)	U	**0.41**	**J**	(<0.059)	UJ	(<0.057)	R	(<0.62)	UJ	(<0.057)	UJ	0.33	500
Acenaphthene	(mg/kg)	(<0.055)	U	(<0.075)	U	(<0.056)	UJ	(<0.054)	UJ	2.2	J	(<0.054)	UJ	20	500
Acenaphthylene	(mg/kg)	(<0.051)	U	(<0.07)	U	(<0.052)	UJ	(<0.05)	UJ	1.6	J	(<0.051)	UJ	100	500
Anthracene	(mg/kg)	(<0.06)	U	(<0.082)	U	(<0.061)	UJ	(<0.059)	UJ	10	J	0.07	J	100	500
Benzo[a]anthracene	(mg/kg)	(<0.059)	U	0.17	J	(<0.06)	UJ	(<0.058)	UJ	**19**	**J**	0.18	J	1	5.6
Benzo[a]pyrene	(mg/kg)	(<0.064)	U	0.18	J	(<0.065)	UJ	(<0.063)	UJ	**17**	**J**	0.2	J	1	1
Benzo[b]fluoranthene	(mg/kg)	(<0.092)	U	0.14	J	(<0.094)	UJ	(<0.091)	UJ	**15**	**J**	0.2	J	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	(<0.072)	U	0.14	J	(<0.074)	UJ	(<0.071)	UJ	12	J	0.15	J	100	500
Benzo[k]fluoranthene	(mg/kg)	(<0.068)	U	0.13	J	(<0.07)	UJ	(<0.067)	UJ	**12**	**J**	0.18	J	0.8	56
Benzyl Alcohol	(mg/kg)	0.12	J	0.14	J	0.12	J	0.098	J	(<0.82)	UJ	0.098	J	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	0.18	J	0.12	J	0.064	J	0.24	J	(<0.56)	UJ	0.31	J	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.058)	U	(<0.08)	U	(<0.06)	UJ	0.08	J	(<0.62)	UJ	(<0.058)	UJ	---	---
Carbazole	(mg/kg)	(<0.053)	U	(<0.072)	U	(<0.054)	UJ	(<0.052)	UJ	3.7	J	(<0.052)	UJ	---	---
Chrysene	(mg/kg)	(<0.053)	U	0.19	J	(<0.055)	UJ	(<0.053)	UJ	18	J	0.23	J	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	U	(<0.14)	U	(<0.11)	UJ	(<0.11)	UJ	**2.9**	**J**	(<0.11)	UJ	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.042)	U	(<0.057)	U	(<0.043)	UJ	(<0.041)	UJ	4.2	J	(<0.042)	UJ	7	350
Diethyl Phthalate	(mg/kg)	(<0.05)	U	(<0.068)	U	(<0.051)	UJ	(<0.049)	UJ	(<0.53)	UJ	(<0.049)	UJ	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.11)	U	(<0.15)	U	(<0.11)	UJ	(<0.11)	UJ	(<1.2)	UJ	(<0.11)	UJ	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.073)	U	(<0.1)	U	(<0.075)	U	(<0.072)	U	(<0.78)	UJ	(<0.072)	U	---	---
Fluoranthene	(mg/kg)	(<0.061)	U	0.37	J	(<0.062)	UJ	(<0.06)	UJ	48	J	0.45	J	100	100
Fluorene	(mg/kg)	(<0.048)	U	(<0.066)	U	(<0.049)	UJ	(<0.047)	UJ	3.6	J	(<0.048)	UJ	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	(<0.063)	U	0.12	J	(<0.064)	UJ	(<0.062)	UJ	**9.6**	**J**	0.13	J	0.5	5.6
Naphthalene	(mg/kg)	(<0.038)	U	(<0.052)	U	(<0.039)	UJ	(<0.038)	UJ	6.5	J	0.041	J	12	500
Phenanthrene	(mg/kg)	(<0.051)	U	0.22	J	(<0.052)	UJ	(<0.051)	UJ	49	J	0.31	J	100	500
Phenol	(mg/kg)	(<0.042)	U	(<0.058)	U	(<0.043)	UJ	(<0.042)	R	(<0.45)	UJ	(<0.042)	UJ	0.33	500
Pyrene	(mg/kg)	(<0.074)	U	0.26	J	(<0.075)	UJ	(<0.073)	UJ	40	J	0.32	J	100	500

NOTE: R = Rejected value.
Concentration values in **bold and highlighted** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use (Commercial).

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID	356030-SB-36-4-5		356030-SB-37-4-5		356030-SB-38-2-3		356030-SB-39-1-3		356030-SB-40-6-7		356030-SB-41-6-7		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-041		R1208700-042		R1208700-043		R1208700-044		R1208700-045		R1208700-046			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil (Fill)		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
2,4-Dimethylphenol	(mg/kg)	(<0.48)	U	0.048	J	(<0.043)	R	(<0.99)	UJ	(<0.044)	U	(<0.043)	UJ	---	---
2-Methylnaphthalene	(mg/kg)	(<0.43)	UJ	0.72	J	0.35	J	100	J	(<0.04)	UJ	0.095	J	---	---
3&4-Methylphenol	(mg/kg)	(<0.65)	UJ	0.085	J	(<0.059)	R	**2.8**	**J**	(<0.061)	UJ	(<0.059)	UJ	0.33	500
Acenaphthene	(mg/kg)	(<0.62)	UJ	1.3	J	0.063	J	(<1.3)	UJ	(<0.057)	UJ	(<0.056)	UJ	20	500
Acenaphthylene	(mg/kg)	(<0.57)	UJ	0.34	J	(<0.052)	UJ	(<1.2)	UJ	(<0.054)	UJ	(<0.052)	UJ	100	500
Anthracene	(mg/kg)	(<0.67)	UJ	2.0	J	0.085	J	(<1.4)	UJ	0.16	J	0.13	J	100	500
Benzo[a]anthracene	(mg/kg)	(<0.66)	UJ	**3.2**	**J**	0.22	J	(<1.4)	UJ	0.5	J	0.32	J	1	5.6
Benzo[a]pyrene	(mg/kg)	(<0.72)	UJ	**3.0**	**J**	0.22	J	(<1.5)	UJ	0.55	J	0.29	J	1	1
Benzo[b]fluoranthene	(mg/kg)	(<1.1)	UJ	**2.4**	**J**	0.2	J	(<2.2)	UJ	0.38	J	0.22	J	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	(<0.81)	UJ	1.7	J	0.15	J	(<1.7)	UJ	0.33	J	0.18	J	100	500
Benzo[k]fluoranthene	(mg/kg)	(<0.77)	UJ	**2.3**	**J**	0.16	J	(<1.6)	UJ	0.48	J	0.22	J	0.8	56
Benzyl Alcohol	(mg/kg)	(<0.86)	UJ	0.12	J	0.086	J	(<1.8)	UJ	(<0.08)	UJ	(<0.078)	UJ	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	(<0.59)	UJ	0.095	J	1.9	J	120	J	0.13	J	0.073	J	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.66)	UJ	(<0.056)	UJ	0.25	J	5.6	J	(<0.061)	UJ	(<0.06)	UJ	---	---
Carbazole	(mg/kg)	(<0.6)	UJ	0.95	J	(<0.054)	UJ	(<1.3)	UJ	(<0.056)	UJ	0.073	J	---	---
Chrysene	(mg/kg)	(<0.6)	UJ	**3.3**	**J**	0.24	J	(<1.3)	UJ	0.49	J	0.33	J	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<1.2)	UJ	**0.52**	**J**	(<0.11)	UJ	(<2.5)	UJ	(<0.11)	UJ	(<0.11)	UJ	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.47)	UJ	1.1	J	(<0.043)	UJ	(<0.98)	UJ	(<0.044)	UJ	(<0.043)	UJ	7	350
Diethyl Phthalate	(mg/kg)	(<0.56)	UJ	(<0.048)	UJ	(<0.05)	UJ	(<1.2)	UJ	(<0.052)	UJ	(<0.051)	UJ	---	---
Di-n-butyl Phthalate	(mg/kg)	(<1.2)	UJ	(<0.1)	UJ	(<0.11)	UJ	(<2.5)	UJ	(<0.11)	UJ	0.11	J	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.82)	U	(<0.07)	U	(<0.074)	U	9.3	J	(<0.077)	U	(<0.075)	UJ	---	---
Fluoranthene	(mg/kg)	(<0.69)	U	8.4	J	0.57	J	1.6	J	1.0	J	0.58	J	100	100
Fluorene	(mg/kg)	(<0.54)	UJ	1.3	J	0.064	J	1.8	J	0.072	J	0.058	J	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	(<0.71)	UJ	**1.4**	**J**	0.12	J	(<1.5)	UJ	0.28	J	0.15	J	0.5	5.6
Naphthalene	(mg/kg)	(<0.43)	UJ	1.8	J	0.12	J	89	J	0.087	J	0.21	J	12	500
Phenanthrene	(mg/kg)	(<0.58)	UJ	9.9	J	0.49	J	4.3	J	0.57	J	0.51	J	100	500
Phenol	(mg/kg)	(<0.47)	UJ	(<0.04)	UJ	(<0.043)	R	**1.2**	**J**	(<0.044)	UJ	(<0.043)	UJ	0.33	500
Pyrene	(mg/kg)	(<0.83)	UJ	7.7	J	0.44	J	2.2	J	0.84	J	0.55	J	100	500

TABLE 3-3 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8270C	Sample ID	356030-SB-42-5-6		356030-SB-43-5-6		356030-SB-DUP 1[a]		356030-SB-DUP 2[a]		356030-SB-DUP 3[a]		356030-RB1		356030-RB2		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-048		R1208700-049		R1208700-008		R1208700-033		R1208700-047		R1208700-026		R1208700-050			
	Sample Type	Subsurface Soil		Subsurface Soil		QA/QC		QA/QC		QA/QC		QA/QC		QA/QC			
	Sample Date	12/20/2012		12/20/2012		12/19/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
2,4-Dimethylphenol	(mg/kg)	(<0.045)	U	(<0.041)	U	(<0.042)	U	(<0.041)	U	(<0.04)	U	(<1.4)	U	(<1.5)	U	---	---
2-Methylnaphthalene	(mg/kg)	(<0.041)	UJ	(<0.037)	UJ	(<0.038)	UJ	(<0.037)	U	(<0.037)	UJ	(<1)	U	(<1.1)	U	---	---
3&4-Methylphenol	(mg/kg)	(<0.062)	UJ	(<0.055)	UJ	(<0.057)	U	(<0.056)	U	(<0.055)	UJ	(<1.3)	U	(<1.4)	U	0.33	500
Acenaphthene	(mg/kg)	(<0.058)	UJ	(<0.052)	UJ	(<0.054)	UJ	(<0.053)	U	(<0.052)	UJ	(<1)	U	(<1.1)	U	20	500
Acenaphthylene	(mg/kg)	(<0.055)	UJ	(<0.049)	UJ	(<0.05)	UJ	(<0.049)	U	(<0.049)	UJ	(<1)	U	(<1.1)	U	100	500
Anthracene	(mg/kg)	(<0.064)	UJ	(<0.057)	UJ	(<0.059)	UJ	(<0.058)	U	(<0.057)	UJ	(<1)	U	(<1.1)	U	100	500
Benzo[a]anthracene	(mg/kg)	(<0.063)	UJ	(<0.056)	UJ	(<0.058)	UJ	0.071	J	(<0.056)	UJ	(<1.1)	U	(<1.1)	U	1	5.6
Benzo[a]pyrene	(mg/kg)	(<0.068)	UJ	(<0.061)	UJ	(<0.063)	U	0.078	J	(<0.061)	UJ	(<1)	U	(<1.1)	U	1	1
Benzo[b]fluoranthene	(mg/kg)	(<0.099)	UJ	(<0.088)	UJ	(<0.091)	U	(<0.089)	U	(<0.088)	UJ	(<1.6)	U	(<1.7)	U	1	5.6
Benzo[g,h,i]perylene	(mg/kg)	(<0.077)	UJ	(<0.069)	UJ	(<0.071)	U	0.086	J	(<0.069)	UJ	(<1.2)	U	(<1.2)	U	100	500
Benzo[k]fluoranthene	(mg/kg)	(<0.073)	UJ	(<0.065)	UJ	(<0.067)	U	(<0.066)	U	(<0.065)	UJ	(<1.2)	U	(<1.2)	U	0.8	56
Benzyl Alcohol	(mg/kg)	(<0.081)	UJ	(<0.073)	UJ	0.084	J	0.14	J	(<0.073)	UJ	(<1.1)	U	(<1.1)	U	---	---
bis(2-Ethylhexyl)phthalate	(mg/kg)	(<0.056)	UJ	(<0.051)	UJ	0.053	J	0.48		(<0.05)	UJ	(<1.2)	U	(<1.3)	U	---	---
Butyl Benzyl Phthalate	(mg/kg)	(<0.062)	UJ	(<0.056)	UJ	(<0.057)	U	(<0.057)	U	(<0.056)	UJ	(<1.1)	U	(<1.2)	U	---	---
Carbazole	(mg/kg)	(<0.057)	UJ	(<0.051)	UJ	(<0.052)	U	(<0.051)	U	(<0.051)	UJ	(<1)	U	(<1.1)	U	---	---
Chrysene	(mg/kg)	(<0.057)	UJ	(<0.051)	UJ	(<0.053)	U	0.087	J	(<0.051)	UJ	(<1)	U	(<1.1)	U	1	56
Dibenzo[a,h]anthracene	(mg/kg)	(<0.11)	UJ	(<0.098)	UJ	(<0.11)	UJ	(<0.099)	U	(<0.098)	UJ	(<1)	U	(<1.1)	U	0.33	0.56
Dibenzofuran	(mg/kg)	(<0.045)	UJ	(<0.04)	UJ	(<0.041)	UJ	(<0.041)	U	(<0.04)	UJ	(<1.3)	U	(<1.4)	U	7	350
Diethyl Phthalate	(mg/kg)	(<0.053)	UJ	(<0.048)	UJ	(<0.049)	U	(<0.048)	U	(<0.047)	UJ	(<1)	U	(<1.1)	U	---	---
Di-n-butyl Phthalate	(mg/kg)	(<0.12)	UJ	(<0.1)	UJ	(<0.11)	U	(<0.11)	U	(<0.1)	UJ	(<1)	U	(<1.1)	U	---	---
Di-n-octyl Phthalate	(mg/kg)	(<0.078)	U	(<0.07)	U	(<0.072)	U	(<0.071)	U	(<0.07)	U	(<1)	U	(<1.1)	U	---	---
Fluoranthene	(mg/kg)	(<0.065)	UJ	(<0.058)	UJ	0.065	J	0.18	J	(<0.058)	UJ	(<1)	U	(<1.1)	U	100	100
Fluorene	(mg/kg)	(<0.051)	UJ	(<0.046)	UJ	(<0.047)	UJ	(<0.047)	U	(<0.046)	UJ	(<1)	U	(<1.1)	U	30	500
Indeno[1,2,3-cd]pyrene	(mg/kg)	(<0.067)	UJ	(<0.06)	UJ	(<0.062)	UJ	0.067	J	(<0.06)	UJ	(<1)	U	(<1.1)	U	0.5	5.6
Naphthalene	(mg/kg)	(<0.041)	UJ	(<0.037)	UJ	(<0.038)	UJ	(<0.037)	U	(<0.037)	UJ	(<1)	U	(<1.1)	U	12	500
Phenanthrene	(mg/kg)	(<0.055)	UJ	(<0.049)	UJ	0.1	J	0.15	J	(<0.049)	UJ	(<1)	U	(<1.1)	U	100	500
Phenol	(mg/kg)	(<0.045)	UJ	(<0.04)	UJ	(<0.041)	U	(<0.041)	U	(<0.04)	UJ	(<1)	U	(<1.1)	U	0.33	500
Pyrene	(mg/kg)	(<0.079)	UJ	(<0.071)	UJ	0.1	J	0.14	J	(<0.071)	UJ	(<1.1)	U	(<1.1)	U	100	500

(a) 356030-SB-DUP 1 collected at 356230-SB-07-4-6; 356030-SB-DUP 2 collected at 356230-SB-28-2.5-3.5 ; and 356030-SB-DUP 3 collected at 356030-SB-41-6-7.

(b) Rinsate blanks are aqueous samples, units are in µg/L.

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID Lab ID Sample Type Sample Date	356030-SB-01-4-6 R1208700-001 Subsurface Soil 12/19/2012		356030-SB-02-5-6 R1208700-002 Subsurface Soil 12/19/2012		356030-SB-03-5-6 R1208700-003 Subsurface Soil 12/19/2012		356030-SB-04-5-6 R1208700-004 Subsurface Soil 12/19/2012		356030-SB-05-5-6 R1208700-005 Subsurface Soil 12/19/2012		356030-SB-06-5-6 R1208700-006 Subsurface Soil 12/19/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
Aluminum	(mg/kg)	9,000		9,670		8,690		10,500		8,070		7,500		---	---
Antimony	(mg/kg)	(<0.131)	U	(<0.122)	U	(<0.12)	U	(<0.135)	U	(<0.124)	U	(<0.127)	U	---	---
Arsenic	(mg/kg)	4.2	J	5.1	J	4	J	4.7	J	4.7	J	3.1	J	13	16
Barium	(mg/kg)	58.2		59.5		47.1		62.9		54		58.5		350	400
Beryllium	(mg/kg)	0.432	J	0.516	J	0.405	J	0.424	J	0.417	J	0.375	J	7.2	590
Cadmium	(mg/kg)	0.2	J	0.152	J	0.119	J	0.073	J	0.165	J	0.625		2.5	9.3
Calcium	(mg/kg)	1,820	J	11,800	J	1,970	J	2,540	J	3,020	J	5,220	J	---	---
Chromium	(mg/kg)	20.3		13.7		11.7		11.9		11.2		12.6		30	1,500
Cobalt	(mg/kg)	7.4		9.7		7.1		7.5		7.5		7.2		---	---
Copper	(mg/kg)	20		20		16		19		19		**81**		50	270
Iron	(mg/kg)	21,900		23,600		19,600		21,000		19,700		19,000		---	---
Lead	(mg/kg)	9.2		17		8.2		8.7		14.8		**192**		63	1,000
Magnesium	(mg/kg)	3,490		5,190		3,180		3,240		2,910		3,140		---	---
Manganese	(mg/kg)	621		600		634		512		506		698		1,600	10,000
Mercury	(mg/kg)	0.021	J	0.02	J	0.017	J	0.038		0.036		**0.379**		0.18	2.8
Nickel	(mg/kg)	21		22.9		19.6		16.4		19.8		21		30	310
Potassium	(mg/kg)	966		1840		951		948		1010		1010		---	---
Selenium	(mg/kg)	(<0.323)	U	0.587	J	(<0.295)	U	(<0.333)	U	(<0.306)	U	(<0.314)	U	3.9	1,500
Silver	(mg/kg)	0.294	J	0.124	J	0.186	J	(<0.105)	U	0.108	J	0.125	J	2	1,500
Sodium	(mg/kg)	(<4.5)	U	(<4.2)	U	(<4.1)	U	(<4.7)	U	(<4.3)	U	(<4.4)	U	---	---
Thallium	(mg/kg)	(<0.246)	U	(<0.229)	U	(<0.225)	U	(<0.253)	U	(<0.233)	U	(<0.239)	U	---	---
Vanadium	(mg/kg)	13		14.7		12.8		16.2		12.7		11.1		---	---
Zinc	(mg/kg)	61		59		51		62		58		**133**		109	10,000

NOTE:
EPA = U.S. Enivronmental Protection Agency
ID = Identification
NYCRR = New York Code of Rules and Regulation
mg/kg = milligrams per kilogram
--- = No standard.
U = Non-detect, detection below the method detection limit.
J = The associated numerical value is and estimated quantity.
Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.
Concentration values in **bold** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID	356030-SB-07-4-6		356030-SB-08-5-6		356030-SB-09-2-3		356030-SB-09-6-8		356030-SB-10-5-6		356030-SB-11-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-007		R1208700-009		R1208700-010		R1208700-011		R1208700-012		R1208700-013			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
Aluminum	(mg/kg)	8,820		1,650		6,140		7,530		9,170		1,170		---	---
Antimony	(mg/kg)	(<0.132)	U	(<0.13)	U	33.3		10.3		(<0.122)	U	(<0.15)	U	---	---
Arsenic	(mg/kg)	5	J	0.813	J	**21.5**	**J**	4.8	J	4.8	J	1.6	J	13	16
Barium	(mg/kg)	60.6		12.6		**417**		75.6		71.5		8.5		350	400
Beryllium	(mg/kg)	0.451	J	0.097	J	0.706	J	0.409	J	0.481	J	0.092	J	7.2	590
Cadmium	(mg/kg)	0.138	J	(<0.016)	U	**25.1**		0.897		0.141	J	(<0.018)	U	2.5	9.3
Calcium	(mg/kg)	2,160	J	444	J	32,500	J	7,970	J	5,410	J	242	J	---	---
Chromium	(mg/kg)	11.5		2		**41.8**		15.1		11.9		3.3		30	1,500
Cobalt	(mg/kg)	8		1.3	J	11.2		7.4		8.9		1.4	J	---	---
Copper	(mg/kg)	17.8		3		**624**		47.1		18		5.9		50	270
Iron	(mg/kg)	19,700		3,310		86,900		21,900		20,600		6,970		---	---
Lead	(mg/kg)	15		2	J	**2,500**		**178**		26		7	J	63	1,000
Magnesium	(mg/kg)	3,260		559		3,960		3,340		3,610		466		---	---
Manganese	(mg/kg)	476		88.7		656		589		485		42.5		1,600	10,000
Mercury	(mg/kg)	0.035	J	0.031	J	0.003	J	0.041		0.076		0.029	J	0.18	2.8
Nickel	(mg/kg)	19.8		3.1	J	**53.8**		21.4		19		3	J	30	310
Potassium	(mg/kg)	1,170		293		985		1,030		1,170		207	J	---	---
Selenium	(mg/kg)	(<0.325)	U	(<0.322)	U	(<1.5)	U	(<0.336)	U	(<0.301)	U	0.47	J	3.9	1,500
Silver	(mg/kg)	(<0.102)	U	(<0.101)	U	(<0.096)	U	0.154	J	(<0.095)	U	(<0.116)	U	2	1,500
Sodium	(mg/kg)	(<4.6)	U	(<4.5)	U	228		(<4.7)	U	(<4.2)	U	(<5.2)	U	---	---
Thallium	(mg/kg)	(<0.247)	U	(<0.245)	U	(<0.232)	U	(<0.256)	U	(<0.229)	U	(<0.281)	U	---	---
Vanadium	(mg/kg)	13.3		2.5	J	11.5		11.6		14.4		4	J	---	---
Zinc	(mg/kg)	95		12		**3,030**		**176**		59		10		109	10,000

NOTE: Concentration values in **bold and highlighted** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use (Commercial).

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID Lab ID Sample Type Sample Date	356030-SB-12-6-7 R1208700-014 Subsurface Soil 12/19/2012		356030-SB-13-4-5 R1208700-015 Subsurface Soil 12/19/2012		356030-SB-14-4-5 R1208700-016 Subsurface Soil 12/19/2012		356030-SB-15-2-3 R1208700-017 Subsurface Soil 12/19/2012		356030-SB-16-4-5 R1208700-018 Subsurface Soil 12/19/2012		356030-SB-17-5-6 R1208700-019 Subsurface Soil 12/19/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
Aluminum	(mg/kg)	7,000		8,970		1,530		7,820		6,400		8,470		---	---
Antimony	(mg/kg)	(<0.128)	U	(<0.123)	U	(<0.144)	U	(<0.148)	U	(<0.136)	U	(<0.132)	U	---	---
Arsenic	(mg/kg)	7.9	J	5.5	J	1.9	J	**14.9**	**J**	6.1	J	4.7	J	13	16
Barium	(mg/kg)	59.5		61.2		16.8		73.7		92.9		47.4		350	400
Beryllium	(mg/kg)	0.366	J	0.452	J	0.108	J	0.402	J	0.382	J	0.446	J	7.2	590
Cadmium	(mg/kg)	0.185	J	0.302	J	0.192	J	0.154	J	1.4		0.151	J	2.5	9.3
Calcium	(mg/kg)	15,900	J	11,500	J	2,090	J	2,180	J	5,230	J	1,710	J	---	---
Chromium	(mg/kg)	10.5		12		3.4		11		10.8		10.5		30	1,500
Cobalt	(mg/kg)	7.9		9.1		2.5	J	7.5		6.1		8.3		---	---
Copper	(mg/kg)	35.9		18.5		8.5		32.1		20.5		17.6		50	270
Iron	(mg/kg)	19,900		23,600		8,440		17,300		18,200		18,500		---	---
Lead	(mg/kg)	**142**		15		19		38		**170**		16		63	1,000
Magnesium	(mg/kg)	4,060		3,800		658		3,470		2,500		2,870		---	---
Manganese	(mg/kg)	624		671		119		735		197		254		1,600	10,000
Mercury	(mg/kg)	0.15		0.074		(<0.002)	U	1.2		(<0.002)	U	0.021	J	0.18	2.8
Nickel	(mg/kg)	17.7		23.3		4.1	J	17.3		14.2		17.8		30	310
Potassium	(mg/kg)	1060		1040		247	J	786		883		1120		---	---
Selenium	(mg/kg)	0.447	J	(<0.303)	U	0.577	J	(<0.365)	U	0.452	J	(<0.327)	U	3.9	1,500
Silver	(mg/kg)	(<0.1)	U	(<0.095)	U	(<0.112)	U	(<0.115)	U	(<0.105)	U	(<0.103)	U	2	1,500
Sodium	(mg/kg)	(<4.4)	U	(<4.2)	U	(<5.0)	U	(<5.1)	U	(<4.7)	U	(<4.6)	U	---	---
Thallium	(mg/kg)	(<0.241)	U	(<0.23)	U	(<0.27)	U	(<0.277)	U	(<0.255)	U	(<0.248)	U	---	---
Vanadium	(mg/kg)	12.9		13		3.6	J	13.4		11.1		14.3		---	---
Zinc	(mg/kg)	105		80		**209**		61		**650**		107		109	10,000

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID	356030-SB-18-5-6		356030-SB-19-5-6		356030-SB-20-3-4		356030-SB-21-4-5		356030-SB-22-5-6		356030-SB-23-3-4		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-020		R1208700-021		R1208700-022		R1208700-023		R1208700-024		R1208700-027			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
Aluminum	(mg/kg)	9,190		9,190		5,450		8,790		10,200		5,750		---	---
Antimony	(mg/kg)	(<0.129)	U	(<0.176)	U	0.419	J	3.9	J	(<0.179)	U	0.447	J	---	---
Arsenic	(mg/kg)	4.7	J	5.7		2.6		8.1		6.7		3.2		13	16
Barium	(mg/kg)	65.8		79.5	J	34.6	J	123	J	49.8	J	40.2	J	350	400
Beryllium	(mg/kg)	0.458	J	0.515	J	(<0.02)	U	0.48	J	0.503	J	(<0.018)	U	7.2	590
Cadmium	(mg/kg)	(<0.015)	U	0.186	J	(<0.014)	U	**4.0**		0.149	J	0.065	J	2.5	9.3
Calcium	(mg/kg)	8,530	J	5,790		2,260		18,500		33,200		2,540		---	---
Chromium	(mg/kg)	10.4		13.2		9.5		30		15.1		8.8		30	1,500
Cobalt	(mg/kg)	6.6		9	J	5.4	J	8.8	J	8.1	J	5.4	J	---	---
Copper	(mg/kg)	18		18		11		**104**		22		14		50	270
Iron	(mg/kg)	23,200		22,400		13,900		38,900		27,200		16,300		---	---
Lead	(mg/kg)	7		14		16		**507**		12		30		63	1,000
Magnesium	(mg/kg)	3,510		3,940		2,300		4,140		5,540		2,190		---	---
Manganese	(mg/kg)	403		404		181		674		633		161		1,600	10,000
Mercury	(mg/kg)	0.018	J	(<0.002)	U	(<0.002)	U	**2.4**	**J**	(<0.002)	U	0.075	J	0.18	2.8
Nickel	(mg/kg)	16		21.8	J	13.3	J	**35.3**	**J**	21.5	J	14.2	J	30	310
Potassium	(mg/kg)	1,160		1,040		707		1,060		1,110		668		---	---
Selenium	(mg/kg)	(<0.318)	U	0.42	J	0.539	J	(<0.264)	U	(<0.271)	U	0.351	J	3.9	1,500
Silver	(mg/kg)	(<0.1)	U	(<0.045)	U	(<0.049)	U	(<0.045)	U	(<0.046)	U	(<0.043)	U	2	1,500
Sodium	(mg/kg)	(<4.5)	U	(<2.2)	U	(<2.4)	U	(<2.2)	U	(<2.2)	U	38.5	J	---	---
Thallium	(mg/kg)	(<0.242)	U	(<0.18)	U	(<0.195)	U	(<1.8)	U	(<1.8)	U	(<0.172)	U	---	---
Vanadium	(mg/kg)	15.1		15.4		8		16.2		15.6		9.1		---	---
Zinc	(mg/kg)	55		66	J	47	J	**956**	**J**	81	J	76	J	109	10,000

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID	356030-SB-24-3-4		356030-SB-25-4-5		356030-SB-26-2.5-3.5		356030-SB-27-3-4		356030-SB-28-2.5-3.5		356030-SB-29-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-028		R1208700-029		R1208700-030		R1208700-031		R1208700-032		R1208700-034			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
Aluminum	(mg/kg)	5,980		8,290		7,890		9,080		7,910		8,370		---	---
Antimony	(mg/kg)	0.458	J	(<0.175)	U	0.533	J	0.358	J	0.894	J	0.293	J	---	---
Arsenic	(mg/kg)	10.8		4		5.6		4.8		3.8	J	4.3		13	16
Barium	(mg/kg)	80.5	J	51.1	J	60.2	J	64.6	J	70.4		57.7	J	350	400
Beryllium	(mg/kg)	(<0.018)	U	0.443	J	0.439	J	0.73		0.44	J	0.429	J	7.2	590
Cadmium	(mg/kg)	0.052	J	0.073	J	0.056	J	0.281	J	0.224	J	0.138	J	2.5	9.3
Calcium	(mg/kg)	8,980		2,970		26,300		1,690		3,560	J	9,340		---	---
Chromium	(mg/kg)	9.7		11.7		12.4		11.3		13		11.7		30	1,500
Cobalt	(mg/kg)	5.7	J	8.1	J	8.5	J	13.7	J	8.4	J	7.8	J	---	---
Copper	(mg/kg)	19		16		25		28		21	J	16		50	270
Iron	(mg/kg)	16,200		19,400		19,900		18,700		19,200		19,100		---	---
Lead	(mg/kg)	46		9		28		11		25	J	11		63	1,000
Magnesium	(mg/kg)	3,070		2,970		3,910		2,830		3,230	J	4,210		---	---
Manganese	(mg/kg)	282		521		371		345		323		480		1,600	10,000
Mercury	(mg/kg)	**0.215**	**J**	(<0.002)	U	0.049	J	(<0.002)	U	0.042	J	(<0.002)	U	0.18	2.8
Nickel	(mg/kg)	15	J	18.2	J	20.5	J	26	J	22.4	J	19	J	30	310
Potassium	(mg/kg)	896		910		1,100		865		863	J	928		---	---
Selenium	(mg/kg)	0.594	J	0.465	J	0.29	J	0.417	J	0.904	J	0.575	J	3.9	1,500
Silver	(mg/kg)	(<0.044)	U	(<0.045)	U	(<0.045)	U	(<0.044)	U	(<0.044)	U	(<0.046)	U	2	1,500
Sodium	(mg/kg)	114		49.5	J	112	J	62	J	81.5	J	58.5	J	---	---
Thallium	(mg/kg)	(<0.174)	U	(<1.8)	U	(<0.18)	U	(<0.177)	U	(<1.8)	U	(<1.9)	U	---	---
Vanadium	(mg/kg)	13.8		14.2		12.6		13.9		11.6		13.5		---	---
Zinc	(mg/kg)	54	J	51	J	**121**	**J**	87	J	**131**		57	J	109	10,000

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID	356030-SB-30-5-6		356030-SB-31-5-6		356030-SB-32-4-5		356030-SB-33-4-5		356030-SB-34-2-3		356030-SB-35-7-8		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-035		R1208700-036		R1208700-037		R1208700-038		R1208700-039		R1208700-040			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
Aluminum	(mg/kg)	8,340		3,150		6,200		5,590		4,310		6,560		---	---
Antimony	(mg/kg)	0.347	J	0.724	J	0.272	J	0.337	J	2.8	J	0.285	J	---	---
Arsenic	(mg/kg)	4.2		3.2	J	3	J	2.8		8.6	J	2.9	J	13	16
Barium	(mg/kg)	65.7	J	149		47.8		49.9		113		45.6		350	400
Beryllium	(mg/kg)	0.457	J	(<0.025)	U	(<0.019)	U	(<0.019)	U	(<0.02)	U	(<0.018)	U	7.2	590
Cadmium	(mg/kg)	0.121	J	0.23	J	0.064	J	(<0.014)	U	**3.0**		0.154	J	2.5	9.3
Calcium	(mg/kg)	4,100		10,000		2,720		7,860		2,080		5,700		---	---
Chromium	(mg/kg)	11.1		7.5		8.8		7.8		10.4		9.8		30	1,500
Cobalt	(mg/kg)	8	J	3.4	J	6.3	J	5.8	J	7.7	J	6.8	J	---	---
Copper	(mg/kg)	16		34	J	13	J	14		**86**	**J**	21	J	50	270
Iron	(mg/kg)	20,300		10,300		15,800		13,900		31,700		18,500		---	---
Lead	(mg/kg)	8		**210**	**J**	10	J	10		**182**	**J**	21	J	63	1,000
Magnesium	(mg/kg)	2,990		2,140	J	2,750	J	2,580		1,610	J	3,050	J	---	---
Manganese	(mg/kg)	473		407		165		212		226		903		1,600	10,000
Mercury	(mg/kg)	(<0.002)	U	**15.4**	**J**	0.04	J	(<0.002)	U	**1.1**	**J**	0.035	J	0.18	2.8
Nickel	(mg/kg)	19.2	J	10.3	J	17.4	J	14.7	J	26	J	16.3	J	30	310
Potassium	(mg/kg)	842		579	J	1,280	J	896		715	J	707	J	---	---
Selenium	(mg/kg)	0.734	J	1.5		0.76	J	0.458	J	1.3		0.699	J	3.9	1,500
Silver	(mg/kg)	(<0.044)	U	0.498	J	(<0.045)	U	(<0.045)	U	(<0.049)	U	(<0.044)	U	2	1,500
Sodium	(mg/kg)	37.5	J	242	J	115	J	68.2	J	58.5	J	45.5	J	---	---
Thallium	(mg/kg)	(<1.8)	U	(<0.24)	U	(<0.181)	U	(<0.182)	U	(<0.195)	U	(<1.8)	U	---	---
Vanadium	(mg/kg)	13.5		7.1	J	9.6		8.7		10.5		9.9		---	---
Zinc	(mg/kg)	57	J	**200**		86		48	J	**668**		62		109	10,000

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID	356030-SB-36-4-5		356030-SB-37-4-5		356030-SB-38-2-3		356030-SB-39-1-3		356030-SB-40-6-7		356030-SB-41-6-7		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-041		R1208700-042		R1208700-043		R1208700-044		R1208700-045		R1208700-046			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
Aluminum	(mg/kg)	4,380		7,720		7,990		7,490		5,950		7,380		---	---
Antimony	(mg/kg)	3	J	0.739	J	1.6	J	8.1		(<0.184)	U	(<0.18)	U	---	---
Arsenic	(mg/kg)	6.2		4.8		7	J	6.8	J	2.5	J	3.7	J	13	16
Barium	(mg/kg)	137		251		59.1		137		36.1		43.8		350	400
Beryllium	(mg/kg)	1.2		0.439	J	0.361	J	0.482	J	0.306	J	0.387	J	7.2	590
Cadmium	(mg/kg)	0.335	J	0.156	J	0.143	J	**5.2**		0.032	J	0.082	J	2.5	9.3
Calcium	(mg/kg)	10,700		3,620		69,200		49,600		2,940		2,870		---	---
Chromium	(mg/kg)	10.4		11.1		16.9		29.7		8.7		10.8		30	1,500
Cobalt	(mg/kg)	6.5	J	7.1	J	6.1	J	9.4	J	5.5	J	7.7	J	---	---
Copper	(mg/kg)	**73**		19		22	J	**158**	J	13	J	15	J	50	270
Iron	(mg/kg)	10,700		18,200		19,900		73,000		16,800		18,100		---	---
Lead	(mg/kg)	**343**		**347**		60	J	**925**	**J**	35	J	32	J	63	1,000
Magnesium	(mg/kg)	1,600		2,840		9,600	J	20,600	J	2,700	J	3,000	J	---	---
Manganese	(mg/kg)	361		436		308		586		204		243		1,600	10,000
Mercury	(mg/kg)	(<0.002)	U	(<0.002)	U	(<0.002)	U	0.439	J	(<0.002)	U	0.024	J	0.18	2.8
Nickel	(mg/kg)	14.5	J	18.9	J	16.3	J	80.2	J	14	J	19.8	J	30	310
Potassium	(mg/kg)	1,010		923		1,240	J	988	J	642	J	1,220	J	---	---
Selenium	(mg/kg)	0.884	J	0.311	J	0.27	J	(<0.254)	U	0.429	J	1.9		3.9	1,500
Silver	(mg/kg)	0.069	J	(<0.042)	U	0.18	J	0.644	J	(<0.047)	U	(<0.046)	U	2	1,500
Sodium	(mg/kg)	432		71.2	J	326	J	730	J	36.8	J	107	J	---	---
Thallium	(mg/kg)	(<0.203)	U	(<1.7)	U	(<0.178)	U	(<1.7)	U	(<0.189)	U	(<0.185)	U	---	---
Vanadium	(mg/kg)	20.1		13.1		14.4		11.4		8.7		11.9		---	---
Zinc	(mg/kg)	**195**	**J**	**168**	**J**	**142**		**1,270**		75		65		109	10,000

TABLE 3-4 TARGET ANALYTE LIST METALS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 6010B/7471A	Sample ID Lab ID Sample Type Sample Date	356030-SB-42-5-6 R1208700-048 Subsurface Soil 12/20/2012		356030-SB-43-5-6 R1208700-049 Subsurface Soil 12/20/2012		356030-SB-DUP 1[(a)] R1208700-008 QA/QC 12/19/2012		356030-SB-DUP 2[(a)] R1208700-033 QA/QC 12/20/2012		356030-SB-DUP 3[(a)] R1208700-047 QA/QC 12/20/2012		356030-RB1 R1208700-026 QA/QC 12/20/2012		356030-RB2 R1208700-050 QA/QC 12/20/2012		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
Aluminum	(mg/kg)	9,750		6,130		7,570		7,170		7,700		(<7.8)	U	(<7.8)	U	---	---
Antimony	(mg/kg)	(<0.186)	U	(<0.164)	U	(<0.125)	U	1.4	J	(<0.165)	U	2.2	J	(<1.1)	U	---	---
Arsenic	(mg/kg)	4.9	J	4.3	J	3.8	J	3.8		4.3	J	(<1.5)	U	(<1.5)	U	13	16
Barium	(mg/kg)	63.2		55.2		45.8		73.5	J	53.2		1.7	J	1.0	J	350	400
Beryllium	(mg/kg)	0.487	J	0.325	J	0.384	J	0.397	J	0.389	J	(<0.153)	U	(<0.153)	U	7.2	590
Cadmium	(mg/kg)	0.148	J	0.015	J	0.09	J	0.549		0.102	J	(<0.168)	U	(<0.168)	U	2.5	9.3
Calcium	(mg/kg)	6,690		10,600		6,660	J	10,800	J	3,660		(<176)	U	(<176)	U	---	---
Chromium	(mg/kg)	13.8		8.4		10		32.1		11.2		(<0.884)	U	(<0.884)	U	30	1,500
Cobalt	(mg/kg)	10.9	J	5.8	J	7.4		8.3	J	8.6	J	(<0.217)	U	0.232	J	---	---
Copper	(mg/kg)	20.7	J	58	J	14.7		84.6	J	18.2	J	(<1.5)	U	(<1.5)	U	50	270
Iron	(mg/kg)	24,400		15,900		18,200		18,800		19,200		11	J	26	J	---	---
Lead	(mg/kg)	11	J	68.8	J	12.9		53.1		9	J	(<0.625)	U	(<0.625)	U	63	1,000
Magnesium	(mg/kg)	3,840	J	4,830	J	3,060		3,660		2,950	J	13	J	7	J	---	---
Manganese	(mg/kg)	923		540		376		291		783		0.87	J	0.78	J	1,600	10,000
Mercury	(mg/kg)	0.028	J	0.116	J	0.027	J	0.057	J	0.019	J	(<0.026)	U	(<0.026)	U	0.18	2.8
Nickel	(mg/kg)	25.1	J	14.7	J	17.5		34.8	J	21.1	J	(<2.1)	U	(<2.1)	U	30	310
Potassium	(mg/kg)	1390	J	626	J	964		893		1,030	J	(<70.4)	U	(<70.4)	U	---	---
Selenium	(mg/kg)	0.921	J	0.927	J	(<0.31)	U	0.385	J	0.756	J	(<3.8)	U	(<3.8)	U	3.9	1,500
Silver	(mg/kg)	(<0.048)	U	(<0.042)	U	(<0.097)	U	(<0.043)	U	(<0.042)	U	(<0.54)	U	(<0.54)	U	2	1,500
Sodium	(mg/kg)	158	J	62.2	J	(<4.3)	U	92.7	J	106	J	212	J	(<34.8)	U	---	---
Thallium	(mg/kg)	(<1.9)	U	(<1.7)	U	(<0.235)	U	(<0.173)	U	(<1.7)	U	1.4	J	(<1.4)	U	---	---
Vanadium	(mg/kg)	14.6		10.2		10.9		13.1		12.4		0.353	J	(<0.283)	U	---	---
Zinc	(mg/kg)	65		47.3		72.3		333	J	50.9		2	J	2	J	109	10,000

(a) 356030-SB-DUP 1 collected at 356230-SB-07-4-6; 356030-SB-DUP 2 collected at 356230-SB-28-2.5-3.5 ; and 356030-SB-DUP 3 collected at 356030-SB-41-6-7.

(b) Rinsate blanks are aqueous samples, units are in µg/L.

NOTE: QA/QC = Quality Assurance/Quality Control

TABLE 3-5 POLYCHLORINATED BIPHENYLS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8082	Sample ID	356030-SB-01-4-6		356030-SB-02-5-6		356030-SB-03-5-6		356030-SB-04-5-6		356030-SB-05-5-6		356030-SB-06-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-001		R1208700-002		R1208700-003		R1208700-004		R1208700-005		R1208700-006			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
Aroclor-1242	(mg/kg)	(<0.020)	U	(<0.19)	U	(<0.019)	U	(<0.021)	U	(<0.020)	U	0.97		---	---
Aroclor-1248	(mg/kg)	(<0.020)	U	1.0		(<0.019)	U	(<0.021)	U	(<0.020)	U	(<0.10)	U	---	---
Aroclor-1254	(mg/kg)	(<0.020)	U	1.6		(<0.021)	U	(<0.024)	U	(<0.022)	U	0.35	J	---	---
Aroclor-1260	(mg/kg)	(<0.020)	U	(<0.19)	U	(<0.019)	U	(<0.021)	U	(<0.020)	U	(<0.10)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.020)	U	**2.6**		(<0.021)	U	(<0.024)	U	(<0.022)	U	**1.32**		0.1	1

Parameter List EPA Method 8082	Sample ID	356030-SB-07-4-6		356030-SB-08-5-6		356030-SB-09-2-3		356030-SB-09-6-8		356030-SB-10-5-6		356030-SB-11-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-007		R1208700-009		R1208700-010		R1208700-011		R1208700-012		R1208700-013			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
Aroclor-1242	(mg/kg)	(<0.020)	U	(<0.020)	U	(<0.20)	U	(<0.021)	U	(<0.020)	U	(<0.024)	U	---	---
Aroclor-1248	(mg/kg)	(<0.020)	U	(<0.020)	U	2.2	J	0.3		(<0.020)	U	(<0.024)	U	---	---
Aroclor-1254	(mg/kg)	(<0.023)	U	(<0.022)	U	1.3	J	0.16		(<0.022)	U	(<0.026)	U	---	---
Aroclor-1260	(mg/kg)	(<0.020)	U	(<0.020)	U	0.86		0.076	J	(<0.020)	U	(<0.024)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.023)	U	(<0.022)	U	**4.36**		**0.536**		(<0.022)	U	(<0.026)	U	0.1	1

Parameter List EPA Method 8082	Sample ID	356030-SB-12-6-7		356030-SB-13-4-5		356030-SB-14-4-5		356030-SB-15-2-3		356030-SB-16-4-5		356030-SB-17-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-014		R1208700-015		R1208700-016		R1208700-017		R1208700-018		R1208700-019			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
Aroclor-1242	(mg/kg)	(<0.021)	U	(<0.019)	U	(<0.023)	U	(<0.023)	U	(<0.022)	U	(<0.020)	U	---	---
Aroclor-1248	(mg/kg)	(<0.021)	U	(<0.019)	U	(<0.023)	U	(<0.023)	U	(<0.022)	U	(<0.020)	U	---	---
Aroclor-1254	(mg/kg)	(<0.023)	U	(<0.022)	U	0.062	J	(<0.026)	U	(<0.024)	U	(<0.023)	U	---	---
Aroclor-1260	(mg/kg)	(<0.021)	U	(<0.019)	U	(<0.023)	U	(<0.023)	U	(<0.022)	U	(<0.020)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.023)	U	(<0.022)	U	0.062	J	(<0.026)	U	(<0.024)	U	(<0.023)	U	0.1	1

NOTE:
EPA = U.S. Enivronmental Protection Agency
ID = Identification
NYCRR = New York Code of Rules and Regulation
mg/kg = milligrams per kilogram
U = Non-detect, detection below the method detection limit.
--- = No standard.
J = The associated numerical value is and estimated quantity.

Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.

Concentration values in **bold** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use.

Concentration values in **bold and highlighted** indicate the concentration was above the 6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use (Commercial

TABLE 3-5 POLYCHLORINATED BIPHENYLS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8082	Sample ID	356030-SB-18-5-6		356030-SB-19-5-6		356030-SB-20-3-4		356030-SB-21-4-5		356030-SB-22-5-6		356030-SB-23-3-4		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-020		R1208700-021		R1208700-022		R1208700-023		R1208700-024		R1208700-027			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012		12/19/2012			
Aroclor-1242	(mg/kg)	(<0.020)	U	(<0.021)	U	(<0.021)	U	(<0.19)	U	(<0.021)	U	(<0.020)	U	---	---
Aroclor-1248	(mg/kg)	(<0.020)	U	(<0.021)	U	(<0.021)	U	2.8		(<0.021)	U	(<0.020)	U	---	---
Aroclor-1254	(mg/kg)	(<0.022)	U	(<0.023)	U	(<0.024)	U	1.8		(<0.023)	U	(<0.022)	U	---	---
Aroclor-1260	(mg/kg)	(<0.020)	U	(<0.021)	U	(<0.021)	U	(<0.19)	U	(<0.021)	U	(<0.020)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.022)	U	(<0.023)	U	(<0.024)	U	**4.6**		(<0.023)	U	(<0.022)	U	0.1	1

Parameter List EPA Method 8082	Sample ID	356030-SB-24-3-4		356030-SB-25-4-5		356030-SB-26-2.5-3.5		356030-SB-27-3-4		356030-SB-28-2.5-3.5		356030-SB-29-5-6		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-028		R1208700-029		R1208700-030		R1208700-031		R1208700-032		R1208700-034			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/19/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
Aroclor-1242	(mg/kg)	(<0.020)	U	(<0.020)	U	(<0.020)	U	(<0.020)	U	(<0.019)	U	(<0.020)	U	---	---
Aroclor-1248	(mg/kg)	(<0.020)	U	(<0.020)	U	0.14	J	(<0.020)	U	(<0.019)	U	(<0.020)	U	---	---
Aroclor-1254	(mg/kg)	(<0.022)	U	(<0.022)	U	0.045		(<0.023)	U	0.1		(<0.023)	U	---	---
Aroclor-1260	(mg/kg)	(<0.020)	U	(<0.020)	U	(<0.020)	U	(<0.020)	U	(<0.019)	U	(<0.020)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.022)	U	(<0.022)	U	**0.185**		(<0.023)	U	**0.1**		(<0.023)	U	0.1	1

Parameter List EPA Method 8082	Sample ID	356030-SB-30-5-6		356030-SB-31-5-6		356030-SB-32-4-5		356030-SB-33-4-5		356030-SB-34-2-3		356030-SB-35-7-8		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-035		R1208700-036		R1208700-037		R1208700-038		R1208700-039		R1208700-040			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
Aroclor-1242	(mg/kg)	(<0.020)	U	(<0.027)	U	(<0.020)	U	(<0.020)	U	(<0.021)	U	(<0.020)	U	---	---
Aroclor-1248	(mg/kg)	(<0.020)	U	(<0.027)	U	(<0.020)	U	0.051		(<0.021)	U	0.089		---	---
Aroclor-1254	(mg/kg)	(<0.022)	U	(<0.030)	U	(<0.023)	U	(<0.022)	U	(<0.024)	U	(<0.022)	U	---	---
Aroclor-1260	(mg/kg)	(<0.020)	U	(<0.027)	U	(<0.020)	U	(<0.020)	U	0.051		(<0.020)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.022)	U	(<0.030)	U	(<0.023)	U	0.051		0.051		0.089		0.1	1

TABLE 3-5 POLYCHLORINATED BIPHENYLS DETECTED IN ON-SITE SUBSURFACE SOIL

Parameter List EPA Method 8082	Sample ID	356030-SB-36-4-5		356030-SB-37-4-5		356030-SB-38-2-3		356030-SB-39-1-3		356030-SB-40-6-7		356030-SB-41-6-7		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-041		R1208700-042		R1208700-043		R1208700-044		R1208700-045		R1208700-046			
	Sample Type	Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil		Subsurface Soil			
	Sample Date	12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012		12/20/2012			
Aroclor-1242	(mg/kg)	0.99		(<0.019)	U	1.4		0.98		(<0.021)	U	(<0.021)	U	---	---
Aroclor-1248	(mg/kg)	(<0.12)	U	(<0.019)	U	(<0.20)	U	(<0.092)	U	(<0.021)	U	(<0.021)	U	---	---
Aroclor-1254	(mg/kg)	0.46		(<0.021)	U	0.39		0.74		(<0.023)	U	(<0.023)	U	---	---
Aroclor-1260	(mg/kg)	0.92		(<0.019)	U	(<0.20)	U	0.25	J	(<0.021)	U	(<0.021)	U	---	---
Aroclor (Total)	(mg/kg)	**2.37**		(<0.021)	U	**1.79**		**1.97**		(<0.023)	U	(<0.023)	U	0.1	1

Parameter List EPA Method 8082	Sample ID	356030-SB-42-5-6		356030-SB-43-5-6		356030-SB-DUP 1[a]		356030-SB-DUP 2[a]		356030-SB-DUP 3[a]		356030-SB-RB1		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-048		R1208700-049		R1208700-008		R1208700-033		R1208700-047		R1208700-026			
	Sample Type	Subsurface Soil		Subsurface Soil		QA/QC		QA/QC		QA/QC		QA/QC			
	Sample Date	12/20/2012		12/20/2012		12/19/2012		12/20/2012		12/20/2012		12/20/2012			
Aroclor-1242	(mg/kg)	(<0.021)	U	(<0.019)	U	(<0.020)	U	(<0.019)	U	(<0.019)	U	(<0.0005)	U	---	---
Aroclor-1248	(mg/kg)	(<0.021)	U	(<0.019)	U	(<0.020)	U	0.14		(<0.019)	U	(<0.0005)	U	---	---
Aroclor-1254	(mg/kg)	(<0.024)	U	(<0.021)	U	(<0.022)	U	0.12		(<0.021)	U	(<0.0005)	U	---	---
Aroclor-1260	(mg/kg)	(<0.021)	U	(<0.019)	U	(<0.020)	U	(<0.019)	U	(<0.019)	U	(<0.0005)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.024)	U	(<0.021)	U	(<0.022)	U	**0.26**		(<0.021)	U	(<0.0005)	U	0.1	1

Parameter List EPA Method 8082	Sample ID	356030-RB2[b]		6 NYCRR Part 375 Soil Cleanup Objectives - Unrestricted Use (mg/kg)	6 NYCRR Part 375 Soil Cleanup Objectives - Restricted Use - Commercial (mg/kg)
	Lab ID	R1208700-050			
	Sample Type	QA/QC			
	Sample Date	12/20/2012			
Aroclor-1242	(mg/kg)	(<0.0005)	U	---	---
Aroclor-1248	(mg/kg)	(<0.0005)	U	---	---
Aroclor-1254	(mg/kg)	(<0.0005)	U	---	---
Aroclor-1260	(mg/kg)	(<0.0005)	U	---	---
Aroclor (Total)	(mg/kg)	(<0.0005)	U	0.1	1

(a) 356030-SB-DUP 1 collected at 356230-SB-07-4-6; 356030-SB-DUP 2 collected at 356230-SB-28-2.5-3.5 ; and 356030-SB-DUP 3 collected at 356030-SB-41-6-7.
(b) Rinsate blanks are aqueous samples, units are in µg/L.

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TABLE 3-11 VOLATILE ORGANIC COMPOUNDS DETECTED IN GROUNDWATER

Parameter List EPA Method 8260B	Well ID	MW-1		MW-1		MW-2		MW-2		MW-5		MW-5		MW-6		MW-6		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Sample ID	356030-MW-1-0113		356030-MW-1-1013		356030-MW-2-0113		356030-MW-2-1013		356030-MW-5-0113		356030-MW-5-1013		356030-MW-6-0113		356030-MW-6-1013		
	Lab ID	R1300618-001		R1307323-007		R1300618-006		R1307323-006		R1300618-009		R1307323-009		R1300618-011		R1307323-010		
	Sample Date	1/28/2013		10/1/2013		1/28/2013		10/1/2013		1/29/2013		10/2/2013		1/29/2013		10/2/2013		
2-Butanone	(µg/L)	(<0.81)	U	(<0.81)	U	(<0.81)	U	(<0.81)	U	(<0.81)	U	1.9	J	(<0.81)	U	(<0.81)	U	50 (g)
4-Methyl-2-pentanone	(µg/L)	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	1.0	J	(<0.67)	U	(<0.67)	U	---
Acetone	(µg/L)	1.6	J	2.2	J	(<1.3)	U	(<1.3)	U	7.7	J	11		13		12		50 (s)
Benzene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	**2.6**	**J**	(<0.2)	U	(<0.2)	U	1 (s)
Carbon disulfide	(µg/L)	(<0.22)	UJ	0.26	J	(<0.22)	U	0.24	J	0.22	J	0.68	J	(<0.22)	U	0.82	J	---
Chloroethane	(µg/L)	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	0.41	J	(<0.24)	U	5 (s)
Chloromethane	(µg/L)	(<0.21)	U	(<0.21)	U	(<0.21)	U	(<0.21)	U	0.21	J	(<0.21)	U	0.31	J	(<0.21)	U	---
cis-1,3-Dichloropropene	(µg/L)	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	5	U	(<0.24)	U	5	U	(<0.24)	U	0.4 (s)
Dibromochloromethane	(µg/L)	(<0.31)	U	(<0.31)	UJ	(<0.31)	U	(<0.31)	U	5	U	(<0.31)	UJ	5	U	(<0.31)	UJ	50 (g)
Dichloromethane	(µg/L)	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	---
Ethylbenzene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.31	J	(<0.2)	U	(<0.2)	U	5 (s)
m,p-Xylene	(µg/L)	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	1.5	J	(<0.33)	U	(<0.33)	U	5 (s)
Methyl tert-Butyl Ether	(µg/L)	---	---	(<0.29)	U	---	---	0.94	J	---	---	**14**		---	---	4.6	J	10
o-Xylene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	3.0	J	(<0.2)	U	(<0.2)	U	5 (s)
Tetrachloroethene	(µg/L)	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	5 (s)
Toluene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	4.6	J	(<0.2)	U	(<0.2)	U	5 (s)
trans-1,2-Dichloroethene	(µg/L)	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	5 (s)
trans-1,3-Dichloropropene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.4 (s)
Total BTEX	(µg/L)	Not Detected		Not Detected		Not Detected		0		Not Detected		12.01		Not Detected		0		---
Total VOCs	(µg/L)	1.6		2.46		Not Detected		6.18		18.13		40.59		23.72		22.42		---

NOTE:
EPA = U.S. Enivronmental Protection Agency
NYSDEC = New York State Department of Environmental Conservation
µg/L = micrograms per Liter = parts per billion (ppb)
U = Non-detect, detection below the method detection limit
J = Estimated value.
--- = No standard
BTEX = Benzene, toluene, ethylene, and xylene
VOC = Volatile organic compound
Data provided by ALS Environmental Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.
Concentration values in **bold** indicate that analyte was detecetd above the NYSDEC AWQS. S = Standard. G = Guidance.

TABLE 3-11 VOLATILE ORGANIC COMPOUNDS DETECTED IN GROUNDWATER

Parameter List EPA Method 8260B	Well ID	MW-7R				MW-9				MW-10				MW-11						NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Sample ID	356030-MW-7R-0113		356030-MW-7R-1013		356030-MW-9-0113		356030-MW-9-1013		356030-MW-10-0113		356030-MW-10-1013		356030-MW-11-0113		356030-DUP-0113		356030-MW-11-1013		
	Lab ID	R1300618-004		R1307323-003		R1300618-007		R1307323-011		R1300618-003		R1307323-002		R1300618-013		R1300618-022		R1307323-012		
	Sample Date	1/29/2013		10/1/2013		1/29/2013		10/2/2013		1/28/2013		10/1/2013		1/29/2013		1/29/2013		10/2/2013		
2-Butanone	(µg/L)	(<0.81)	U	(<0.81)	U	(<0.81)	U	(<0.81)	U	1.2	J	(<0.81)	U	(<0.81)	U	(<0.81)	U	(<0.81)	U	50 (g)
4-Methyl-2-pentanone	(µg/L)	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	(<0.67)	U	---
Acetone	(µg/L)	(<1.3)	U	(<1.3)	U	6.2	J	5.2	J	16		3.2	J	5.7	J	6.1	J	3.0	J	50 (s)
Benzene	(µg/L)	(<0.2)	U	(<0.2)	U	0.61	J	(<0.2)	U	**1.2**	**J**	**2.6**	**J**	(<0.2)	U	(<0.2)	U	(<0.2)	U	1 (s)
Carbon disulfide	(µg/L)	(<0.22)	U	0.4	J	0.26	J	0.84	J	(<0.22)	UJ	0.66	J	(<0.22)	U	(<0.22)	U	(<0.22)	U	---
Chloroethane	(µg/L)	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	0.72	J	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	5 (s)
Chloromethane	(µg/L)	(<0.21)	U	(<0.21)	U	0.23	J	(<0.21)	U	0.46	J	(<0.21)	U	(<0.21)	U	(<0.21)	U	(<0.21)	U	---
cis-1,3-Dichloropropene	(µg/L)	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<5)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	0.4 (s)
Dibromochloromethane	(µg/L)	(<0.31)	U	(<0.31)	UJ	(<0.31)	U	(<0.31)	U	(<5)	U	(<0.31)	UJ	(<0.31)	U	(<0.31)	U	(<0.31)	UJ	50 (g)
Dichloromethane	(µg/L)	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<5)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	(<0.32)	U	---
Ethylbenzene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.63	J	1.4	J	(<0.2)	U	(<0.2)	U	(<0.2)	U	5 (s)
m,p-Xylene	(µg/L)	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	0.89	J	2.2	J	(<0.33)	U	(<0.33)	U	(<0.33)	U	5 (s)
Methyl tert-Butyl Ether	(µg/L)	---	---	1.4	J	---	---	**170**		---	---	1.5	J	---	---	---	---	3.6	J	10
o-Xylene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.55	J	1.1	J	(<0.2)	U	(<0.2)	U	(<0.2)	U	5 (s)
Tetrachloroethene	(µg/L)	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<5)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	(<0.3)	U	5 (s)
Toluene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.25	J	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	5 (s)
trans-1,2-Dichloroethene	(µg/L)	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<5)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	5 (s)
trans-1,3-Dichloropropene	(µg/L)	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<5)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.4 (s)
Total BTEX	(µg/L)	Not Detected		0		0.61		0		3.52		7.3		Not Detected		Not Detected		0		---
Total VOCs	(µg/L)	Not Detected		6.8		7.3		181.04		21.9		13.24		5.7		6.1		21.6		---

TABLE 3-11 VOLATILE ORGANIC COMPOUNDS DETECTED IN GROUNDWATER

Parameter List EPA Method 8260B	Well ID	MW-12						MW-13				MW-14				NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Sample ID	356030-MW-12-0113		356030-MW-12-1013		356030-MW-DUPLICATE-1013		356030-MW-13-0113		356030-MW-13-1013		356030-MW-14-0113		356030-MW-14-1013		
	Lab ID	R1300618-015		R1307323-004		R1307323-008		R1300618-016		R1307323-001		R1300618-018		R1307323-005		
	Sample Date	1/28/2013		10/1/2013		10/1/2013		1/28/2013		10/1/2013		1/29/2013		10/1/2013		
2-Butanone	(µg/L)	3.7	J	2.1	J	2.1	J	(<0.81)	U	(<0.81)	U	24		0.94	J	50 (g)
4-Methyl-2-pentanone	(µg/L)	1.6	J	0.98	J	0.88	J	(<0.67)	U	(<0.67)	U	5.2	J	0.86	J	---
Acetone	(µg/L)	28		22		22		(<1.3)	U	1.4	J	**100**		7.6	J	50 (s)
Benzene	(µg/L)	**46**		**64**		**53**		(<0.2)	U	(<0.2)	U	**13**		**5.8**		1 (s)
Carbon disulfide	(µg/L)	2.6	J	16		4.7	J	(<0.22)	U	(<0.22)	U	0.41	J	1.9	J	---
Chloroethane	(µg/L)	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	0.41	J	(<0.24)	U	5 (s)
Chloromethane	(µg/L)	0.28	J	(<0.21)	U	(<0.21)	U	(<0.21)	U	(<0.21)	U	0.32	J	(<0.21)	U	---
cis-1,3-Dichloropropene	(µg/L)	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	(<0.24)	U	0.4 (s)
Dibromochloromethane	(µg/L)	(<0.31)	U	(<0.31)	UJ	(<0.31)	UJ	(<0.31)	U	(<0.31)	UJ	(<0.31)	U	(<0.31)	UJ	50 (g)
Dichloromethane	(µg/L)	2.8	J	1.5	J	1.4	J	(<0.32)	U	(<0.32)	U	0.81	J	(<0.32)	U	---
Ethylbenzene	(µg/L)	**21**		**28**		**22**		(<0.2)	U	(<0.2)	U	4.6	J	4.4	J	5 (s)
m,p-Xylene	(µg/L)	**77**		**100**		**83**		(<0.33)	U	(<0.33)	U	**18**		**15**		5 (s)
Methyl tert-Butyl Ether	(µg/L)	---	---	**700**		**760**		---	---	(<0.29)	U	---	---	**15**		10
o-Xylene	(µg/L)	**46**		**55**		**43**		(<0.2)	U	(<0.2)	U	**13**		**8.1**		5 (s)
Tetrachloroethene	(µg/L)	0.52	J	(<0.3)	U	0.59	J	(<0.3)	U	(<0.3)	U	(<0.3)		(<0.3)	U	5 (s)
Toluene	(µg/L)	**120**		**140**		**120**		(<0.2)	U	(<0.2)	U	**12**	U	(<0.2)	U	5 (s)
trans-1,2-Dichloroethene	(µg/L)	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	(<0.33)	U	5 (s)
trans-1,3-Dichloropropene	(µg/L)	(<0.20)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	(<0.2)	U	0.4 (s)
Total BTEX	(µg/L)	310		387		321		Not Detected		Not Detected		60.6		33.3		---
Total VOCs	(µg/L)	349.5		1,130.62		1,112.67		Not Detected		1.4		191.75		66.5		---

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TABLE 3-12 SEMIVOLATILE ORGANIC COMPOUNDS DETECTED IN GROUNDWATER

Parameter List EPA Method 8270C	Sample ID	356030-MW-1-0113		356030-MW-2-0113		356030-MW-5-0113		356030-MW-6-0113		356030-MW-7R-0113		356030-MW-9-0113		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Lab ID	R1300618-001		R1300618-006		R1300618-009		R1300618-011		R1300618-004		R1300618-007		
	Sample Date	1/28/2013		1/28/2013		1/29/2013		1/29/2013		1/29/2013		1/29/2013		
2,4-Dimethylphenol	(µg/L)	(<1.4)	U	(<1.4)	U	(<1.4)	U	(<1.4)	U	(<1.4)	U	(<1.4)	U	50 (g)
2-Methylphenol	(µg/L)	(<1.5)	U	(<1.5)	U	(<1.5)	U	(<1.5)	U	(<1.5)	U	(<1.5)	U	---
3- and 4-Methylphenol Coelution	(µg/L)	(<1.3)	U	(<1.3)	U	(<1.3)	U	(<1.3)	U	(<1.3)	U	(<1.3)	U	---
Benzyl Alcohol	(µg/L)	(<1.1)	U	(<1.1)	U	(<1.1)	U	(<1.1)	U	(<1.1)	U	(<1.1)	U	---
Naphthalene	(µg/L)	(<1.0)	U	(<1.0)	U	(<1.0)	U	(<1.0)	U	(<1.1)	U	(<1.0)	U	10 (g)
Phenol	(µg/L)	(<1.0)	U	(<1.0)	U	(<1.0)	U	(<1.0)	U	(<1.1)	U	(<1.0)	U	1 (s)

Parameter List EPA Method 8270C	Sample ID	356030-MW-10-0113		356030-MW-11-0113		356030-DUP-0113[a]		356030-MW-12-0113		356030-MW-13-0113		356030-MW-14-0113		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Lab ID	R1300618-003		R1300618-013		R1300618-022		R1300618-015		R1300618-016		R1300618-018		
	Sample Date	1/28/2013		1/29/2013		1/29/2013		1/28/2013		1/28/2013		1/29/2013		
2,4-Dimethylphenol	(µg/L)	(<1.4)	U	(<1.4)	U	(<1.4)	U	2.2	J	(<1.4)	U	(<1.4)	U	50 (g)
2-Methylphenol	(µg/L)	(<1.5)	U	(<1.5)	U	(<1.5)	U	2	J	(<1.5)	U	(<1.5)	U	---
3- and 4-Methylphenol Coelution	(µg/L)	(<1.3)	U	(<1.3)	U	(<1.3)	U	3.8	J	(<1.3)	U	4.3	J	---
Benzyl Alcohol	(µg/L)	(<1.1)	U	(<1.1)	U	(<1.1)	U	2.5	J	(<1.1)	U	(<1.1)	U	---
Naphthalene	(µg/L)	(<1.0)	U	(<1.0)	U	(<1.0)	U	2.1	J	(<1.0)	U	(<1.0)	U	10 (g)
Phenol	(µg/L)	(<1.0)	U	(<1.0)	U	(<1.0)	U	**17**		(<1.0)	U	**7.5**	**J**	1 (s)

(a) Duplicate sample collected at 356030-MW-11-0113

NOTE: EPA = U.S. Enivronmental Protection Agency
ID = Identification
NYSDEC = New York State Department of Environmental Conservation
µg/L = micrograms per Liter = parts per billion (ppb)
U = Non-detect, detection below the method detection limit
--- = No standard
J = Estimated value.
Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.
Concentration values in **bold** indicate that analyte was detecetd above the NYSDEC AWQS. G = Guidance Value, S = Standard. ND = Non-detect.

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TABLE 3-13A TARGET ANALYTE LIST METALS DETECTED IN GROUNDWATER

Parameter List EPA Method 6010B/7470A	Sample ID	356030-MW-1-0113		356030-MW-2-0113		356030-MW-5-0113		356030-MW-6-0113		356030-MW-7R-0113		356030-MW-9-0113		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Lab ID	R1300618-001		R1300618-006		R1300618-009		R1300618-011		R1300618-004		R1300618-007		
	Sample Date	1/28/2013		1/28/2013		1/29/2013		1/29/2013		1/29/2013		1/29/2013		
Aluminum	(µg/L)	19.4	J	**1,630**		22.7	J	15.8	J	(<7.8)	U	**123**		100 (s)
Arsenic	(µg/L)	9.6	J	4.8	J	(<1.5)	U	(<1.5)	U	(<1.5)	U	(<1.5)	U	25 (s)
Barium	(µg/L)	260		157		38.5		139		99.5		119		1,000 (s)
Calcium	(µg/L)	117,000		103,000		24,800		104,000		90,700		98,100		---
Chromium	(µg/L)	(<0.884)	U	4.1	J	(<0.884)	U	(<0.884)	U	(<0.884)	U	(<0.884)	U	50 (s)
Cobalt	(µg/L)	(<0.217)	U	0.456	J	(<0.217)	U	(<0.217)	U	(<0.217)	U	(<0.217)	U	5 (s)
Iron	(µg/L)	**8,140**		**4,920**		**4,400**		**7,280**		**754**		**2,120**		300 (s)
Lead	(µg/L)	0.872	J	6.8	J	1.7	J	0.778	J	0.768	J	4.4	J	25 (s)
Magnesium	(µg/L)	30,500		19,200		3,380		13,700		11,000		8,210		35,000 (g)
Manganese	(µg/L)	**839**		**6,840**		**577**		**873**		**585**		**1,230**		300 (s)
Potassium	(µg/L)	9,200		6,480		54,500		14,900		14,800		14,500		---
Selenium	(µg/L)	(<3.8)	U	(<3.8)	U	(<3.8)	U	(<3.8)	U	4.2	J	(<3.8)	U	10 (s)
Silver	(µg/L)	(<0.54)	U	1.8	J	1.1	J	1.2	J	(<0.54)	U	1.2	J	50 (s)
Sodium	(µg/L)	17,500		**66,000**		**53,700**		**45,700**		**27,300**		**43,400**		20,000 (s)
Vanadium	(µg/L)	(<0.42)	U	(<2.4)	U	(<0.394)	U	(<0.665)	U	(<0.283)	U	(<0.416)	U	---
Zinc	(µg/L)	1.1	J	11.1	J	2.8	J	1.7	J	3.2	J	7.7	J	2,000 (s)

Parameter List EPA Method 6010B/7470A	Sample ID	356030-MW-10-0113		356030-MW-11-0113		356030-DUP-0113[a]		356030-MW-12-0113		356030-MW-13-0113		356030-MW-14-0113		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Lab ID	R1300618-003		R1300618-013		R1300618-022		R1300618-015		R1300618-016		R1300618-018		
	Sample Date	1/28/2013		1/29/2013		1/29/2013		1/28/2013		1/28/2013		1/29/2013		
Aluminum	(µg/L)	**556**		(<7.8)	U	28	J	**2,310**		**257**		**210**		100 (s)
Arsenic	(µg/L)	5.8	J	(<1.5)	U	(<1.5)	U	4.4	J	(<1.5)	U	13.7		25 (s)
Barium	(µg/L)	245		125		123		228		72.6		203		1,000 (s)
Calcium	(µg/L)	149,000		112,000		109,000		158,000		143,000		59,600		---
Chromium	(µg/L)	1.3	J	(<0.884)	U	(<0.884)	U	2.2	J	(<0.884)	U	(<0.884)	U	50 (s)
Cobalt	(µg/L)	0.252	J	(<0.217)	U	(<0.217)	U	0.728	J	0.408	J	(<0.217)	U	5 (s)
Iron	(µg/L)	**15,600**		**1,190**		**1,180**		**1,850**		**389**		**2,050**		300 (s)
Lead	(µg/L)	6.6	J	1.2	J	1.6	J	**31**	J	0.949	J	2.5	J	25 (s)
Magnesium	(µg/L)	13,600		15,300		15,200		637	J	13,900		8,230		35,000 (g)
Manganese	(µg/L)	**1,710**		**1,070**		**1,050**		101		62		**852**		300 (s)
Potassium	(µg/L)	11,100		14,300		15,000		49,500		3,910		116,000		---
Selenium	(µg/L)	3.9	J	(<3.8)	U	(<3.8)	U	(<3.8)	U	6.5	J	(<3.8)	U	10 (s)
Silver	(µg/L)	1.0	J	1.2	J	2.0	J	1.5	J	1.6	J	1.4	J	50 (s)
Sodium	(µg/L)	**23,700**		**38,400**		**39,200**		**72,100**		**23,900**		**121,000**		20,000 (s)
Vanadium	(µg/L)	(<2.7)	U	(<0.283)	U	(<0.283)	U	4.8	J	(<0.63)	U	(<0.797)	U	---
Zinc	(µg/L)	9.6	J	(<1.1)	U	1.3	J	13.9	J	2.8	J	4.3	J	2,000 (s)

(a) Duplicate sample collected at 356030-MW-11-0113

NOTE: EPA = U.S. Enivronmental Protection Agency
ID = Identification
NYSDEC = New York State Department of Environmental Conservation
µg/L = micrograms per Liter = parts per billion (ppb)
J = Estimated value.
U = Non-detect, detection below the method detection limit
--- = No Standard
Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.
Concentration values in **bold** indicate that analyte was detecetd above the NYSDEC AWQS. G = Guidance Value, S = Standard.

TABLE 3-13B TARGET ANALYTE LIST DISSOLVED METALS DETECTED IN GROUNDWATER

Parameter List EPA Method 6010B/7470A	Sample ID	356030-MW-1-0113		356030-MW-2-0113		356030-MW-5-0113		356030-MW-6-0113		356030-MW-7R-0113		356030-MW-9-0113		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Lab ID	R1300618-002		R1300618-027		R1300618-010		R1300618-012		R1300618-005		R1300618-008		
	Sample Date	1/28/2013		1/28/2013		1/29/2013		1/29/2013		1/29/2013		1/29/2013		
Aluminum	(µg/L)	(<7.8)	U	28	J	25	J	10	J	7.8	U	15.5	J	100 (s)
Arsenic	(µg/L)	9.8	J	2.3	J	(<1.5)	U	(<1.5)	U	(<1.5)	U	(<1.5)	U	25 (s)
Barium	(µg/L)	245		59	J	39.3	J	137		96.6		123		1,000 (s)
Calcium	(µg/L)	113,000		104,000		24,800		104,000		91,400		103,000		---
Cobalt	(µg/L)	(<0.217)	U	(<0.217)	U	(<0.217)	U	(<0.217)	U	(<0.217)	U	(<0.217)	U	5 (s)
Iron	(µg/L)	**6,640**		(<12.9)	U	**4,200**		**7,210**		**572**		**2,000**		300 (s)
Lead	(µg/L)	1.5	J	(<1.7)	U	(<1.6)	U	1.5	J	1.1	J	0.9	J	25 (s)
Magnesium	(µg/L)	29,700		19,600		3,410		13,700		11,100		8,520		35,000 (g)
Manganese	(µg/L)	**834**		**4,220**		**585**		**867**		**600**		**1,290**		300 (s)
Nickel	(µg/L)	(<2.1)	U	(<2.1)	U	(<2.1)	U	(<2.1)	U	(<2.1)	U	(<2.1)	U	100 (s)
Potassium	(µg/L)	9,110		6,320	J	57,200	J	14,800		15100		15000		---
Selenium	(µg/L)	3.8	J	4.9	J	(<3.8	U	(<3.8)	U	(<3.8)	U	(<3.8)	U	10 (s)
Silver	(µg/L)	0.701	J	1.8	J	0.812	J	1.1	J	0.963	J	0.828	J	50 (s)
Sodium	(µg/L)	17,500		**67,000**		**53,000**		**44,700**		**28,000**		**46,100**		20,000 (s)
Zinc	(µg/L)	1.4	J	(<1.1)	U	(<1.1)	U	1.5	J	2.6	J	2.0	J	2,000 (s)

Parameter List EPA Method 6010B/7470A	Sample ID	356030-MW-10-0113		356030-MW-11-0113		356030-DUP-0113[(a)]		356030-MW-12-0113		356030-MW-13-0113		356030-MW-14-0113		NYSDEC Ambient Water Quality Standard Class GA (µg/L)
	Lab ID	R1300618-026		R1300618-014		R1300618-023		R1300618-028		R1300618-017		R1300618-019		
	Sample Date	1/28/2013		1/29/2013		1/29/2013		1/28/2013		1/28/2013		1/29/2013		
Aluminum	(µg/L)	(<7.8)	U	(<7.8)	U	11	J	740		(<7.8)	U	27.4	J	100 (s)
Arsenic	(µg/L)	(<1.5)	U	(<1.5)	U	(<1.5)	U	1.5	J	(<1.5	U	11.1		25 (s)
Barium	(µg/L)	146	J	123		126		236	J	67.5		206		1,000 (s)
Calcium	(µg/L)	133,000		109,000		112,000		165,000		138,000		61,300		---
Cobalt	(µg/L)	(<0.217)	U	(<0.217)	U	(<0.217)	U	0.318	J	(<0.217)	U	(<0.217)	U	5 (s)
Iron	(µg/L)	(<24.4)	U	**1,270**		**1,200**		(<35.9)	U	(<2.9)	U	**1,890**		300 (s)
Lead	(µg/L)	(<0.656)	U	0.851	J	1.6	J	(<1.2)	U	1.2	J	2.6	J	25 (s)
Magnesium	(µg/L)	14,800		15,000		15,600		71	J	13,300		8,450		35,000 (g)
Manganese	(µg/L)	**1,040**		**1,040**		**1,080**		6	J	14.9		**901**		300 (s)
Nickel	(µg/L)	(<2.1)	U	(<2.1)	U	(<2.1)	U	10.1	J	(<2.1)	U	2.3	J	100 (s)
Potassium	(µg/L)	7,640	J	14,700		14,600		52,200	J	3,760		112,000		---
Selenium	(µg/L)	5.5	J	(<3.8)	U	(<3.8)	U	4.7	J	4.8	J	(<3.8)	U	10 (s)
Silver	(µg/L)	0.98	J	1.5	J	1.9	J	1.6	J	1.5	J	1.4	J	50 (s)
Sodium	(µg/L)	**23,700**		**38,500**		**38,700**		**74,500**		**23,500**		**121,000**		20,000 (s)
Zinc	(µg/L)	(<1.1)	U	1.6	J	3.2	J	(<1.1)	U	2.0	J	2.8	J	2,000 (s)

(a) Duplicate sample collected at 356030-MW-11-0113

NOTE: EPA = U.S. Enivronmental Protection Agency
ID = Identification
NYSDEC = New York State Department of Environmental Conservation
µg/L = micrograms per Liter = parts per billion (ppb)
U = Non-detect, detection below the method detection limit
J = Estimated value.
--- = No Standard
Data provided by Columbia Analytical Services, Inc. Only analytes that were detected in at least one sample are shown. Data validation completed by Environmental Data Services, Inc.
Concentration values in **bold** indicate that analyte was detecetd above the NYSDEC AWQS. G = Guidance Value, S = Standard.

Appendix B

Technology Screening Letter

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EA Engineering, P.C.
EA Science and Technology

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October 3, 2014

Mr. James Candiloro
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7017

RE: Contract/Work Assignment No: D007624-17
Site/Spill No/Pin: Millens Scrapyard Site (356030)
Remedial Action Objectives and Feasibility Study Technology Screening

Dear Mr. Candiloro:

EA Engineering, P.C., and its affiliate EA Science and Technology (EA) is providing the Department with this technology screening review letter to facilitate development of the feasibility study (FS) being prepared for the Millens Scrapyard site (356030), located in Kingston, New York. The FS is being completed in accordance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) *Technical Guidance for Site Investigation and Remediation* (2010)[1].

INTRODUCTION

The Millens Scrapyard site is 74,528 ft^2 (1.7 acres), and is located at 230 East Strand Street, Kingston, New York in Ulster County at the confluence of Rondout Creek and the Hudson River. The site is situated in an industrialized area and is bordered on the east by North Street, on the north by East Strand Street, and on the south by and a railroad right-of-way (Figure 1). The Millens Staging Area site (NYSDEC Site No. 356040) is located to the east of the Millens Scrapyard site. Residential properties are located north and northwest of the site, and commercial property is located to the west. The property immediately west of the site historically operated as an oil storage facility consisting of storage tanks and a distribution depot (Ecosystems Strategies, Inc. [ESI] 2004)[2]; the area is currently vacant. The former Kingston manufactured gas plant (MGP) is located to the south, immediately opposite the railroad right-of-way. A natural gas transmission main is currently operated at the former MGP. A 10-in. high pressure transmission line extends east from the MGP site and generally along the railroad right-of-way. This transmission line angles northwest towards the Millens Staging Area.

The site's main features include a brick building located in the northwestern portion of the site. There is currently a concrete slab foundation and sprung structure at the former vehicle crushing

1 NYSDEC. 2010. DER-10 / Technical Guidance for Site Investigation and Remediation. May 3.

2 Ecosystems Strategies, Inc. (ESI), 2004. Remedial Investigation / Feasibility Study Performed on the B. Millens Sons, Inc. Property, 230 East Strand, Kingston, New York. September.

area located in the northeastern portion of the site. The remainder of the site is generally open space. Based on the City of Kingston records, the site appears to be connected to the central water and sewer system, as well as electrical and natural gas services. The main building located on the western half of the property has several floor drains with no known discharge. No groundwater supply wells are located on-site (ESI 2004).

The remedial goal for all remedial actions is considered to be the restoration of the site to the pre-disposal/pre-release conditions to the extent practicable. Remedial action objectives (RAOs) are defined as the medium-specific or area-specific cleanup objectives to provide protection of public health and the environment. The RAOs are based on contaminant-specific standards, criteria, and guidance (SCGs) for impacted media as defined in the remedial investigation (RI). The RI results were compared to medium-specific SCGs. The SCGs were selected based on the current and reasonably ascertainable future land use and potential human and ecological receptors. The SCGs used to evaluate the RI data included:

- NYSDEC Class GA groundwater standards and guidance values, as presented in the Division of Water Technical and Operational Guidance Series 1.1.1, 1998, as amended.

- 6 New York Code of Rules and Regulations (NYCRR) Part 375 Environmental Remediation Programs – Soil Cleanup Objectives (SCOs).

REMEDIAL INVESTIGATION SUMMARY

The objectives of the RI were to evaluate the effectiveness of RAs conducted by others; characterize remaining impacts to subsurface soil, fill material, and groundwater; and identify the potential for impacts to offsite soil as a result of discharges of untreated groundwater during a RA. The RI field activities included the following elements:

- On-site subsurface soil evaluation program (test pitting, direct-push soil borings, and subsurface soil sampling)—December 2012

- Monitoring well installation and development—December 2012

- Monitoring well gauging and groundwater sampling—January and October 2013.

- Offsite soil investigation (surface soil sampling and shallow subsurface soil sampling) — December 2012 and October 2013.

The findings of the RI were based on all applicable and relevant SCGs associated with RIs conducted under the DER-10 (NYSDEC 2010)[1].

Onsite Subsurface Soil

- Fill consisting of rocky material with occasional sand and silt, brick, and crushed stone and concrete was encountered at depths of 1–6 ft. Native soil encountered beneath the fill material consisted of a sand and silt layer.

- A demarcation layer consisting of geosynthetic clay liner and/or polyvinyl sheeting was observed in test pits and soil borings at depths ranging from approximately 0.3 to 1.3 ft below ground surface (4 to 16 in. below ground surface).

- Subsurface soil is impacted with VOCs (specifically benzene, toluene, ethylene, and xylene [BTEX] constituents), SVOCs (specifically, polycyclic aromatic hydrocarbons [PAHs]), metals (particularly copper, cadmium, lead, mercury, and zinc), and polychlorinated biphenyls (PCBs) at concentrations that exceeded applicable SCGs.

Onsite soil concentrations exceeding Commercial SCOs are summarized in the following table.

Constituent	Range of Detections (ppm)	SCG (ppm)	Frequency of Exceeding SCG
VOLATILE ORGANIC COMPOUNDS			
Acetone	ND-0.38	0.05	3/44
Toluene	ND-12	0.7	3/44
Total Xylenes	ND-39	0.26	5/44
SEMIVOLATILE ORGANIC COMPOUNDS			
Benzo(a)anthracene	ND-19	1	6/44
Benzo(a)pyrene	ND-17	1	6/44
Benzo(b)fluoranthene	ND-15	1	7/44
Benzo(k)fluoranthene	ND-12	0.8	7/44
Chrysene	ND-18	1	6/44
Indeno(1,2,3-cd)pyrene	ND-9.6	0.5	7/44
TARGET ANALYTE LIST METALS			
Cadmium	0.015-25.1	2.5	4/44
Copper	3-624	50	7/44
Lead	2-2,500	63	9/44
Mercury	0.003-15.4	0.18	6/44
Nickel	3-80	30	3/44
Zinc	10-3,030	109	14/44
POLYCHLORINATED BIPHENYLS			
Aroclor (Total)	ND-4.6	0.1	9/44

Notes:
ND – Non Detect
SCG – Standards, Criteria and Guidance
ppm – parts per million (milligrams per kilogram)

Groundwater

- Groundwater in the southeastern portion of the site is impacted with BTEX compounds and Phenol at concentrations that exceed the applicable SCGs.

- Additionally, groundwater is impacted with metals (predominantly iron, manganese, and sodium), both total and dissolved, at concentrations that exceed the applicable SCGs.

- Groundwater in the northeastern corner of the site contained benzene and lead at concentrations that exceed the applicable SCGs.

The groundwater concentrations exceeding NYSDEC GA groundwater standards are summarized in the following table.

Constituent	Range of Detections (ppb)	SCG (ppb)	Frequency of Exceeding SCG
VOLATILE ORGANIC COMPOUNDS			
Benzene	ND-64	1	8/24
Ethylbenzene	ND-21	5	3/24
m&p-Xylene	ND-77	5	5/24
o-Xylene	ND-46	5	5/24
Toluene	ND-120	5	4/24
MTBE	ND-760	10	5/12
SEMIVOLATILE ORGANIC COMPOUNDS			
Phenol	ND-17	1	2/12
TOTAL METALS			
Aluminum	ND-2,310	100	7/12
Iron	389-15,600	300	12/12
Lead	ND-31	25	1/12
Manganese	62-1,710	300	10/12
Sodium	17,500-121,000	20,000	11/12
DISSOLVED METALS			
Aluminum	ND-740	100	1/12
Iron	ND-6,640	300	8/12
Manganese	6-4,220	300	10/12
Sodium	17,500-121,000	20,000	11/12

Notes:
ND – Non Detect
SCG – Standards, Criteria and Guidance
ppb – parts per billion (micrograms per liter)

Offsite Surface Soil

SVOCs (primarily PAHs) and PCBs were also detected in offsite surface soil, and metals were detected in surface soil at concentrations that exceeded SCGs in the area where untreated groundwater was discharged. The impacts to offsite surface soil are not addressed under this technology evaluation.

FEASIBILITY STUDY

The criteria and initial screening to be used to develop the FS Report are summarized below:

- Pursuant to DER-10 (NYSDEC 2010)[1], remedial goals for the site are defined by the applicable regulations for New York State Inactive Hazardous Waste Disposal Site Remedial Program (State Superfund Program or SSF), as defined by Environmental Conservation Law (ECL), Article 27, Title 13.

- RAOs are medium-specific objectives for the protection of public health and the environment, and are developed based on contaminant-specific SCGs to address contamination identified at a site. NYSDEC has developed generic RAOs for various media that will be used during the development of the FS and remedy selection process.

The RAOs for impacted media identified at the site are listed below.

Media	Remedial Action Objective
Soil/Fill	◦ Prevent ingestion/direct contact with contaminated soil. ◦ Prevent migration of contaminants that would result in groundwater or surface water contamination.
Groundwater	◦ Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.

EA completed the technology screening in accordance with DER-10 (NYSDEC 2010)[1] and the 1988 U.S. Environmental Protection Agency (EPA) publication *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (EPA l540lG-891004) (EPA 1988)[3]. The screening was designed to evaluate applicable technologies based on impacted media identified at the site during the RI.

3 EPA. 1988. *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA* (EPA l540lG-891004). October.

TECHNOLOGY SCREENING

The technology screening process assessed applicable technologies based on area-specific media and contaminants, as well as with consideration of the following five categories:

- Compliance with RAO
- Effectiveness
- Implementability
- Reduction of toxicity, mobility, and volume
- Cost.

The technology screening table (Table 1) attached to this letter provides a review of each technology screened for potentially addressing surface and subsurface soil/fill material based upon the above listed criteria. EA has evaluated multiple technologies known to be effective in the remediation of organic and/or inorganic contaminants in soil/fill and groundwater. Based on the screening matrix, EA proposes to develop the FS evaluating the remedial alternatives presented in Table 2 (attached).

If you have any questions, please do not hesitate to contact me at (315) 431-4610, extension 1868.

Sincerely,

EA SCIENCE AND TECHNOLOGY

Christopher Schroer
Project Manager

Appendix C

Costs

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TECHNOLOGY	LOCATION	MEDIA	Estimated Cost to Implement	$214,464	
Alternative 2 Site Management	B. Millens Scrapyard Site Kingston, NY	Soil and Groundwater	Initial Implementation Time:	2	months
			Operation Time:	NA	months
			Post Remediation Monitoring	NA	years

		Quantities		Cost Breakdown (if available)						Combined Unit Costs	
Description	Data Source (Means[1] or Other)	Quantity Amount	Quantity Unit	Material Unit Cost	Material Total Cost	Labor Unit Cost	Labor Total Cost	Equipment Unit Cost	Equipment Total Cost	Unit Cost	Option Total Cost
REMEDIAL ACTION		**TOTAL CAPITAL COST (totals rounded to nearest thousand)**									**$28,675**
Site Management Activities											**$25,603**
Surveyor- ALTA Survey and monument installation	*Recent quote from MJ Engineering*	1	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,000	$7,000
Legal		1	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$10,000
Fence, chain link, 9 ga. Wire, in concrete, 5' H	*323113202100*	300	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 21.29	$6,387
Fence, chain link overhead slide gate, 6' H 18' W	*323113203100*	18	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 123.10	$2,216
Professional/Technical Services											**$3,072**
6%	Project Management									$25,603	$1,536.17
3%	Remedial Design										$768.08
3%	Construction Management										$768.08
LONG TERM ANNUAL MONITORING AND MAINTENANCE										**ANNUAL LTM COST (YRS 1-5)**	$18,860
										ANNUAL LTM COST (YRS 6-30)	$9,430
										LIFETIME LTM (NPV)	**$185,789**
Monitoring and Maintenance											
Site Monitoring											**$9,430**
Mobilization/Demobilization of Inspector		1	event	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,240.00	$1,240
Site Monitoring											
Groundwater sampling for 1 event - Includes collectio		11	well	$ -	$ -	$ 255	$ 2,805	$ 66	$ 731	$ -	$3,536
Materials	*Engineer's Estimate*	1	event	$ 50.00	$ 50	$ -	$ -	$ -	$ -	$ -	$50
Laboratory analysis											
Metals VOCs, SVOCs, plus 20% QA/QC	*Life Science Laboratories*	13	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 277	$3,656
Sample shipping		3	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 75	$225
Reporting		6	hr	$ -	$ -	$ 85	$ 510.00	$ -	$ -	$ -	$510
Maintenance- Fence Maintenance											
Fence, chain link, 9 ga. Wire, in concrete, 5' H	*323113202100*	10	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 21.29	$213
Lifetime Long Term Monitoring (Net Present Value)											
5	Years of Semi Annual Monitoring										
25	Years of Annual Monitoring										
5%	Discount Factor (per NYSDEC)										

TOTAL ESTIMATED NPV TECHNOLOGY COST (Capital + Lifetime O&M) **$214,464**

Assumptions:

Labor Cost per hr	$85				
Vehicle mileage reimbursement rate	$0.55			hours travel per event	6
				for materials (gloves, notebooks, etc.)	$50

Groundwater Sampling: 11 MWs; 1 times sampled; 1.50 hrs/sample; 20% added for QA/QC samples; 2 workers sampling; 17

Analytical cost			
	TAL Metals	$84.00	per sample
	SVOCs	$129.00	per sample
	VOCs	$64.00	per sample
	TOC	$21.00	per sample
	Nitrate	$11.00	per sample
	Chloride, Sulfate	$23.00	per sample
	Sulfide	$12.00	per sample
For each sampling event, assumed:		$50	for materials (gloves, notebooks, etc.)

2	hrs / well sampling
2	worker per gw sample
	months for pre-design characterization
	months for site prep/restoration
	months to completion

Typical Rental Rates - Includes G&A and 10% Profit

Mini-Rae Survey Mode PID	$96.08	per day
Horiba U-10 Water Quality Meter	$73.77	per day
Submersible Pump	$42.16	per day
2 in Pump Control Box	$72.27	per day
Generator: 110 V	$57.24	per day
Level D PPE	$23.82	per day

TECHNOLOGY		LOCATION		MEDIA		Estimated Cost to Implement		$593,033	
Alternative 3 **Containment of Contaminated Soil/Fill with a Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls**		**B. Millens Scrapyard Site** **Kingston, NY**		**Soil and Groundwater**		**Construction Time:** **Operation Time:** **Post Remediation Monitoring**		**3** **---** **30**	**months** **months** **years**

		Quantities		Cost Breakdown (if available)						Combined Unit Costs	
Description	Data Source (Means[1] or Other)	Quantity Amount	Quantity Unit	Material Unit Cost	Material Total Cost	Labor Unit Cost	Labor Total Cost	Equipment Unit Cost	Equipment Total Cost	Unit Cost	Option Total Cost
REMEDIAL ACTION		**TOTAL CAPITAL COST (totals rounded to nearest thousand)**									**$376,302**
Construction Activities											**$298,336**
Site Preparation											
Survey/Boundaries & Markers	*17123131100*	1	day	$ -	$ -		$ -		$ -	$ 1,243	$1,243
Topographic Survey	*22113090020*	1.6	acre	$ -	$ -	$ -	$ -	$ -	$ -	$ 617	$988
Utility Locator (based on recent bids)	*recent quote*	1.0	day	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,465	$2,465
Work Plan Preparation (Including QAPP, FAP and HASP)		1.0	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$15,000
Erosion & Sediment Control Plan		1	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$15,000
Silt Fence	*312514161000*	725	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 0.97	$703
Capping											
Community Air Monitoring (Dust)	*recent quote - Pine Environmental*	1	mo	$ -	$ -	$ 13,600	$ 13,600	$ 3,420	$ 3,420	$ -	$17,020
Dust Control, Light	*31 23 23.20 2500*	10	day	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,121.19	$11,212
Fine grading, small irregular areas	*312216101050*	6,161	sy	$ -	$ -	$ -	$ -	$ -	$ -	$ 3.05	$18,792
Geotextile (Non woven)	*313219161550*	6,161	sy	$ -	$ -	$ -	$ -	$ -	$ -	$ 2.21	$13,617
Supply and Transportation of NYS Certified Clean Back Fill Material	*Recent quote-Carver*	4,005	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 20.90	$83,702
Backfill 300HP Dozer, 150' haul	*312323145220*	4,005	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.47	$5,887
Compacting backfill, 6" lift, 2 passes w/ drum	*312323235060*	3,081	ecy	$ -	$ -	$ -	$ -	$ -	$ -	$ 0.45	$1,386
Topographic Survey	*22113090020*	1.6	acre	$ -	$ -	$ -	$ -	$ -	$ -	$ 617	$988
Site Restoration											
Topsoil	*Recent quote-Carver*	1,335	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 46	$61,408
Fine grading, small irregular areas	*312216101050*	6,161	sy	$ -	$ -	$ -	$ -	$ -	$ -	$ 3.05	$18,792
Utility mix, 7#/M.S.F., Hydro or air seeding	*32 92 19.14 5400*	55	msf	$ -	$ -	$ -	$ -	$ -	$ -	$ 92.32	$5,119
Monitoring Well Repair	*Engineer's Estimate*	1	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 600	$600
Topographic Survey	*02 21 23 09 0020*	1.6	acre	$ 20.94	$ 34	$ 597.77	$ 956	$ 23	$ 37		$1,027
Fence, chain link, 9 ga. Wire, in concrete, 5'	*323113202100*	300	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 21.29	$6,387
Environmental Easement											
Legal		1	ls		$ -		$ -		$ -	$ 10,000	$10,000
Surveyor- ALTA Survey and monument installation	*Recent quote from MJ Engineering*	1	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,000	$7,000
Mobilization and Demobilization											**$14,917**
5%	of Total Costs of Site Work									$298,336	$14,916.81
Contingency											**$12,332**
5%	of Total Construction Activities									$246,640	$12,332.01
Professional/Technical Services											**$50,717**
5%	Project Management									$298,336	$14,916.81
6%	Remedial Design										$17,900.18
6%	Construction Management										$17,900.18

LONG TERM MONITORING											
										ANNUAL LTM COST (YRS 1-5)	**$22,001**
										ANNUAL LTM COST (YRS 6-30)	**$11,000**
										LIFETIME LTM (NPV)	**$216,731**
Monitoring, Sampling, Testing and Analysis (Per Event)											
											$11,000
Site Monitoring											
Inspection of soil cover		1	hr	$ -	$ -	$ 85.00	$ 85	$ -	$ -	$ -	$85
Groundwater sampling for 1 event - Includes collect		11	well	$ -	$ -	$ 255.00	$ 2,805	$ 66	$ 731	$ -	$3,536
Materials	*Engineer's Estimate*	1	event	$ 50.00	$ 50	$ -	$ -	$ -	$ -	$ -	$50
Mobilization/Demobilization of Field Sampling Crev		1	event	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,714	$1,714
Reporting		10	hr	$ 85.00	$ 850	$ -	$ -	$ -	$ -	$ -	$850
Laboratory analysis											
Metals VOCs, SVOCs, MNA, plus 20% QA/QC	*Life Science Laboratories*	13	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 344	$4,541
Sample shipping		3	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 75	$225
Lifetime Long Term Monitoring (Net Present Value)											
5	Years of Semi Annual Monitoring										
25	Years of Annual Monitoring										
5%	Discount Factor (per NYSDEC)										

TOTAL ESTIMATED NPV TECHNOLOGY COST (Capital + Post Remediation Monitoring) **$593,033**

TECHNOLOGY	LOCATION	MEDIA	Estimated Cost to Implement	$593,033	
Alternative 3 **Containment of Contaminated Soil/Fill with a Soil Cover, Monitored Natural Attenuation of Groundwater, and Institutional Controls**	**B. Millens Scrapyard Site** **Kingston, NY**	**Soil and Groundwater**	**Construction Time:**	**3**	**months**
			Operation Time:	**---**	**months**
			Post Remediation Monitoring	**30**	**years**

Site Work Assumptions

Soil Cover Area (sf)
55452 1.27300275 acres
1.3 conversion from ecy to lcy
Total site Area (acres)
1.6

Vehicle mileage reimbursement rate: **$0.55**
workers per event: **2**
hours travel per event: **6**

lodging 105
meals 66

Groundwater Sampling

11 MWs
1 times sampled
20% added for QA/QC samples
1.50 hrs/sample
2 workers sampling

Labor
$85 Cost per hr
2 hrs / well sampling
2 worker per gw sample

Analytical cost		
	TAL Metals	**$84.00** per sample
	SVOCs	**$129.00** per sample
	VOCs	**$64.00** per sample
	TOC	**$21.00** per sample
	Nitrate	**$11.00** per sample
	Chloride, Sulfate	**$23.00** per sample
	Sulfide	**$12.00** per sample

17

17 yds fill/load
314.11 loads fill
25 loads/day
2 months for site prep/restoration
1 months to completion

For each sampling event, assumed: **$50** for materials (gloves, notebooks, etc.)

Typical Rental Rates - Includes G&A and 10% Profit

Mini-Rae Survey Mode PID	**$96.08** per day
Horiba U-10 Water Quality Meter	**$73.77** per day
Submersible Pump	**$42.16** per day
2 in Pump Control Box	**$72.27** per day
Generator: 110 V	**$57.24** per day
Level D PPE	**$23.82** per day

Work day consists of: **10** hrs

Notes

sy	square yard	mo	month
cy	cubic yard	ls	lump sum
lcy	loose cubic yard	O&M	Operation and maintenance
bcy	bank cubic yard	H&S	Health and Safety
ecy	embankment cubic yard		
lf	linear feet		
sf	square feet		
msf	1,000 square feet		

TECHNOLOGY	LOCATION	MEDIA	Estimated Cost to Implement	$1,975,977	
Alternative 4 **Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater and Institutional Controls**	**B. Millens Scrapyard Site** **Kingston, NY**	**Soil**	**Construction Time:**	**3**	**months**
			Operation Time:	**-**	**months**
			Post Remediation Monitoring	**30**	**years**

		Quantities		Cost Breakdown (if available)						Combined Unit Costs	
Description	Data Source (Means[1] or Other)	Quantity Amount	Quantity Unit	Material Unit Cost	Material Total Cost	Labor Unit Cost	Labor Total Cost	Equipment Unit Cost	Equipment Total Cost	Unit Cost	Option Total Cost
REMEDIAL ACTION		**TOTAL CAPITAL COST (totals rounded to nearest thousand)**									**$1,845,920**
Construction Activities											**$1,409,440**
Pre-Design Characterization Study											
Mobilization/Demobilization	*recent invoice - Geologic*	1	ls							$ 1,500	$1,500
Driller- 1 day		1	day							$ 1,200	$1,200
Laboratory Analysis- TCLP		6	each							$ 620	$3,720
Groundwater Assessment											
Biotraps and analysis	*Quote, Microbial Insights, 3% per year inflation*	4	well	$ -	$ -	$ -	$ -	$ -	$ -	$ 753.53	$3,014
Groundwater sampling for 1 event - Includes collection of field parameters		4	well	$ -	$ -	$ 255.00	$ 1,020	$ 183	$ 731	$ -	$1,751
Analytical- MNA parameters		4	well							$ 131.00	$524
Site Preparation											
Survey/Boundaries & Markers	*17123131100*	1	day	$ -	$ -		$ -		$ -	$ 1,243.38	$1,243
Topographic Survey	*22113090020*	1.6	acre	$ -	$ -	$ -	$ -	$ -	$ -	$ 617.32	$988
Utility Locator (based on recent bids)	*recent quote*	1.0	day	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,465	$2,465
Work Plan Preparation (Including QAPP, FAP and HASP)		1.0	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$15,000
Erosion & Sediment Control Plan		1	ls	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,000	$15,000
Monitoring Well Abandonment	*recent quote- EnviroTrac*	39	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 22	$858
Silt Fence	*312514161000*	725	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 0.97	$703
Stockpile and Staging Area 100 x 100- liner and sand	*recent quote- The Environmental Service Group*	10,000	SF	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.56	$15,600
Decontamination Pad 50 x 100	*recent quote- The Environmental Service Group*	5,000	SF	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.56	$7,800
Temporary road, gravel fill, 4" depth, excl su	*15523500050*	556	SY	$ -	$ -	$ -	$ -	$ -	$ -	$ 9.27	$5,150
Excavation											
Community Air Monitoring (Dust)	*recent quote - Pine Environmental*	1	mo	$ -	$ -	$ 1,700.00	$ 1,700	$ 3,420	$ 3,420	$ -	$5,120
Hauling, light, dust control	*312323202500*	20	day	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,121.19	$22,424
Soil-Excavator, hydraulic, crawler mtd. 3.5 C	*312316425500*	3,689	bcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.49	$5,496
34CY off-road 20min. Wait 2,000ft cycle	*312323206300*	4,796	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 4.19	$20,093
Maintain Stockpile, 700HP Dozer, 50ft Haul	*312316466010*	3,689	bcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 2.04	$7,525
Excavator Loadout, add 15% for loading	*312316425500*	3,689	bcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.71	$6,321
Topographic Survey	*22113090020*	0.50	acre	$ -	$ -	$ -	$ -	$ -	$ -	$ 617.32	$309
Confirmation Sampling											
Grab Samples- 1 per 900 square feet, 1 per 30 lf along side walls pl		108	sample	$ -	$ 50	$ 21.25	$ 2,295	$ -	$ -	$ -	$2,345
Lab Analyses - TAL Metals, VOCs, SVOCs, and PCBs	*Life Science Laboratories*	108	sample	$ -	$ -	$ -	$ -	$ -	$ -	$336.00	$36,288
Decontamination Water Samples		10	sample	$ -	$ -	$ -	$ -	$ 50	$ 500	$ -	$500
Decon Water Lab Analyses - Metals, VOCs, SVOCs	*Life Science Laboratories*	10	sample	$ -	$ -		$ -	$ -	$ -	$336.00	$3,360
Hazardous Soil Disposal											
Soil Characterization Sampling (1 sample pe	*Life Science laboratories*	3	sample	$ -	$ -	$ -	$ -	$ -	$ -	$620	$1,860
Hazardous Soil Transportation and Disposal, includes labor and equipment	*Recent quote- Mayer, 3% per year inflation*	2,066	ton	$ -	$ -	$ -	$ -	$ -	$ -	$ 309.53	$639,412
Non-Hazardous Soil Disposal											
Soil Characterization Sampling (1 sample pe	*Life Science laboratories*	5	sample	$ -	$ -	$ -	$ -	$ -	$ -	$65	$323
Soil transportation and disposal, includes lab	*Recent quote- Mayer, 3% per year inflation*	3,836	ton	$ -	$ -	$ -	$ -	$ -	$ -	$ 105.49	$404,722
ORC Reagent Application											
Additional Excavation for application- 20'x2	*312316425500*	74	bcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.49	$110
ORC Reagent- includes tax and shipping (15%)	*Recent quote- Regenesis*	330	lb	$ -	$ -	$ -	$ -	$ -	$ -	$ 10.45	$3,450
Site Restoration											
Supply and Transportation of NYS Certified Clean Back Fill Material	*Recent quote- Carver*	4,268	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 20.90	$89,201
Backfill 300HP Dozer, 150' haul	*312323145220*	4,268	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.47	$6,274
Fine grading, small irregular areas	*312216101050*	2,433	sy	$ -	$ -	$ -	$ -	$ -	$ -	$ 3.05	$7,422
Compacting backfill, 12" lift, 2 passes w/ dru	*312323235060*	3,283	ecy	$ -	$ -	$ -	$ -	$ -	$ -	$ 0.45	$1,477
Topsoil	*Recent quote- Carver*	528	lcy	$ -	$ -	$ -	$ -	$ -	$ -	$ 46	$24,288
Fine grading, small irregular areas	*312216101050*	2,433	sy	$ -	$ -	$ -	$ -	$ -	$ -	$ 3.05	$7,422
Utility mix, 7#/M.S.F., Hydro or air seeding,	*329219145400*	53.85	msf	$ -	$ -	$ -	$ -	$ -	$ -	$ 92.32	$4,971
area, 3/4", 6-in deep	*321123230100*	17	sy		$ -		$ -		$ -	$ 8.33	$139
Monitoring Well Installation	*recent quote- EnviroTrac*	39	lf	$ -	$ -	$ -	$ -	$ -	$ -	$ 94	$3,666
Monitoring Well Development	*recent quote - Pohatcong*	9	hour	$ -	$ -	$ -	$ -	$ -	$ -	$ 200	$1,800
Topographic Survey	*02 21 23 09 0020*	3	acre	$ 20.94	$ 52	$ 597.77	$ 1,494	$ 23	$ 58		$1,605
Environmental Easement											
Legal		1	ls							$ 15,000	$15,000
Surveyor - Monument Installation		1	ls							$ 10,000	$10,000
Mobilization and Demobilization											**$69,887**
5%	of Total Costs of Site Work									$1,397,731	$69,887
Contingency											**$128,979**
10%	of Total Construction Activities									$1,289,791	$128,979.11
Professional/Technical Services											**$237,614**
5%	Project Management									$1,397,731	$69,886.56
6%	Remedial Design										$83,863.87
6%	Construction Management										$83,863.87

TECHNOLOGY	LOCATION	MEDIA	Estimated Cost to Implement	$1,975,977	
Alternative 4 **Hot Spot Excavation, Enhanced Aerobic Bioremediation for Groundwater and Institutional Controls**	**B. Millens Scrapyard Site** **Kingston, NY**	**Soil**	**Construction Time:**	**3**	**months**
			Operation Time:	**-**	**months**
			Post Remediation Monitoring	**30**	**years**

LONG TERM MONITORING

ANNUAL LTM COST (YR 1)	**$28,904**
ANNUAL LTM COST (YRS 2-30)	**$7,226**
LIFETIME LTM (NPV)	**$130,057**

Monitoring, Sampling, Testing and Analysis (Per Event)											
											$7,226
Site Monitoring											
Groundwater sampling for 1 event - Includes collecti	11	well	$ -	$ -	$ -	$ -	$ 66	$ 731	$ -		$731
Materials *Engineer's Estimate*	1	event	$ 50.00	$ 50	$ -	$ -	$ -	$ -	$ -		$50
Mobilization/Demobilization of Field Sampling Crew	1	event	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,714		$1,714
Reporting	10	hr	$ 85.00	$ 850	$ -	$ -	$ -	$ -	$ -		$850
Laboratory analysis											
Metals VOCs, SVOCs, plus 20% QA/QC *Life Science Laboratories*	13	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 277		$3,656
Sample shipping	3	ea	$ -	$ -	$ -	$ -	$ -	$ -	$ 75		$225
Lifetime Long Term Monitoring (Net Present Value)											
1 Years of Quarterly Monitoring											
29 Years of Annual Monitoring											
5% Discount Factor (per NYSDEC)											

TOTAL ESTIMATED NPV TECHNOLOGY COST (Capital + Lifetime O&M + Post Remediation Monitoring) **$1,975,977**

Assumptions:

Characterization Sampling

Analytical cost TCLP **$620** each

add for QA/QC samples

Estimated number of confirmation samples

24 bottom samples **20%** 30
65 sidewall samples 78
Total confirmation samples **108.00**

Confirmation Cost Table A (per CWM) **$593.48** per sample
Analytical cost TAL Metals+Hg **$84.00** per sample
VOCs **$64.00**
SVOCs **$129.00**
PCBs **$59.00**
For each sampling event, assumed: **$50** for materials (gloves, notebooks, etc.)

0.25 hrs/sample **$85** Cost per hr
1 worker sampling
Labor

Decon Water Samples

Metals **$84.00**
VOCs **$64.00**
SVOCs **$129.00**
PCBs **$59.00**

Disposal

1.6 tons per CY **22** tons per load
Vol Haz (CY) **1,291** **2,066** tons soil for haz disposal **94** loads for haz disposal
Vol Non Haz (CY) **2,398** **3,836** tons soil for non-haz disposal **174** loads for non-haz disposal
Total excavation **3,689** **5,902**

10 hrs

Excavation Assumptions (Refer to figure)

Non-Haz

Ex ID	Depth (ft)	Area (SF)	Volume (CY)	erimeter (ft)
EX-1	6	400	89	80
EX-2	4	4500	667	380
EX-3	3	1600	178	50
EX-4	5	1200	222	120
EX-5	3	1400	156	110
EX-6	6	1200	267	110
EX-7	8	900	267	90
EX-8	7	300	78	70
EX-9	6	1600	356	140
EX-10	5	900	167	80
EX-11	5	1600	296	170
EX-12	5	1200	222	140
EX-13	3	1450	161	80
EX-14	5	2150	398	200
EX-15	3	1500	167	120
		21900	3689	

*Haz volume estimated

25 loads per day
20 working days per month
10 hours per working day
2 months for site prep/restoration
1 months for disposal

Site Restoration loose
Clean Fill 3283 4268 LCY
Topsoil 406 528 LCY
Seed* 53850 SF
*Assume most of site will be disturbed

Groundwater Sampling **11** MWs

Analytical cost
TAL Metals **$84.00** per sample
SVOCs **$129.00** per sample
VOCs **$64.00** per sample
TOC **$21.00** per sample
Nitrate **$11.00** per sample
Chloride, Sulfate **$23.00** per sample
Sulfide **$12.00** per sample
For each sampling event, assumed: **$50** for materials (gloves, notebooks, etc.)

Typical Rental Rates - Includes G&A and 10% Profit

Mini-Rae Survey Mode PID **$96.08** per day
Horiba U-10 Water Quality Meter **$73.77** per day
Submersible Pump **$42.16** per day
2 in Pump Control Box **$72.27** per day
Generator: 110 V **$57.24** per day
Level D PPE **$23.82** per day

workers per event **2**
hours travel per event **6**

Notes

sy	square yard	mo	month
cy	cubic yard	ls	lump sum
lcy	loose cubic yard	O&M	Operation and maintenance
bcy	bank cubic yard	H&S	Health and Safety
lf	linear feet		
sf	square feet		
msf	1,000 square feet		

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