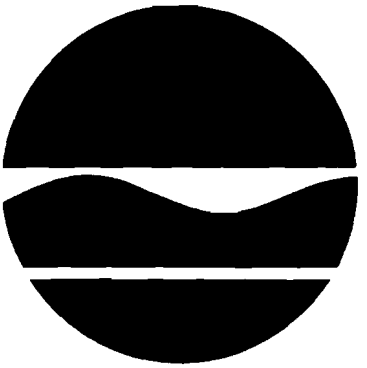
SITE CHARACTERIZATION REPORT

H. M. Quackenbush Facility

Site No. 6-22-024



220 North Prospect Street
Village of Herkimer
Herkimer County, New York

October 2010

Prepared by:
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Division of Environmental Remediation

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SECTION 1: INTRODUCTION

A Site Characterization was performed by the New York State Department of Environmental Conservation (Department) in June through August 2008 at the site referred to as the H. M. Quackenbush Site (Site) located at 220 North Prospect Street in the Village of Herkimer, Herkimer County, New York. The goal of the Site Characterization was twofold: (1) to supplement the United States Environmental Protection Agency (USEPA) site investigation performed in 2006 and further characterize the entire site beyond the footprint of the facility buildings; and (2) to obtain enough information to determine if the Site meets the definition of a hazardous waste site by confirming or denying the presence of hazardous waste and determining whether or not the Site poses a significant threat to human health or the environment. Until 2005, manufacturing operations (predominantly metal plating) were conducted at the Site dating back to the 1860s. The Site is inactive and is currently tracked as a Potential Registry, or "P", site (Site No. 6-22-024).

The work was completed by the Department and its contractors OP-TECH Environmental Services, Inc. (OP-TECH) and Upstate Laboratories, Inc (Upstate), and OP-TECH's subcontractors, Northeastern Environmental Technologies Corp. (NETC), Susan M. Anacker, Professional Land Surveyor (Anacker), and Adirondack Environmental Services, Inc. (Adirondack). The work was conducted, with minor adjustments approved by the Department, in accordance with the *Site Characterization Work Plan* (Work Plan) dated May 2008, developed by the Department.

Section 1.1 Background

The H.M. Quackenbush Site (Site) is an industrial site located in an area of mixed commercial and residential properties in the Village of Herkimer, Herkimer County, New York. The Quackenbush Facility occupies an area of approximately 1.5 acres in the middle of the Village of Herkimer, between North Prospect Street and North Main Street, approximately 300 feet north of Park Avenue (see **Figure 0**). The Site features at least three vacant industrial buildings and paved parking areas. The site is surrounded on all sides by commercial and residential properties.

There are no surface water bodies either on or near the site property. The closest water bodies are the West Canada Creek, located approximately 1/2-mile east of the site, and the Mohawk River, located approximately 3/4-mile south of the site. In the past, both water and sewer were supplied by the Village of Herkimer. The three stormwater drainage basins located on-site are reportedly tied into the combined stormwater/sewer system that currently services the Village of Herkimer.

The facility operated from the 1860s to 2005. The former plating operation consisted of over ten plating lines located in various areas throughout the facility. Each line contained between ten and twenty vats, each of which held between 100 and 300 gallons of acids, caustics,

plating materials, cyanides and other metal treatments.

Thousands of gallons of plating waste including acids, corrosives, metal waste, cyanide, solvents, wastewater chemicals and sludges (F006, F007, F008, and F009 wastes) were left when the former operator filed for bankruptcy in 2005. Hundreds of containers ranging from small lab bottles to 55-gallon drums were throughout the facility and an on-site lab contained hundreds of chemicals all stored together. In addition, approximately 50 one-cubic-yard bags of dried sludges from the wastewater treatment plant were found stored on-site. In August 2005 the Department inspected the facility. After a request from the Department, the USEPA inspected the facility and determined that a removal action was warranted under the provisions of CERCLA. The USEPA subsequently assumed control of the site and conducted an emergency removal to stabilize and dispose of all hazardous materials that threatened human health or the environment. In addition, site security measures were instituted to limit building access. The USEPA removal action was completed by the end of April 2006.

Concurrent with the removal action, the USEPA conducted a soil and groundwater sampling event at the site in February of 2006. The purpose of the sampling event was to (1) delineate the levels of contaminants present in the soil underneath and between the buildings, and (2) determine if the contaminants have reached the groundwater in the vicinity of the site. The USEPA subsurface investigation found primarily metals impacts (cadmium, chromium, copper, nickel and zinc) to the subsurface soils beneath the facility buildings, and some metals (cadmium, manganese and nickel) and pH (4 to 5 SU) impacts to the groundwater at the southwest corner of the site. The metals and pH impacts to the subsurface soil and groundwater are associated with the former plating operations on-site.

The Department currently has an open spill file (Spill No. 95-05909) associated with a leaking underground fuel oil storage tank (UST) on-site that was removed in 1995. As part of the 1995 USEPA removal action, five monitoring wells were installed in the vicinity of the former UST location on the south corner of the site (see **Figure 5**). Historically, two of the five monitoring wells that were installed as a result of the fuel oil spill have had free product, in the form of light non-aqueous phase liquid (LNAPL), in them.

Section 1.2 Site Geology / Hydrogeology

As part of the Department's investigation, the geology of the site was explored to a maximum depth of 24 feet. The investigation revealed that the geology varies somewhat from the north side (off North Main Street) to the south side of the site (off North Prospect Street). The soil boring program showed soils present on the north half of the Site consisting of an upper unit comprised of sand, trace silt, gravel, and some cobbles, extending to depths of 12 to 14 feet below ground surface (bgs). Beneath this upper unit lies a dense unit of gray clay with thin layers of fine sand and silt. This gray clay unit extends beyond the depths of the soil borings. The water bearing zone on the north portion of the Site exists on top of the interface between the upper unit and the underlying clay unit.

The soil boring program showed soils present on the south half of the Site consisting of a continuous unit comprised of sand, trace silt, gravel, and cobbles, extending the entire depth of the borehole. The water bearing zone on the south portion of the Site varies in depth from approximately 14.5 to 19 feet bgs.

Historically, since the late 1980's, groundwater flow across the Site has been reported in various directions including south, southeast, east, west, southwest and north. With the installation of eight additional monitoring wells across the Site during this site characterization investigation, a clearer understanding of groundwater flow across the entire site has been achieved. Recent gauging efforts show groundwater flow across the Site in a westerly direction. Refer to the Groundwater Contour Map and gauging data shown on **Figure 3** in this report.

SECTION 2: SITE CHARACTERIZATION FIELD ACTIVITIES

The activities which comprised the site characterization performed at the Site included the following:

1. Subsurface utility location/clearance;
2. Ground penetrating radar (GPR) survey over designated portions of the Site;
3. Surveyed and developed base, topographic, and groundwater contour maps of the Site;
4. Implementation of the Community Air Monitoring Plan (CAMP);
5. Surface soil sampling;
6. Concrete floor surface sampling on building interiors;
7. Portable XRF sampling of building interior and exterior surfaces;
8. Gauged existing monitoring wells, measured LNAPL thicknesses, and removed LNAPL for disposal;
9. Implementation of a soil boring program which entailed the installation of 31 soil borings extending down to the groundwater table, approximately 20 feet below ground surface (bgs), for visual inspection and sampling at 4-foot intervals;
10. Implementation of a groundwater monitoring program which consisted of converting eight of the soil borings into 2-inch diameter monitoring wells. The newly-installed monitoring wells were developed, the seven existing on-site wells were redeveloped, and all of the wells were sampled.

Section 2.1 Ground Penetrating Radar Survey

The purpose of the GPR survey was to confirm or deny the existence of additional USTs that may have been present under paved and open areas of the Site. Any potential USTs may have been related to the former Quackenbush operations or a gas station that was previously located at the northeast end of the Site along North Main Street.

OP-TECH subcontracted the GPR survey activities to Northeastern Environmental Technologies Corp. (NETC). NETC personnel performed the GPR survey on June 17, 2008 over select areas of the Site, as shown on Figure 1 of NETC's GPR survey report, included in **Appendix A** of this report.

Section 2.2 LNAPL Measurement and Removal

The purpose of this task was to (1) gauge the existing monitoring wells on-site and adjacent to the Site (MW-1, 2, 3, 4 & 5 and DEC-1 & 2), as shown on **Figure 1 (Site Features)**; (2) measure the thickness of LNAPL (#6 fuel oil) that may have been present in any of these wells; (3) remove as much LNAPL as possible from the affected wells at regular intervals over the course of this supplemental site investigation; and (4) collect and dispose of any LNAPL properly. Historic information relating to the leaking fuel oil UST on-site that was removed in 1995 suggested the presence of measurable LNAPL in existing wells MW-1 and 3.

Upon investigation of the seven existing wells mentioned above, MW-1 and 3 were confirmed to still have a measurable layer of LNAPL on the groundwater surface. However, due to the highly viscous nature of the weathered fuel oil and the thickness of the LNAPL layer itself, an oil/water interface probe could not be utilized to measure the thickness of the LNAPL layer. In addition, a bailer could not be used to remove any of the accumulated LNAPL. Alternatively, oil absorbent pads were affixed to threaded lengths of 1-inch diameter PVC pipe, which was used to remove the LNAPL from these wells. Estimated thickness of LNAPL layers in MW-1 and 3 were six inches and four feet, respectively. LNAPL was removed from MW-1 and 3 on three other occasions over the course of this investigation, removing decreasing amounts each time.

All investigation-derived waste (IDW) generated during LNAPL removal activities was containerized for off-site disposal by OP-TECH. All IDW sent off-site for disposal was done so in a timely manner, and was transported by a hauler (OP-TECH) licensed in accordance with 6 NYCRR Part 364 to a properly permitted disposal facility. All IDW disposal documentation is contained in **Appendix E**.

Section 2.3 Surface Soil Sample Collection

Surface soil samples were collected to evaluate potential exposures to contaminants existing in the surface soils on-site. Nine surface soil samples were obtained from various locations throughout the Site. All surface soil sampling locations are shown on **Figure 2 (Site Plan/Topographic Contour Map)**. Actual surface soil sampling locations were determined in the field by Department personnel based on site conditions.

Surface soil samples were collected at various locations on-site at a depth of 0 to 2 inches below the ground surface. The vegetative cover and/or other organic material were removed

from each sample location prior to sampling. The surface soil samples were obtained using a small sampling trowel and stainless steel bowl. The sampling tools were cleaned of all foreign matter and decontaminated between samples.

Recovered samples requiring chemical analysis were placed in the appropriate containers and the containers were clearly labeled with all categories/parameters. All samples were stored in coolers on ice until pick-up by or delivery to the Department-contract laboratory under appropriate chain-of-custody. Copies of chain-of-custody documents are included in **Appendix F** of this report.

Surface soil samples were analyzed for the full TCL suite (VOCs, SVOCs, and Pesticides/ PCBs) and TAL suite (Metals and Cyanide) by NYSDEC July 2005 ASP methods as shown below:

1) TCL VOCs + TICs by EPA Method 8260B
2) TCL SVOCs + TICs by EPA Method 8270
3) TCL Pesticides/PCBs by EPA Methods 8081A/8082
4) TAL Metals (including Mercury) + Total Cyanide by EPA Methods 6010 and 9012

Analytical data has been presented as Category B deliverables packets, including Tentative Identified Compounds (TICs) for VOCs and SVOCs only, in **Appendix F** of this report.

Section 2.4 Concrete Floor Sample Collection

Samples were collected from the surface of the concrete floors in the various facility buildings to ascertain the contamination levels present on the various floor surfaces. Fifteen scabbled concrete surface samples were obtained from the concrete floors at various locations throughout the facility buildings. Concrete floor surface sample locations are shown on **Figure 2 (Site Plan/Topographic Contour Map)**. Actual sampling locations were determined in the field by Department personnel based on site conditions.

Concrete floor surface samples consisted of small chips to dust-sized particles taken from the upper one-quarter to one-half inch (approximate) of the floor surface. Each sample location was swept of all loose material prior to sampling and was of sufficient size in order to obtain the necessary sample quantity. The concrete floor samples were obtained using an electric heavy-duty hammer-drill outfitted with a waffle bit that was approximately three inches square, to effective scabble the concrete surface. The contact surface of the waffle bit used to generate the concrete sample was cleaned of all foreign matter and deconned between samples.

Recovered samples requiring chemical analysis were placed in the appropriate containers and the containers were clearly labeled with all categories/parameters. All samples were stored in coolers on ice until pick-up by or delivery to the Department-contract laboratory under

appropriate chain-of-custody. Copies of chain-of-custody documents are included in **Appendix F** of this report.

Concrete floor surface samples were analyzed for the full TAL suite [TAL Metals (including Mercury) and total Cyanide] by NYSDEC July 2005 ASP Methods. Analytical data has been presented as Category B deliverables packets in **Appendix F** of this report.

Section 2.5 Building Surface Metals Analysis Utilizing Portable XRF

Non-destructive testing of interior and exterior building surfaces throughout the Quackenbush facility was performed on June 23, 2008. This in-place testing was performed using an Innov-X Systems XT-400 Environmental Metals Analyzer, which utilizes x-ray fluorescence (XRF) technology, to measure the concentrations of various metals (22) that were present on the building surfaces. Approximately 70 XRF readings were collected to evaluate potential exposures to metals contaminants existing on the building surfaces. XRF sample locations are shown on **Figure 4**.

In addition, two paint chip samples were collected for laboratory analysis on July 16, 2008 from the Chemical Storage Area "A" Building (red barn structure) and analyzed for lead. Paint chip sample PS-1 was collected from the paint chips that were collecting on the concrete ramp adjacent to the sidewalk on the east side of North Prospect Street. Paint chip sample PS-2 was collected from the paint that was peeling off the west corner of the Chemical Storage Area "A" Building (red barn structure) exterior and analyzed for lead.

Recovered samples requiring chemical analysis were placed in the appropriate containers and the containers were clearly labeled with all categories/parameters. All samples were stored in coolers on ice until pick-up by or delivery to the Department-contract laboratory under appropriate chain-of-custody. Copies of chain-of-custody documents are included in **Appendix F** of this report.

The paint chip samples were analyzed for total Lead only by NYSDEC July 2005 ASP Methods. Analytical data has been presented as Category B deliverables packets in **Appendix F** of this report.

Section 2.6 Soil Boring Installation & Soil Sample Collection

The purpose of this boring program was to:

1. Qualitatively characterize the soil stratigraphy, including identifying potential confining layers that may control migration of Contaminants of Concern (COCs), and

2. Determine whether COCs exist in the subsurface soil and groundwater.

The UFPO was contacted by OP-TECH and all known utilities were marked out prior to commencement of intrusive activities. Compliance with the NYSDOH Community Air Monitoring Plan (CAMP) was maintained during all intrusive activities with a photoionization detector (PID) and a particulate monitor. Daily field logs for the CAMP are contained in **Appendix D**. An exclusion zone was established at each boring location using tape, cones, trucks, or other means. Plastic sheeting was spread on the ground and/or under work areas to prevent spillage of boring spoils.

Direct push (geoprobe) techniques were utilized to install the soil borings, using a track-mounted geoprobe rig (Geoprobe 6620 DT). The geoprobe rig was equipped with 4-foot length barrel-style sampler fitted with acetate liners for sampling purposes. The direct-push steels and the sampler were cleaned of all foreign matter, washed with a detergent, rinsed properly with water, and otherwise decontaminated prior to insertion into a new soil boring location. All wash and rinse waters utilized for decontamination purposes were contained in five-gallon buckets during decon procedures. Decon water was collected in 55-gallon drums for later disposal.

Thirty-one soil borings were installed at various locations on-site, including inside and between the Quackenbush facility buildings. Eight of these 31 soil borings were converted into monitoring wells. Six soil borings were progressed through the concrete floor of the warehouse and Chemical Storage Area "C" inside the Quackenbush facility buildings. Soil borings were advanced 20 to 24 feet bgs to the groundwater table, in four-foot intervals, for visual characterization and sample collection. A coring drill and bit was utilized to core through the concrete floors prior to installing the soil borings in the buildings. Access to the building interiors for the soil boring equipment was gained through the loading dock of the warehouse. The boring locations were marked-out in the field by Department personnel based on site conditions. All soil boring locations are shown on **Figure 2 (Site Plan/ Topographic Contour Map)**.

Soil samples were collected in four-foot intervals and visually classified by an experienced geologist provided by OP-TECH. All sample intervals were inspected, logged, and screened with a PID. Headspace screening samples were collected from those intervals selected for laboratory analysis to field screen for the presence of volatile organic compounds (VOCs). All soil boring logs are included in **Appendix B**. The PID was used to monitor any vapors emitted from the borehole and from each sample as soon as the acetate sample liner is opened. Digital photographs were taken of visually contaminated samples, as well other physical characteristics that may be of future interest, prior to disturbing them.

Soil boring/drill spoils that appeared to be clean (i.e., no visual contamination or presence of contamination-related odors) were used to backfill the borehole from which they were removed. Otherwise, all excess spoils and spoils that appeared to be contaminated were containerized for off-site disposal in 55-gallon drums. All borings where the spoils were containerized for disposal were filled to grade with bentonite and restored to original surface

material (i.e., topsoil & seed, gravel, concrete, or asphalt).

Soil samples were collected at 4-foot intervals per sample location. Soil boring samples were designated SB-(sample location)(sample depth interval); (e.g., SB-2A, SB-2B, SB-2C, etc.). Sample depth intervals A, B, C, D, E, and F correspond to 0 to 4 feet bgs, 4 to 8 feet bgs, 8 to 12 feet bgs, 12 to 16 feet bgs, 16 to 20 feet bgs, and 20 to 24 feet bgs, respectively. If visual signs of contamination and/or elevated levels of VOCs (via PID) were detected, soil samples were then collected from the zone of highest contamination in that particular sample interval as determined by field observations. If no visible signs or PID-indications of contamination were detected, analytical samples were collected from the mid-portion of the sample interval or the groundwater interface.

Recovered samples requiring chemical analysis were placed in the appropriate containers, and the containers were clearly labeled with all categories/parameters. All samples were stored in coolers on ice until pick-up by the laboratory under appropriate chain-of-custody. Copies of chain-of-custody documents are included in **Appendix F** of this report.

Soil samples were analyzed for the full Target Compound List (TCL) suite (VOCs, SVOCs and Pesticides/PCBs) and Target Analyte List (TAL) suite (Metals and Cyanide) by NYSDEC July 2005 Analytical Services Protocol (ASP) methods at the intervals as shown below:

1) TCL VOCs + TICs by EPA Method 8260B sampled at the groundwater interface and at any visual signs or PID-indications of contamination;
2) TCL SVOCs + TICs by EPA Method 8270 sampled at the groundwater interface, and at any visual signs or PID-indications of contamination;
3) TCL Pesticides/PCBs by EPA Methods 8081A/8082 sampled at the groundwater interface, and at any visual signs or PID-indications of contamination; and
4) TAL Metals (including Mercury) + Total Cyanide by EPA Methods 6010 and 9012 sampled at every four-foot interval.

Analytical data has been presented as Category B deliverables packets, including Tentative Identified Compounds (TICs) for VOCs and SVOCs only, in **Appendix F** of this report.

Section 2.7 Monitoring Well Installation & Development

Eight of the soil borings installed were converted into 2-inch diameter monitoring wells. Department personnel determined which borings were converted to monitoring wells based on field observations. Soil borings SB-1, 2, 3, 4, 10, 14, 24 and 27 were converted into monitoring wells MW-6, 7, 8, 9, 10, 11, 13 and 12, respectively. The monitoring well locations are shown on **Figure 2 (Site Plan/ Topographic Contour Map)**.

The monitoring wells were installed using the track-mounted geoprobe rig (Geoprobe 6620 DT). They were advanced using 4.25-inch inside diameter (ID) hollow-stem augers to a maximum depth of approximately 25 feet bgs under the supervision of OP-TECH's geologist. No sampling was performed during installation of the monitoring wells since these locations were already sampled under the soil boring program. The well screens were installed to intersect the water table to yield accurate measurements of potential LNAPL while allowing a sufficient screened interval to accommodate seasonal fluctuations of the water table. The wells were constructed with 10 feet of 2-inch diameter flush-threaded Schedule 40 PVC well screen (machine slot 0.010-inch) and 2-inch diameter flush-threaded Schedule 40 PVC casing from the top of the screen to grade. The sand pack extended a minimum 1-foot beneath the base of the well screen up to a minimum of 2 feet above the well screen. A minimum 3-foot granulated bentonite seal was placed above the sand pack and hydrated. Following hydration of the bentonite seal, clean spoils generated during drilling activities were utilized as backfill up to the elevation where the well was completed.

Three of the monitoring wells (MW-6, 7, and 8) were completed with a PVC riser pipe that extend approximately three feet above grade, have vent holes drilled near the top, and are equipped with a hand-tightening expandable caps. A protective steel casing equipped with a locking cap has been installed around the riser pipe of each of the three wells and extend at least one foot below grade. A concrete surface seal (pad) approximately 3-foot by 3-foot in size has been constructed around each protective casing flush with the ground surface. The remaining five monitoring wells (MW-9, 10, 11, 12, and 13) were completed at grade as flush-mounted wells located in steel road boxes and equipped with expandable watertight caps. The monitoring well construction details/logs are contained in **Appendix B**.

All drill spoils that appeared to be clean (i.e., no visual contamination or presence of contamination-related odors) were used to backfill the borehole from which they were removed. Otherwise, all excess drill spoils and spoils that appeared to be contaminated were containerized in 55-gallon drums for off-site disposal at a properly permitted treatment, storage, or disposal facility.

Compliance with the NYSDOH Community Air Monitoring Plan (CAMP) was maintained during all intrusive activities with a photoionization detector (PID) and a particulate monitor. Daily field logs for the CAMP are contained in **Appendix D**. An exclusion zone was established at each monitoring well location using tape, cones, trucks, or other means. Plastic sheeting was spread on the ground and/or under work areas to prevent spillage of drilling spoils.

A decontamination pad was constructed in front of the loading dock by OP-TECH for the drilling phase of this investigation. The hollow stem augers were cleaned of all foreign matter, washed with a detergent, rinsed properly with water, and otherwise decontaminated prior to use at the next well location.

The newly installed monitoring wells were developed with disposable bailers to remove sediment from the well screen and sand pack. Groundwater elevation readings were taken from

each well before and after development. Efforts were made to develop the well until the water had cleared, with a turbidity of less than 50 NTU's. In addition, seven existing monitoring wells MW-1, 2, 3, 4, and 5, and DEC-1, and 2) located on and adjacent to the site were redeveloped to remove sediment and obstructions from the well screens and sand packs. Water generated during well development and redevelopment was containerized for off-site disposal by OP-TECH at a properly permitted treatment or disposal facility.

Section 2.8 Groundwater Sampling

The monitoring wells were gauged and purged on July 29, 2008. Groundwater sampling did not occur for at least 10 days after development of the newly-installed wells and redevelopment of the existing wells. Prior to purging and sampling any well, the static groundwater elevation at each well was measured from the top of casing using an oil/water interface probe. All LNAPL was removed from MW-3 before it was purged. Each well was purged by removing a minimum of three well volumes, with the exception of MW-1, MW-4, and DEC-2. MW-1 was dry. MW-4 and DEC-2 did not produce enough groundwater to purge the minimum three well volumes. Wells that produced poorly were purged dry and allowed to recover 24 hours before sampling.

Groundwater sampling was performed on July 29 and 30, 2008. Field parameters (temperature, pH, dissolved oxygen, ORP, and turbidity) were measured using a Horiba Model W-2100 Flow-Thru Cell and were allowed to stabilize prior to sampling each well. A "Geopump" peristaltic pump was utilized to draw water out of each well, into the flow-thru cell to monitor parameters, and then into a 5-gallon bucket for collection. The flow-thru cell was decontaminated between wells. In addition, the polyethylene tubing used with the peristaltic pump was changed out between wells. Water generated during the groundwater sampling activities was containerized for off-site disposal by OP-TECH at a properly permitted treatment or disposal facility.

MW-1 was not sampled since it was dry. Due to the presence of LNAPL in the groundwater in MW-3, field parameters were not measured. MW-4 produced only enough groundwater to collect a sample for VOCs analysis; no field parameters were measured. MW-9 had poor recovery during sampling, and therefore, not enough sample was available for SVOCs and Pesticides/PCBs analysis. DEC-2 only produced enough groundwater to sample for VOCs. The groundwater sampling field log is contained in **Appendix C** of this report.

Recovered samples requiring chemical analysis were placed in the appropriate containers, and the containers were clearly labeled with all categories/parameters. All samples were stored in coolers on ice until pick-up by the laboratory under appropriate chain-of-custody. Copies of chain-of-custody documents are included in **Appendix F** of this report.

Groundwater samples were filtered at the laboratory and analyzed for the full TCL suite (VOCs, SVOCs, and Pesticides/PCBs) and TAL suite (Metals and Cyanide) by NYSDEC July

2005 ASP methods as shown below:

1) TCL VOCs + TICs by EPA Method 8260B
2) TCL SVOCs + TICs by EPA Method 8270
3) TCL Pesticides/PCBs by EPA Methods 8081A/8082
4) TAL Metals (including Mercury) + Total Cyanide by EPA Methods 6010 and 9012

Analytical data has been presented as Category B deliverables packets including Tentative Identified Compounds (TICs) for VOCs and SVOCs only, in **Appendix F** of this report.

Section 2.9 Site Survey

Concurrent with the field investigation activities, a base map of the Site and immediate vicinity was developed. OP-TECH's subcontractor (Anacker) performed a boundary survey of the site property. All relevant features of the Site and adjacent area, including structures, roads, fences, underground utilities, fire hydrants, utility poles and existing monitoring wells were plotted. Elevations were referenced to a national vertical datum in USGS coordinates. Boundary coordinates were located and referenced to the State Plane Coordinate System. **Figure 1: Site Features** shows the previously-existing features of the Site.

After installation of the soil borings and monitoring wells, all boring and well locations were surveyed along with top-of-casing (TOC) elevations on the new and existing monitoring wells. The base map shown on **Figure 1** was used to accurately plot all soil boring, monitoring well, surface soil sampling and concrete floor surface sampling locations, as well as topographic contours of the Site. **Figure 2: Site Plan / Topographic Contour Map** shows the currently-existing features of the Site.

The base map shown on **Figure 1** was also used to develop a groundwater contour map of the Site. **Figure 3: Groundwater Contour Map** shows the monitoring wells and groundwater contours based on the gauging data generated on July 29, 2008 (see groundwater elevation data in table on **Figure 3**).

Section 2.10 Investigation-Derived Waste Management

All drill/boring spoils that appeared to be clean (i.e., no visual contamination or presence of contamination-related odors) were used to backfill the borehole from which they were removed. Otherwise, all excess drill/boring spoils and drill/boring spoils that appeared to be contaminated were containerized by OP-TECH in three 55-gallon drums (approximately 900 pounds) for off-site disposal at a properly permitted treatment, storage, or disposal facility.

Five 55-gallon drums (approximately 275 gallons) of wastewater was generated during

LNAPL removal activities, all decon activities, and well development, purging, and sampling activities. The wastewater was containerized by OP-TECH for off-site disposal at a properly permitted treatment or disposal facility. Additionally, all absorbent pads, PPE, and polyethylene sheeting generated during all site activities were containerized by OP-TECH in four 55-gallon drums (approximately 200 pounds) for off-site disposal at a properly permitted disposal facility.

All IDW was generated between June 17 and July 30, 2008, and was removed from the Site by OP-TECH on August 14, 2008. A copy of the bill of lading and disposal certificates are included in **Appendix E**.

SECTION 3: SITE CHARACTERIZATION RESULTS

The USEPA investigation conducted in 2006 analyzed subsurface soils for VOCs, base neutral acid extractables (BNAs), and inorganics (metals & cyanide). The USEPA investigation also analyzed groundwater samples collected from MW-2, 4, and 5 for BNAs and inorganics, only. Elevated levels of inorganics (metals) were identified in both the subsurface soils and the groundwater exceeding NYSDEC TAGM SCOs and water quality standards, respectively. Isolated and minor detections of VOCs were found in the subsurface soils, however, VOCs were not analyzed in the groundwater samples taken. Isolated detections of BNAs were found in the subsurface soils, with few exceeding NYSDEC TAGM SCOs. The groundwater samples yielded only a couple of minor detections of BNAs, all below the NYSDEC water quality standards.

The USEPA investigation showed inorganics to be the primary contaminants of concern (COCs) in both the subsurface soils and the groundwater on-site, directly related to past uses of the site (metal plating). In addition, MW-1 and 3 were found to contain LNAPL and were not sampled. The open spill existing in the southeast corner of the site continued to collect LNAPL in the affected wells, but due to the highly viscous nature of the weathered #6 fuel oil the spill was deemed to have low mobility and posed little concern.

The Department's recent Site Characterization activities entailed a more comprehensive subsurface investigation, not just in the number of samples collected and analyzed, but also in the types of samples collected and sample analyses. In addition to the subsurface soil and groundwater samples, surface soil samples, concrete floor surface samples and XRF measurements on the building surfaces were collected. Analytical data was obtained during the Site Characterization for VOCs, SVOCs, PCBs/Pesticides, Metals (including Mercury) and total Cyanide.

Based on the Department's Site Characterization activities, metals in the soil and groundwater continue to be the primary COCs. LNAPL continues to accumulate in MW-1 and 3, and is now appearing in MW-2. To determine whether the soil and groundwater contain contamination at levels of concern, analytical data were compared to the following standards, criteria and guidance (SCGs):

- Groundwater SCGs are based on the Department's "Ambient Water Quality Standards and Guidance Values" (TOGS 1.1.1).

- Soil SCGs are based on the Department's Cleanup Objectives ("6 NYCRR Subpart 375-6 - Remedial Program Soil Cleanup Objectives (SCOs)"

- For purposes of comparison, building surface contamination was compared to previously-mentioned soil SCGs.

Section 3.1 Ground Penetrating Radar Survey

As stated in Section 2.1, the purpose of the GPR survey was to confirm or deny the existence of USTs that may be present under paved and open areas of the Site. Any potential USTs may have been related to the former Quackenbush operations or the former Sears Gas Station that was previously located at the northeast end of the Site along North Main Street.

The GPR survey identified several subsurface anomalies. However, the most-suspect anomaly was located in the area of the former gas station, is similar in size and shape of a UST, exists three to four feet below grade, and is approximately four to five feet in diameter. The presence of free-standing water did not allow for a determination of the approximate length.

The other near-surface anomalies identified appeared to correspond with known and unknown buried utility lines or site drainage infrastructure. Of particular note is a drainage structure located in the alcove off North Prospect Street (see **Figure 1, GPR Survey Map**, contained in **Appendix A** of this report). This drainage structure was initially thought to be tied into the combined sewer and stormwater drainage line. However, upon closer inspection of its construction, it was concluded to be a large dry well. The USEPA investigation conducted in 2006 sampled the sediments in this structure and found them to contain some of the highest metals concentrations found on the Site.

Section 3.2 Surface Soil Analytical Results

Nine surface soil samples were collected on June 17, 2008 from various locations throughout the Site, as shown on **Figure 2 (Site Plan/Topographic Contour Map)**. The surface soil samples were analyzed for the full TCL suite (VOCs, SVOCs, and Pesticides/ PCBs) and TAL suite (Metals and Cyanide) by NYSDEC July 2005 ASP methods. The surface soil sampling results are summarized in **Tables 1** through **4**.

Minor detections of acetone, methylene chloride, tetrachloroethene (PCE), and trichloroethene (TCE) were found in some of the surface soil samples (see **Table 1**). Acetone and methylene chloride are common laboratory contaminants. PCE and TCE were detected in

surface soil samples SS-1 and SS-2. These samples were collected from an area, between the facility buildings, that was utilized as an outdoor drying area for racks of parts coming off of the plating lines. VOC contaminant levels did not exceed the "Unrestricted Use" Soil Clean-Up Objectives (SCOs), and were well below the "Commercial Use" SCOs.

Low levels of several SVOCs were detected in some of the surface soil samples (see **Table 2**). Benzo(b)fluoranthene and indeno(1,2,3-cd)pyrene were detected in surface soil sample SS-6, at levels exceeding the "Unrestricted Use" SCOs, but still well below the "Commercial Use" SCOs. Surface soil sample SS-6 was collected from an area between the facility buildings and the sidewalk along North Prospect Street.

Numerous metals were detected at elevated levels in all of the surface soil samples collected (see **Table 3**). Chromium, copper, lead, nickel, selenium, silver, zinc, mercury, and cyanide were detected in several samples above the "Unrestricted Use" SCOs. Chromium, copper, lead, nickel, zinc, and cyanide were detected in samples SS-1, 2, 3, and 4 at levels exceeding the "Commercial Use" SCOs. Surface soil samples SS-1 through 4 were collected from the center courtyard area between the facility buildings, as shown on **Figure 2**.

The pesticide 4,4'-DDD was detected in surface soil samples SS-1 and 2 at levels exceeding the "Unrestricted Use" SCOs, but still well below the "Commercial Use" SCOs. No PCBs were detected in any of the surface soil samples. Refer to **Table 4**.

Section 3.3 Concrete Floor Surface Analytical Results

Fifteen concrete floor surface samples were collected from the facility building interiors on June 24 & 25, 2008 from various locations throughout the facility buildings, as shown on **Figure 2 (Site Plan/Topographic Contour Map)**. The concrete floor surface samples were analyzed for the full TAL suite [TAL Metals (including Mercury) and total Cyanide] by NYSDEC July 2005 ASP methods. The concrete floor surface sampling results are summarized in **Table 13**.

Numerous metals were detected at elevated levels in all of the concrete floor surface samples collected (see **Table 13**). As no standards or guidance values exist for the contamination of concrete, soil clean-up objectives were used as a basis for comparison. Cadmium, chromium, copper, lead, nickel, silver, zinc, mercury, and cyanide were detected in several samples above the "Unrestricted Use" SCOs. Cadmium, chromium, copper, nickel, zinc, mercury and cyanide were detected in one or more samples at levels exceeding the "Commercial Use" SCOs. Based on comparison to "Commercial Use" SCOs, the primary COCs relating to the concrete floor surfaces inside the buildings are cadmium, chromium, copper, nickel, and cyanide.

Section 3.4 Results of Building Surface Metals Analyses Utilizing Portable XRF

Sixty-six portable XRF readings were taken on various interior and exterior building surfaces throughout the Quackenbush facility buildings on June 23, 2008, as shown on **Figure 4 (XRF Building Surface Sampling Locations)**. The XRF was used to measure the concentrations of various metals (22) that are present on the building surfaces to evaluate potential exposures. The XRF sampling results are summarized on **Table 14**.

Numerous metals were detected at elevated levels in all of the XRF readings taken on the floor surfaces (sample locations 001 through 054). Cadmium, chromium, copper, lead, nickel, silver, zinc, arsenic, and mercury, were detected in numerous samples above the "Unrestricted Use" SCOs. Cadmium, chromium, copper, lead, nickel, zinc, mercury and arsenic were detected in six or more locations at levels exceeding the "Commercial Use" SCOs. Based on comparison to "Commercial Use" SCOs, the primary COCs relating to the various floor surfaces inside the buildings are cadmium, chromium, copper, nickel, and arsenic. The concrete floor sample results discussed previously confirm the validity of the in-place XRF measurements collected.

XRF readings were also collected on the upper floors and exterior walls of the Chemical Storage Area "A" Building, the wood structure on the south side of the Site adjacent to North Prospect Street. Several metals were detected at elevated levels in all of the XRF readings taken at these locations (sample locations 058 through 066). Cadmium, lead, zinc, and arsenic were detected in numerous samples above the "Unrestricted Use" SCOs. Cadmium, lead, and arsenic were detected in one or more locations at levels exceeding the "Commercial Use" SCOs. Based on comparison to "Commercial Use" SCOs, the primary COCs relating to the upper floor surfaces and exterior walls of Chemical Storage Area "A" are lead and arsenic.

Two paint chip samples were collected on July 16, 2008 from the Chemical Storage Area "A" Building (wood structure) and analyzed for total Lead only by NYSDEC July 2005 ASP Methods. Paint chip sample PS-1 was collected from the paint chips that were collecting on the concrete ramp adjacent to the sidewalk on the east side of North Prospect Street. Paint chip sample PS-2 was collected from the paint that was peeling off the west corner of the Chemical Storage Area "A" Building (red barn structure) exterior. Paint chip sample PS-1 yielded a lead concentration of 44,000 parts per million (ppm) lead (4.4%), confirming the presence of lead-based paint. Paint chip sample PS-2 yielded a lead concentration of 40,000 ppm lead (4.0%), also confirming the presence of lead-based paint.

Section 3.5 Soil Boring Analytical Results

Approximately 170 subsurface soil samples were collected at varying depths from 31 soil borings installed between June 19 and July 1, 2008 at various locations on and around the Site. Soil boring locations are shown on **Figure 2 (Site Plan/Topographic Contour Map)**. The soil samples were analyzed for the full TCL suite (VOCs, SVOCs, and Pesticides/ PCBs) and TAL suite (Metals and Cyanide) by NYSDEC July 2005 ASP methods. The soil sampling results are

summarized in **Tables 5** through **8**.

Numerous metals were detected at elevated levels in all of the soil borings(see **Table 5**). Arsenic, cadmium, chromium, copper, lead, manganese, nickel, selenium, silver, zinc, mercury, and cyanide were detected in many soil samples above the "Unrestricted Use" SCOs. Arsenic, cadmium, copper, lead, nickel, mercury and cyanide were detected in several soil samples at levels exceeding the "Commercial Use" SCOs. Soil Borings SB-14 through 16 and SB-21 through 31 contained the largest number of metals present in the subsurface soils. In particular, SB-16 (installed through the floor of the loading dock warehouse) contained the largest number and some of the highest concentrations of metals recorded during this investigation. Former wastewater treatment plant sludges are alleged to have been buried beneath the floor in the warehouse prior to its construction.

Elevated levels of acetone and methylene chloride were found in several of the soil samples, and slightly elevated levels of chloroform were also detected in some of the soil samples (see **Table 6**). Acetone, chloroform and methylene chloride are common laboratory contaminants. Trichloroethene (TCE) was detected in several soil samples with levels ranging from below quantitation limits to 21 parts per billion (ppb), well below both the "Unrestricted Use" and "Commercial Use" SCOs. Elevated levels of 1,3,5-trimethylbenzene, chlorobenzene, ethylbenzene, n-butylbenzene, n-propylbenzene, o-xylene, sec-butylbenzene and tert-butylbenzene were found in SB-22 and SB-28 through 31, below both the "Unrestricted Use" and "Commercial Use" SCOs. 1,2,4-Trimethylbenzene and m,p-xylene were also detected in SB-22 at levels exceeding the "Unrestricted Use" SCOs, but still well below the "Commercial Use" SCOs. Soil borings SB-22 and SB-28 through 31 were installed in the spill area located on the south side of the Site, adjacent to the Chemical Storage "A" Building and the Chimney Building. The VOC contamination present in these soil borings can be attributed to the petroleum product that is still present beneath the ground surface in this area of the Site.

Low levels of several SVOCs were detected in some of the soil boring samples (see **Table 7**). Bis(2-ethylhexyl)phthalate was detected in SB-1 and 2, SB-3 through SB-8, SB-10 and SB-27 below the quantitation limits. Bis(2-ethylhexyl)phthalate was detected at somewhat higher levels in SB-3 (approximately four feet bgs) and in SB-9, however, no "Unrestricted Use" or "Commercial Use" SCOs exists for this compound. Elevated detections of anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k) fluoranthene, butyl benzyl phthalate, chrysene, fluoranthene, indeno(1,2,3-cd)pyrene, phenanthrene and pyrene were detected in SB-3 (approximately four feet bgs) at levels below the "Unrestricted Use" SCOs, and well below the "Commercial Use" SCOs. One additional soil sample was collected from SB-3 at approximately four feet bgs based on measured PID readings. SB-20 was not sampled for SVOCs since refusal was encountered approximately five feet beneath the building slab.

No pesticides or PCBs were detected in any of the soil samples collected (see **Table 8**). SB-20 was not sampled since refusal was encountered five feet beneath the building slab.

Section 3.6 Groundwater Analytical Results

Groundwater samples were collected from fourteen monitoring wells (MW-2 through 13, and DEC-1 and 2) on July 29 and 30, 2008. Monitoring well locations are shown on **Figure 2 (Site Plan/Topographic Contour Map)**. MW-1 was dry on the day of sampling and was not sampled. The groundwater samples were filtered at the laboratory and analyzed for the full TCL suite (VOCs, SVOCs, and Pesticides/PCBs) and TAL suite (Metals and Cyanide) by NYSDEC July 2005 ASP methods. The groundwater analytical results are summarized in **Tables 9** through **12**.

Minor detections of VOCs (benzene, chlorobenzene, chloroform, m,p-xylene, o-xylene, and trichloroethene (TCE)) were found in some of the groundwater samples (see **Table 9**). Chloroform was present in several samples at low levels and is a common laboratory contaminant. Benzene and chlorobenzene were detected in MW-3 at levels slightly above NYSDEC ambient water quality standards. M,p-xylene, and o-xylene were also detected in MW-3 below quantitation limits. Chlorobenzene was detected in MW-2 below quantitation limits. TCE was detected in MW-11 at a level slightly above NYSDEC ambient water quality standards. TCE was also detected in MW-12 and 13 below quantitation limits.

Minor detections of SVOCs (bis(2-ethylhexyl)phthalate, di-n-butyl phthalate, and fluoranthene) were found in several of the groundwater samples (see **Table 10**). Due to poor recharge, MW-4 was not sampled for SVOCs. Bis(2-ethylhexyl)phthalate was detected in MW-2 and 9 at levels slightly above NYSDEC ambient water quality standards, and in MW-7, 10, 12, and 13 below quantitation limits. Di-n-butyl phthalate was detected in MW-9 and 13 below quantitation limits. Fluoranthene was also detected in MW-9 below quantitation limits.

Numerous metals were detected at elevated levels in all of the groundwater samples collected (see **Table 11**). MW-4 and DEC-2 were not sampled for metals due to poor recharge. MW-1 was not sampled since it was dry. Cadmium, iron, magnesium, manganese, nickel, silver, sodium, thallium, zinc, mercury, and cyanide were detected in several samples at levels above NYSDEC ambient water quality standards (TOGS 1.1.1 Guidance Values).

No pesticides or PCBs were detected in any of the groundwater samples collected (see **Table 12**). MW-4, MW-9, and DEC-2 were not sampled for pesticides/PCBs due to poor recharge. MW-1 was not sampled since it was dry.

Section 3.7 Approximate Areal Extent of Petroleum Spill Area

The approximate areal extent of the petroleum spill area is shown on **Figure 5**. This approximation is based on the subsurface conditions encountered during the course of this investigation (i.e., field observations, boring logs, analytical data, etc.). Petroleum product was encountered in soil borings SB-22 and SB-28 through 31 at depths ranging from 10 to 18 feet bgs. Petroleum product was encountered in monitoring wells MW-1, 2, and 3.

SECTION 4: SUMMARY

This Site Characterization was performed under the State Superfund Program. The goal of this Site Characterization was twofold: (1) to supplement the United States Environmental Protection Agency (USEPA) site investigation performed in 2006 and further characterize the entire site beyond the footprint of the facility buildings; and (2) to obtain enough information to determine if the Site meets the definition of a hazardous waste site by confirming or denying the presence of hazardous waste and determining whether or not the Site poses a significant threat to human health or the environment.

This site characterization investigation, in conjunction with the previous investigative work performed by the USEPA, has adequately characterized the Site. The emergency removal action performed by the USEPA removed the ongoing source of contamination at the Site. Subsurface contamination currently existing on-site pertains to the petroleum spill that exists in the southern portion of the Site and the residual metals contamination in the surface and subsurface soils.

Volatile and semi-volatile contamination in the groundwater is minor and predominantly associated with the petroleum spill area. No pesticides or PCBs were detected in the groundwater. Although elevated levels of some metals exceeding guidance values exist in the groundwater, there are no surface water bodies on or within one half mile of the Site and municipal water and sewer are supplied to the local community. Remediation of the petroleum spill will not only stop the ongoing spread of the petroleum contamination, but will also help to improve the condition of the groundwater in the affected portion of the site.

The majority of the metals contamination that exists in the surface and subsurface soils on-site are concentrated on the western half of the site off North Prospect Street, in the footprint of the original Quackenbush facility. The vast majority of the metals data showed that the contaminant levels are below the "Commercial Use" SCOs. While several exceedances of the "Commercial Use" SCOs were noted, most of the ground surface is covered either by the facility buildings or pavement. Therefore, the potential exposure to metals contamination is minimal.

Volatile and semi-volatile contamination in the surface and subsurface soils on-site is minor (often below the "Unrestricted Use" SCOs, as well as the "Commercial Use" SCOs) and that which exists is predominantly associated with the petroleum spill area. No pesticides or PCBs were detected in the subsurface soils.

This Site does not meet the definition of a hazardous waste site since hazardous wastes do not exist on-site, nor does it pose a significant threat to human health or the environment. Therefore, this Site does not qualify for placement on the Registry of Inactive Hazardous Waste Disposal Sites. Surface sampling results from the on-site building floors and walls indicate possible occupational exposures if the building were to be re-occupied. Therefore, measures must be put in place by any future owner/occupants to prevent potential exposures should the current on-site buildings be re-occupied (e.g., urethane sealing of affected walls/floors). In addition,

should any intrusive activity be contemplated in conjunction with future site use (e.g., building demolition, underground utility-work, etc.), appropriate precautions should be taken with regard to management and disposition of potentially-contaminated soils.

Although this Site does not meet the definition of a hazardous waste site, it will continue to remain a spill site. The petroleum-contaminated subsurface soil and groundwater indicates a potential for soil vapor intrusion associated with the site. Therefore, this potential pathway should be evaluated in the context of that remedial program.

SECTION 5: REFERENCES

1. "Site Characterization Work Plan: H. M. Quackenbush Facility", May 2008, prepared by the New York State Department of Environmental Conservation.

2. "Sampling Report for the H. M. Quackenbush Site, Village of Herkimer, New York, February 21-24, 2006," USEPA Superfund Contract Support Team, August 2006.

3. "Service Station Investigation Closure Report, Herkimer Site", Sears Oil Company, Inc., Rome, New York, April 1990, prepared by Blasland & Bouck Engineers, P.C..

4. "6 New York Codes, Rules and Regulation (NYCRR) Part 375", December 2006.

5. "NYSDEC Division of Water Technical and Operation Guidance Series (TOGS) 1.1.1 - Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations", June 1998.

Tables

Table 1
Surface Soil Analytical Results - Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	Field Duplicate
1,1,1-Trichloroethane	680	500,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,1,2,2-Tetrachloroethane			6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
1,1,2-Trichloroethane			6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
1,1-Dichloroethane	270	240,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,1-Dichloroethene	330	500,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,2,4-Trimethylbenzene	3,600	190,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
1,2-Dichlorobenzene	1,100	500,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
1,2-Dichloroethane	20	30,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,2-Dichloropropane			6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
1,3,5-Trimethylbenzene	8,400	190,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
1,3-Dichlorobenzene	2,400	280,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
1,4-Dichlorobenzene	1,800	130,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
1,4-Dioxane	100	130,000	120 U	120 U	140 U	120 U	120 U	130 U	120 U	120 U	120 U	120 U
2-Butanone	120		12 U	12 U	14 U	12 U	12 U	13 U	12 U	12 U	12 U	12 U
2-Hexanone			12 U	12 U	14 U	12 U	12 UJ	13 U	12 U	12 U	12 U	12 UJ
4-Methyl-2-pentanone			12 U	12 U	14 U	12 U	12 U	13 U	12 U	12 U	12 U	12 U
Acetone	50	500,000	12 U	12 U	20 U	10 U	12 U	13 U	12 U	12 U	12 U	12 U
Benzene	60	44,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Bromodichloromethane			6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Bromoform			6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
Bromomethane			6 U	6 UJ	7 U	6 UJ	6 UJ	6 U	6 UJ	6 UJ	6 U	6 UJ
Carbon Disulfide			6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Carbon Tetrachloride	760	22,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Chlorobenzene	1,100	500,000	6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
Chloroethane			6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Chloroform	370	350,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Chloromethane			6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
cis-1,2-Dichloroethene	250	500,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
cis-1,3-Dichloropropene			6 U	6 U	7 UJ	6 U	6 U	6 UJ	6 U	6 U	6 UJ	6 U
Dibromochloromethane			6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
Ethylbenzene	1,000	390,000	6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
m,p-Xylene	260	500,000	6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
Methyl tert-butyl ether	930	500,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
Methylene Chloride	50	500,000	6 U	2 J	7 U	2 J	6 U	6 U	6 U	6 U	6 U	6 U
n-Butylbenzene	12,000	500,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
n-Propylbenzene	3,900	500,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
o-Xylene	260	500,000	6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
sec-Butylbenzene	11,000	500,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
Styrene			6 UJ	6 UJ	7 UJ	2 J	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
tert-Butylbenzene	5,900	500,000	6 UJ	6 UJ	7 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 UJ	6 U	6 UJ
Tetrachloroethene	1,300	150,000	8	5 J	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
Toluene	700	500,000	6 U	6 U	7 U	6 U	6 UJ	6 U	6 U	6 U	6 U	6 UJ
trans-1,2-Dichloroethene	190	500,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U
trans-1,3-Dichloropropene			6 U	6 U	7 UJ	6 U	6 UJ	6 UJ	6 U	6 U	6 UJ	6 UJ
Trichloroethene	470	200,000	24	16	7 U	6 U	6 U	6 U	2 J	6 U	6 U	6 U
Vinyl chloride	20	13,000	6 U	6 U	7 U	6 U	6 U	6 U	6 U	6 U	6 U	6 U

Notes:

J or UJ = Analytical data considered usable estimation of the conditions being measured.

U = Compound was analzyed for, but not detected.

* = Guidance values in accordance with 6 NYCRR 375-6.8

All sample results reported in parts per billion (ppb).

Table 2
Surface Soil Analytical Results SVOCs
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	Field Duplicate
(3+4)-Methylphenol	330		2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
1,2,4,5-Tetrachlorobenzene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
1,2,4-Trichlorobenzene	3,600		2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
1,2-Dichlorobenzene	1,100	500,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
1,3-Dichlorobenzene	2,400	280,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
1,4-Dichlorobenzene	1,800	130,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2,4,5-Trichlorophenol			3,900 U	4,000 U	450 U	3,900 U	390 U	870 U	410 U	390 U	390 U	390 U
2,4,6-Trichlorophenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2,4-Dichlorophenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2,4-Dimethylphenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2,4-Dinitrophenol			3,900 U	4,000 U	450 U	3,900 U	390 U	870 U	410 U	390 U	390 U	390 U
2,4-Dinitrotoluene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2,6-Dinitrotoluene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2-Chloronaphthalene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2-Chlorophenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2-Methylnaphthalene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2-Methylphenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
2-Nitroaniline			3,900 U	4,000 U	450 U	3,900 U	390 U	870 U	410 U	390 U	390 U	390 U
2-Nitrophenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
3,3´-Dichlorobenzidine			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
3-Nitroaniline			3,900 U	4,000 U	450 U	3,900 U	390 U	870 U	410 U	390 U	390 U	390 U
4,6-Dinitro-2-methylphenol			3,900 U	4,000 U	450 U	3,900 U	390 UJ	870 U	410 UJ	390 U	390 U	390 U
4-Bromophenyl phenyl ether			2,000 U	2,000 U	230 U	1,900 U	190 UJ	430 U	210 UJ	190 U	190 U	190 U
4-Chloro-3-methylphenol			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
4-Chloroaniline			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
4-Chlorophenyl phenyl ether			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
4-Nitroaniline			3,900 U	4,000 U	450 U	3,900 U	390 U	870 U	410 U	390 U	390 U	390 U
4-Nitrophenol			3,900 U	4,000 U	450 U	3,900 U	390 U	870 U	410 U	390 U	390 U	390 U
Acenaphthene	20,000	500,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Acenaphthylene	100,000	500,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Acetophenone			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Anthracene	100,000	500,000	2,000 U	2,000 U	230 U	1,900 U	190 UJ	99 JD	210 UJ	190 U	190 U	190 U
Atrazine			2,000 U	2,000 U	230 UJ	1,900 U	190 U	430 U	210 U	190 UJ	190 UJ	190 UJ
Benz(a)anthracene	1,000	5,600	2,000 U	2,000 U	230 U	1,900 U	190 U	700 D	210 U	190 U	190 U	190 U
Benzaldehyde			1,400 J	570 J	230 UJ	550 J	190 UJ	430 UJ	210 UJ	190 UJ	190 UJ	190 UJ
Benzo(a)pyrene	1,000	1,000	2,000 U	2,000 U	89 J	1,900 U	74 J	670 D	71 J	150 J	79 J	78 J
Benzo(b)fluoranthene	1,000	5,600	2,000 U	2,000 U	160 J	1,900 U	130 J	**1,200 D**	130 J	260 J	120 J	140 J
Benzo(g,h,i)perylene	100,000	500,000	2,000 U	2,000 U	70 J	1,900 U	55 J	590 D	56 J	120 J	75 J	74 J
Benzo(k)fluoranthene	800	56,000	2,000 U	2,000 U	64 J	1,900 U	51 J	310 JD	52 J	90 J	55 J	50 J
Biphenyl			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Bis(2-chloroethoxy)methane			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Bis(2-chloroethyl)ether			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Bis(2-chloroisopropyl)ether			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Bis(2-ethylhexyl)phthalate			7,100 U	2,700 U	1,000 U	9,100 U	270 U	2,700 U	210 U	370 U	410 U	190 U
Butyl benzyl phthalate			2,000 U	2,000 U	230 U	1,900 U	190 U	150 J	210 U	190 U	190 U	190 U
Caprolactam			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Carbazole			2,000 U	2,000 U	230 U	1,900 U	190 UJ	430 U	210 UJ	190 U	190 U	190 U
Chrysene	1,000	56,000	2,000 U	2,000 U	120 J	1,900 U	100 J	860 D	120 J	180 J	97 J	120 J
Di-n-butyl phthalate			2,000 U	2,000 U	230 U	1,900 U	190 UJ	490 J	210 UJ	190 UJ	190 U	190 U
Di-n-octyl phthalate			2,000 U	2,000 U	230 U	550 J	190 U	430 U	210 U	190 UJ	190 U	190 U
Dibenz(a,h)anthracene	330	560	2,000 U	2,000 U	230 U	1,900 U	190 U	180 JD	210 U	190 UJ	190 U	190 U
Dibenzofuran			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Diethyl phthalate			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Dimethyl phthalate			2,000 U	2,000 U	230 U	2,900 J	190 U	430 U	210 U	190 U	190 U	190 U
Fluoranthene	100,000	500,000	2,000 U	2,000 U	130 J	1,900 U	150 J	910 D	110 J	210	140 J	96 J
Fluorene	30,000	500,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Hexachlorobenzene			2,000 U	2,000 U	230 U	1,900 U	190 UJ	430 U	210 UJ	190 U	190 U	190 U
Hexachlorobutadiene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Hexachlorocyclopentadiene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Hexachloroethane			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Indeno(1,2,3-cd)pyrene	500	5,600	2,000 U	2,000 U	81 J	1,900 U	67 J	**640 D**	65 J	120 J	62 J	65 J
Isophorone			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
N-Nitrosodi-n-propylamine			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
N-Nitrosodiphenylamine			2,000 U	2,000 U	230 U	1,900 U	190 UJ	430 U	210 UJ	190 U	190 U	190 U
Naphthalene	12,000	500,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Nitrobenzene			2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Pentachlorophenol	800	6,700	3,900 U	4,000 U	450 U	3,900 U	390 UJ	870 U	410 UJ	390 U	390 U	390 U
Phenanthrene	100,000	500,000	2,000 U	2,000 U	76 J	1,900 U	98 J	680 D	140 J	170 J	93 J	130 J
Phenol	330	500,000	2,000 U	2,000 U	230 U	1,900 U	190 U	430 U	210 U	190 U	190 U	190 U
Pyrene	100,000	500,000	2,000 U	2,000 U	200 J	1,900 U	200	1,700 D	210	490	210	230

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
J or UJ = Analytical data considered usable estimation of the conditions being measured.
U = Compound was analzyed for, but not detected
D = System monitoring compound diluted out.
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 3
Surface Soil Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	Field Duplicate
Aluminum			2470 J	2,570 J	2,920 J	5,540 J	6,230 J	6,080 J	7,080 J	9,220 J	8,230 J	6,300 J
Antimony			8.4 BJ	4.6 BJ	9.8 BJ	27.6 J	3.5 UJ	3.9 UJ	3.7 UJ	3.5 UJ	3.5 UJ	3.5 UJ
Arsenic	13	16	4.4	3	2.7 U	2.3 U	11.5	5.6	8.1	5.9	5.3	10.3
Barium	350	400	22.1 B	27.3 B	34.5 B	65.1	67.6	69.1	70.0	53.7	61.0	67.0
Beryllium	7.2	590	0.70 U	0.72 U	0.81 U	0.70 U	0.69 U	0.78 U	0.74 U	0.70 U	0.70 U	0.70 U
Cadmium	2.5	9.3	**680**	**728**	**3,770**	**51.7**	**19.2**	**30.4**	**22.1**	2.2	1.9	**14.7**
Calcium			43,700	41,300	95,300	148,000	37,400	19,200	45,800	16,400	5,350	38,600
Chromium	30	1,500	**428**	**663 J**	**7,110 J**	**497 J**	**84.7 J**	**65.6 J**	**36.3 J**	14.0 J	12.2 J	**58.2 J**
Cobalt			4.7 B	7.2 B	61.1	8.4 B	6.7 B	7.3 B	7.3 B	7.2 B	8.2 B	6.7 B
Copper	50	270	**29,400**	**12,800**	**5,400**	**1,420**	**106**	**201**	**87.5**	21.9	24.5	**74.8**
Iron			7,360 J	11,200 J	13,900 J	42,100 J	20,500 J	15,800 J	17,600 J	17,400 J	17,800 J	21,000 J
Lead	63	1,000	**1,280 J**	**685 J**	**1,050 J**	**316 J**	52.2 J	**314 J**	51.1 J	37.7 J	37.1 J	43.5 J
Magnesium			2,310 J	2,950 J	3,900 J	22,400 J	8,020 J	4,740 J	6,420	4,910	3,690	7,950
Manganese	1,600	10,000	115 J	115 J	186 J	391 J	391 J	505 J	502 J	410 J	476 J	403 J
Nickel	30	310	**1,080**	**2,320**	**11,800**	**805**	**114**	**279**	**109**	21.8	23.9	**69.4**
Potassium			718 B	674 B	417 B	1,910	1,500	795 B	1,570	1,460	1,380	1,700
Selenium	3.9	1,500	**4.8 J**	1.2 U	1.4 U	1.2 U	1.2 U	1.3 U	1.2 U	1.2 U	1.2 U	1.2 U
Silver	2	1,500	**34.1 J**	**38.4 J**	**193 J**	**100 J**	**7.8 J**	**5.3 J**	**3.8 J**	**77.3 J**	2.3 UJ	2.3 UJ
Sodium			3,360	1,620	4,960	233 U	250 B	260 U	247 U	233 U	232 U	233 U
Thallium			2.7	2.4 U	4.5	2.3 U	2.3 U	2.6 U	2.5 U	2.3 U	2.3 U	2.3 U
Vanadium			7.0 UJ	7.2 UJ	8.1 UJ	13.1 J	16.0 J	41.7 J	17.8 J	19.3 J	18.0 J	17.1 J
Zinc	109	10,000	**11,400 J**	**4,600 J**	**16,300 J**	**862 J**	**132 J**	**399 J**	**127**	73.0	70.0	98.2
Mercury	0.18	2.8	**1.6**	**1.1**	**1.8**	**0.58**	0.058 U	**0.38**	0.11	0.058 U	**0.27**	0.076
Cyanide	27	27	**46.7**	26.9	**40.8**	**35.1**	1.7	1.3 U	1.2 U	1.2 U	1.2 U	4.2
Percent Moisture			14.8	16.9	26	14.3	13.6	22.9	19	14.2	13.7	14.2

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
J, UJ and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
U = Compound was analyzed for, but not detected.
B = Analyte detected in the associated Method Blank.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per million (ppm).

Table 4
Surface Soil Analytical Results - Pesticides/PCBs
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SS-1	SS-2	SS-3	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	Field Duplicate
4,4´-DDD	3.3	92,000	**1,000 J**	**400 J**	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
4,4´-DDE	3.3	62,000	97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
4,4´-DDT	3.3	47,000	97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
Aldrin	5	680	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
alpha-BHC	20	3,400	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
alpha-Chlordane	94	24,000	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
Aroclor 1016	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
Aroclor 1221	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
Aroclor 1232	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
Aroclor 1242	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
Aroclor 1248	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
Aroclor 1254	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
Aroclor 1260	100	1,000	970 UJ	990 UJ	1,100 UJ	190 U	950 UJ	1,100 UJ	1,000 UJ	960 UJ	960 UJ	960 UJ
beta-BHC	36	3,000	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
delta-BHC	40	500,000	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
Dieldrin	5	1,400	97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
Endosulfan I	2,400	200,000	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
Endosulfan II	2,400	200,000	97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
Endosulfan sulfate	2,400	200,000	97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
Endrin	14	89,000	97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
Endrin aldehyde			97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
Endrin ketone			97 UJ	99 UJ	110 UJ	19 U	95 UJ	110 UJ	100 UJ	96 UJ	96 UJ	96 UJ
gamma-BHC (Lindane)	100		50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
gamma-Chlordane			50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
Heptachlor	42	15,000	50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
Heptachlor epoxide			50 UJ	51 UJ	57 UJ	9.9 U	49 UJ	55 UJ	52 UJ	50 UJ	49 UJ	50 UJ
Methoxychlor			500 UJ	510 UJ	570 UJ	99 U	490 UJ	550 UJ	520 UJ	500 UJ	490 UJ	500 UJ
Toxaphene			5,000 UJ	5,100 UJ	5,700 UJ	990 U	4,900 UJ	5,500 UJ	5,200 UJ	5,000 UJ	4,900 UJ	5,000 UJ

Notes:
BOLD values indicate compound detected above Unrestricted Use SCOs.
J or UJ = Analytical data considered usable estimation of the conditions being measured.
U = Compound was analyzed for, but not detected.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per billion (ppb).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-1A	SB-1B	SB-1C	SB-1D	SB-1E	SB-2A	SB-2B	SB-2C	SB-2D	SB-2E	SB-2F	SB-3A	SB-3B	SB-3C	SB-3D	SB-3E
Aluminum			5,550 J	2,280 J	3,590 J	3,000 J	3,430 J	5,580 J	6,940 J	1,940 J	2,680 J	3,590 J	3,210 J	8,500 J	6,650 J	3,140 J	5,400 J	2,750
Antimony			3.4 UJ	3.3 UJ	3.3 UJ	3.3 UJ	3.3 UJ	3.4 UJ	3.5 UJ	3.4 BJ	3.2 UJ	3.3 UJ	3.4 UJ	3.5 UJ	3.5 UJ	3.3 UJ	3.3 UJ	3.2 UJ
Arsenic	13	16	4.2 J	2.2 J	2.2 UJ	2.2 UJ	2.2 UJ	5.2 J	6.8 J	2.1 UJ	2.1 UJ	2.6 J	2.3 UJ	5.4 J	5.9 J	2.2 UJ	2.2 UJ	3.4
Barium	350	400	85.3 J	29.4 BJ	37.2 BJ	25.0 BJ	27.1 BJ	48.5 J	37.0 BJ	29.2 BJ	24.6 BJ	30.8 BJ	29.3 BJ	107 J	55.6 J	19.6 BJ	33.2 BJ	18.5 B
Beryllium	7.2	590	0.68 UJ	0.65 UJ	0.66 UJ	0.66 UJ	0.66 UJ	0.68 UJ	0.71 UJ	0.63 UJ	0.63 UJ	0.65 UJ	0.68 UJ	0.69 UJ	0.69 UJ	0.65 UJ	0.66 UJ	0.64 U
Cadmium	2.5	9.3	1.7 J	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	2.0 J	1.7 J	1.0 UJ	1.0 UJ	1.1 UJ	1.1 UJ	1.4 J	1.3 J	1.1 UJ	1.1 UJ	1.1 U
Calcium			28,100 J	140,000 J	143,000 J	116,000 J	69,100 J	11,900 J	6,440 J	181,000 J	144,000 J	113,000 J	146,000 J	8,420 J	8,990 J	28,000 J	161,000 J	151,000
Chromium	30	1500	8.9 J	4.0 J	7.5 J	5.5 J	6.0 J	9.7 J	9.3 J	5.0 J	6.4 J	7.3 J	7.6 J	10.2 J	9.4 J	3.9 J	8.7 J	6
Cobalt			6.5 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.6 UJ	7.2 BJ	4.2 UJ	4.2 UJ	4.4 UJ	4.6 UJ	7.9 BJ	4.9 BJ	4.4 UJ	4.4 UJ	4.3 U
Copper	50	270	27.9 J	9.6 J	17.8 J	10.8 J	10.8 J	12.6 J	22.1 J	22.3 J	10.5 J	15.8 J	13.0 J	18.6 J	13.0 J	8.9 J	15.2 J	5.6
Iron			15,700 J	7,390 J	10,700 J	8,210 J	9,660 J	10,900 J	19,800 J	7,010 J	7,810 J	9,670 J	9,680 J	15,800 J	16,300 J	7,380 J	13,200 J	9,270 J
Lead	63	1000	**71.4 J**	3.9 J	15.4 J	1.6 J	4.5 J	65.8 J	13.8 J	0.63 UJ	1.7 J	6.0 J	3.8 J	45.7 J	41.9 J	3.9 J	1.0 J	3.8
Magnesium			4,600 J	35,700 J	15,600 J	12,600 J	10,300 J	2,960 J	2,990 J	13,600 J	33,500 J	16,600 J	12,700 J	1,840 J	2,380 J	2,250 J	9,190 J	49,600
Manganese	1,600	10,000	1,030 J	806 J	644 J	348 J	404 J	361 J	518 J	627 J	502 J	605 J	486 J	769 J	776 J	224 J	522 J	318 J
Nickel	30	310	23.8 J	7.4 BJ	12.8 J	7.7 BJ	9.3 J	24.8 J	17.6 J	9.7 J	15.9 J	13.7 J	11.1 J	25.9 J	15.2 J	6.9 BJ	12.3 J	6.4 U
Potassium			770 BJ	1,090 J	1,380 J	1,190 J	969 BJ	605 BJ	834 BJ	1,170 J	1,010 J	1,230 J	1,310 J	660 BJ	650 BJ	706 BJ	1,420 J	1,830
Selenium	3.9	1,500	1.1 UJ	**4.2 J**	1.4 J	2.9 J	1.5 J	1.1 UJ	1.2 UJ	3.0 J	**4.3 J**	2.2 J	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 U
Silver	2	1,500	**2.3 J**	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.3 UJ	2.4 UJ	**3.1 J**	2.1 UJ	2.2 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.2 UJ	2.2 UJ	2.1 UJ
Sodium			226 UJ	218 UJ	222 UJ	219 UJ	220 UJ	227 UJ	235 UJ	645 BJ	263 BJ	218 BJ	292 BJ	231 UJ	231 UJ	218 UJ	218 UJ	214 U
Thallium			2.3 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.3 UJ	2.4 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.2 UJ	2.2 UJ	11.3
Vanadium			12.9 J	8.6 BJ	11.3 J	9.5 BJ	9.0 BJ	12.3 J	19.9 J	6.3 UJ	7.8 BJ	9.7 BJ	9.9 BJ	18.2 J	15.3 J	6.5 UJ	10.6 J	10.0
Zinc	109	10,000	71.7 J	26.2 J	37.5 J	28.0 J	30.0 J	74.7 J	63.7 J	17.5 J	25.4 J	31.5 J	27.6 J	66.7 J	43.0 J	24.5 J	33.0 J	36.3 J
Mercury	0.18	2.8	0.057 UJ	0.054 UJ	0.16 J	0.055 UJ	0.055 UJ	0.081 J	0.059 UJ	0.052 UJ	0.052 UJ	0.054 UJ	0.057 UJ	**0.20 J**	0.11 J	0.054 UJ	0.055 UJ	0.054 U
Cyanide	27	27	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.0 UJ	1.0 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 U
% Moisture			11.7	8.3	9.7	8.9	9.1	12.1	15.1	4.3	4.8	8.2	12.1	13.4	13.3	8.1	8.4	6.6

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
J, UJ and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
U = Compund was analyzed for, but not detected.
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R = Analytical data considered to be unreliable and is rejected.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	Field Duplicate 1	SB-3F	SB-4A	SB-4B	SB-4C	SB-4D	SB-4E	SB-4F	SB-5A	SB-5B	SB-5C	SB-5D	SB-5E	SB-6A	SB-6B	SB-6C
Aluminum			3,660	3,340	11,900	15,400	4,370	8,760	21,200	35,000	12,700	2,420	3,290	10,000	17,700	11,000	2,880 J	2,270 J
Antimony			3.6 UJ	3.4 UJ	3.4 UJ	3.6 UJ	3.2 UJ	3.4 UJ	3.9 UJ	4.1 UJ	3.4 UJ	3.2 UJ	3.1 UJ	3.3 UJ	4.0 UJ	3.4 UJ	3.2 UJ	3.2 UJ
Arsenic	13	16	4.3	2.2 U	4.4	5.4	4.2	5.1	3.2	7.2	4.5	**13.1**	3.9	6.7	8.2	2.3 U	2.1 UJ	2.1 UJ
Barium	350	400	23.0 B	26.6 B	35.7 B	41.7	39.5 B	48.7	142	224	51.3	17.1 B	21.4 B	67.5	131	64.3	44.6 J	33.5 BJ
Beryllium	7.2	590	0.71 U	0.67 U	0.69 U	1.1	0.65 U	0.67 U	1.3	2.0	0.74 B	0.64 U	0.62 U	0.66 U	1.1	0.69 U	0.64 UJ	0.63 UJ
Cadmium	2.5	9.3	**5.7**	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.4 U	1.1 U	1.1 U	1.0 U	1.1 U	1.4 U	1.1 U	1.1 UJ	1.1 UJ
Calcium			42,100	81,200	895 B	4,760	142,000	83,800	18,400	35,800	2,520	156,000	88,700	50,800	19,800	918 B	229,000 J	252,000 J
Chromium	30	1500	5.3	6.0	13.1	19.4	9.7	12.4	23.8	**40.3**	14.5	6.1	4.9	13.8	21.1	29.2	5.1 J	4.7 J
Cobalt			4.7 U	4.5 U	7.4 B	7.6 B	6.2 B	9.9 B	16.9	26.8	9.7 B	4.3 U	4.2 U	11.5	16.1	10.3	4.3 UJ	4.2 UJ
Copper	50	270	11.7	9.2	10.5	17.8	16.2	23.2	21.9	37.8	14.8	7.6	8.5	24.4	21.7	11.0	9.6 J	8.8 J
Iron			9,790 J	9,240 J	21,900 J	23,500 J	14,400 J	19,900 J	32,700 J	51,000 J	23,900 J	12,800 J	8,720 J	22,200 J	30,600 J	20,400 J	7,640 J	6,490 J
Lead	63	1000	2.9	2.6	13.2	9.1	29.1	7.5	8.1	14.1	9.7	5.7	1.6	8.4	8.5	20.5	0.64 UJ	0.67 J
Magnesium			9,690	5,730	2,130	3,600	5,770	12,400	10,700	17,000	3,540	45,400	6,410	11,100	10,100	4,340	6,260 J	29,000 J
Manganese	1,600	10,000	310 J	313 J	530 J	701 J	422 J	435 J	491 J	870 J	683 J	562 J	229 J	455 J	517 J	1,010 J	279 J	357 J
Nickel	30	310	9.7	8.7	12.3	18.1	16.5	19.2	28.0	**45.5**	17.2	6.9 B	7.2 B	22.1	26.2	16.6	6.4 UJ	6.3 UJ
Potassium			1,070	1,150	911 B	2,150	1,670	2,480	4,180	7,470	1,000	1,540	1,130	2,420	3,150	1,960	1,660 J	1,320 J
Selenium	3.9	1,500	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.4 U	1.1 U	1.1 U	1.0 U	1.1 U	1.4 U	1.1 U	1.1 UJ	1.1 UJ
Silver	2	1,500	2.4 UJ	2.2 UJ	2.3 UJ	2.4 UJ	2.2 UJ	2.2 UJ	2.6 UJ	2.7 UJ	2.2 UJ	2.1 UJ	2.1 UJ	2.2 UJ	**22.7 J**	2.3 UJ	2.1 UJ	2.1 UJ
Sodium			237 U	224 U	229 U	237 U	216 U	223 U	262 U	272 U	223 U	214 U	208 U	219 U	270 U	229 U	214 UJ	211 UJ
Thallium			5.4	6.3	2.3 U	2.4 U	8.7	6.9	2.6 U	2.7 U	2.2 U	9.5	6.8	3.1	2.7 U	2.3 U	7.5 J	7.7 J
Vanadium			11.3	9.2 B	29.0	31.7	16.2	18.8	39.6	67.8	27.1	7.2 B	10.0 B	21.4	34.0	33.1	8.4 BJ	7.5 BJ
Zinc	109	10,000	68.1 J	29.2 J	54.8 J	74.4 J	62.0 J	56.8 J	80.7 J	**127 J**	50.1 J	11.5 J	28.5 J	58.4 J	77.2 J	53.5 J	21.3 J	18.6 J
Mercury	0.18	2.8	**0.25**	0.056 U	0.067	0.11	0.054 U	0.056 U	0.066 U	0.068 U	0.11	0.054 U	0.052 U	0.055 U	0.068 U	0.12	0.054 UJ	0.053 UJ
Cyanide	27	27	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.4 U	1.1 U	1.1 U	1.0 U	1.1 U	1.4 U	1.1 U	1.1 UJ	1.1 UJ
% Moisture			15.5	10.8	12.5	15.8	7.5	10.4	23.8	26.6	10.5	6.67	3.7	8.7	26.0	12.5	6.5	5.2

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
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All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-6D	SB-6E	SB-7A	SB-7B	SB-7C	SB-7D	SB-7E	SB-8A	SB-8B	SB-8C	SB-8D	SB-8E	Field Duplicate 2	SB-9A	SB-9B	SB-9C
Aluminum			14,800 J	19,900J	5,730 J	3,000 J	3,430 J	18,900 J	19,000 J	7,160 J	8,600 J	4,090 J	20,700 J	24,700 J	17,700 J	8,780 J	10,000 J	3,950 J
Antimony			4.1 UJ	4.0 UJ	3.3 UJ	3.1 UJ	3.2 UJ	4.0 UJ	4.1 UJ	3.8 UJ	3.5 UJ	3.3 UJ	4.0 UJ	4.2 UJ	4.0 UJ	3.4 U	3.6 U	3.2 U
Arsenic	13	16	5.2 J	3.7 J	5.4 J	2.2 J	2.5 J	4.2 J	4.5 J	4.2 J	3.2 J	2.2 UJ	3.7 UJ	4.0 J	3.5 J	8.3 J	5.6 J	2.2 UJ
Barium	350	400	97.7 J	135 J	56.3 J	30.7 BJ	26.5 BJ	126 J	132 J	341 J	209 J	29.8 BJ	147 J	171 J	115 J	124 J	95.9 J	25.0 BJ
Beryllium	7.2	590	0.93 BJ	1.2 J	0.66 UJ	0.63 UJ	0.63 UJ	1.1 J	1.1 J	0.76 UJ	0.71 UJ	0.66 UJ	1.2 J	1.4 J	1.0 J	0.68 UJ	0.71 U	0.65 U
Cadmium	2.5	9.3	1.4 UJ	1.3 UJ	1.1 UJ	1.0 UJ	1.0 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.2 UJ	1.1 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.1 U	1.2 U	1.1 U
Calcium			53,600 J	18,000 J	140,000 J	176,000 J	73,000 J	20,700 J	23,400 J	68,100 J	58,800 J	144,000 J	20,500 J	17,000 J	15,900 J	45,900 J	42,300 J	155,000 J
Chromium	30	1500	18.3 J	22.1 J	9.4 J	9.0 J	9.2 J	21.3 J	21.8 J	8.5 J	13.4 J	6.5 J	23.3 J	26.6 J	20.6 J	12.7 J	12.5 J	6.9 J
Cobalt			14.3 J	16.4 J	5.1 BJ	4.2 UJ	4.2 UJ	16.2 J	16.7 J	6.8 BJ	6.9 BJ	4.5 BJ	14.9 J	18.1 J	15.8 J	6.7 BJ	7.9 BJ	4.3 UJ
Copper	50	270	28.1 J	21.5 J	12.8 J	9.3 J	10.2 J	20.7 J	22.7 J	31.0 J	25.7 J	11.2 J	20.4 J	23.3 J	19.7 J	20.7 J	19.0 J	11.7 J
Iron			29,000 J	32,200 J	10,900 J	7,200 J	9,660 J	30,900 J	31,500 J	14,400 J	17,300 J	9,820 J	31,700 J	34,400 J	29,800 J	16,700 J	19,900 J	10,600 J
Lead	63	1000	9.9 J	7.7 J	70.3 J	33.2 J	13.1 J	7.2 J	9.0 J	**99.1 J**	**117 J**	5.4 J	6.7 J	7.6 J	6.8 J	**93.2 J**	27.3 J	2.8 J
Magnesium			12,300 J	10,200 J	36,200 J	40,700 J	16,900 J	10,600 J	10,800 J	7,200 J	5,220 J	26,400 J	8,710 J	11,000 J	9,900 J	6,670 J	14,100 J	10,800 J
Manganese	1,600	10,000	610 J	531 J	306 J	286 J	384 J	451 J	543 J	**1980 J**	1,060 J	554 J	475 J	494 J	503 J	581 J	886 J	321 J
Nickel	30	310	26.7 J	27.6 J	10.3 J	7.3 BJ	7.2 BJ	27.2 J	27.2 J	12.9 J	14.7 J	9.3 J	25.9 J	29.1 J	26.2 J	15.6 J	16.4 J	9.4 J
Potassium			3,580 J	4,010 J	1,980 J	1,250 J	1,270 J	4,000 J	3,880 J	1,710 J	1,690 J	1,910 J	4,440 J	5,940 J	3,500 J	1,750 J	1,730 J	1,980 J
Selenium	3.9	1,500	1.4 UJ	1.3 UJ	1.1 UJ	1.0 UJ	1.0 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.2 UJ	1.1 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.1 U	1.2 U	1.1 U
Silver	2	1,500	2.8 UJ	2.7 UJ	2.2 UJ	2.1 UJ	2.1 UJ	2.6 UJ	2.7 UJ	2.6 UJ	**2.8 J**	2.2 UJ	2.7 UJ	2.8 UJ	2.7 UJ	2.3 U	2.4 U	2.2 U
Sodium			275 UJ	266 UJ	219 UJ	320 BJ	210 UJ	265 UJ	272 UJ	255 UJ	236 UJ	220 UJ	267 UJ	278 UJ	266 UJ	228 U	237 U	217 U
Thallium			2.8 UJ	2.7 UJ	2.8 J	5.5 J	2.1 UJ	2.6 UJ	2.7 UJ	2.6 UJ	2.4 UJ	3.2 J	2.7 UJ	2.8 UJ	2.7 UJ	2.3 U	2.4 U	4.2
Vanadium			29.1 J	36.3 J	11.8 J	8.8 BJ	12.3 J	34.5 J	38.3 J	15.8 J	21.2 J	11.3 J	38.2 J	46.1 J	32.9 J	22.6 J	23.3 J	11.7 J
Zinc	109	10,000	68.2 J	75.4 J	47.5 J	27.2 J	29.2 J	73.4 J	77.2 J	75.2 J	72.1 J	24.5 J	72.7 J	88.9 J	71.3 J	69.9 J	62.7 J	28.3 J
Mercury	0.18	2.8	0.069 UJ	0.067 UJ	0.059 J	0.052 UJ	0.052 UJ	0.066 UJ	0.068 UJ	**0.42 J**	0.15 J	0.055 UJ	0.067 UJ	0.070 UJ	0.081 J	0.11 R	0.067 R	0.054 R
Cyanide	27	27	1.4 UJ	1.3 UJ	0.011 UJ	1.0 UJ	1.0 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.2 UJ	1.1 UJ	1.3 UJ	1.4 UJ	1.3 UJ	1.1 U	1.2 U	1.1 U
% Moisture			27.2	24.9	8.6	4.4	4.7	24.6	26.4	21.6	15.3	9.1	25.1	28.1	24.9	12.3	15.7	7.8

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
J, UJ and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
U = Compund was analyzed for, but not detected.
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All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-9D	SB-9E	SB-10A	SB-10B	SB-10C	SB-10D	SB-10E	SB-10F	SB-11A	SB-11B	SB-11C	SB-11D	SB-11E	Field Duplicate 3	Field Duplicate 4	SB-12A
Aluminum			3,440 J	20,600 J	9,450 J	7,050 J	6,800 J	13,400 J	20,500 J	29,000 J	7,300 J	5,810 J	3,870 J	13,000 J	18,700 J	8,360	7,350	6,920 J
Antimony			3.1 U	3.8 U	3.5 U	3.3 U	3.3 U	3.4 U	3.9 U	3.9 U	3.4 U	3.5 U	3.3 U	3.4 U	3.8 U	3.4 U	3.4 U	3.4 U
Arsenic	13	16	2.1 UJ	5.6 J	3.2 J	4.6 J	2.2 UJ	6.1 J	5.4 J	6.8 J	12.3 J	4.2 J	2.5 J	5.5 J	3.2 J	10.9	5.2	4.8 J
Barium	350	400	29.0 BJ	134 J	85.4 J	29.8 BJ	45.7 J	80.7 J	148 J	189 J	86.5 J	47.1 J	29.6 BJ	81.5 J	125 J	100	42.3	68.6 J
Beryllium	7.2	590	0.63 U	1.2	0.70 U	0.66 U	0.65 U	0.79 B	1.2	1.8	0.68 U	0.70 U	0.66 U	0.81 B	1.1	0.68 U	0.67 U	0.67 U
Cadmium	2.5	9.3	1.0 U	1.3 U	1.2 U	1.1 U	1.8	1.1 U	1.3 U	1.6	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.1 U	1.1 U	1.1 U
Calcium			98,400 J	22,000 J	6,130 J	124,000 J	283,000 J	44,800 J	23,400 J	49,100 J	43,700 J	12,000 J	189,000 J	43,200 J	15,900 J	70,100	65,000	79,000 J
Chromium	30	1500	5.1 J	23.5 J	9.8 J	9.5 J	12.7 J	17.0 J	24.0 J	**37.1 J**	13.2 J	8.9 J	6.0 J	16.5 J	21.8 J	13.6	14.5	10.2 J
Cobalt			4.2 UJ	16.6 J	6.4 BJ	7.7 BJ	8.5 BJ	10.3 J	15.9 J	25.4 J	6.9 BJ	6.1 BJ	4.5 BJ	12.4 J	15.8 J	6.7 B	6.3 B	6.0 BJ
Copper	50	270	5.8 J	22.5 J	9.8 J	17.1 J	19.2 J	21.9 J	22.5 J	36.6 J	28.5 J	14.1 J	13.7 J	25.9 J	22.5 J	25.9	19.6	18.4 J
Iron			10,400 J	31,200 J	17,600 J	18,800 J	21,000 J	24,300 J	33,200 J	46,200 J	14,900 J	18,600 J	10,900 J	25,200 J	29,900 J	16,100	17,300	13,700 J
Lead	63	1000	4.2 J	7.6 J	45.8 J	5.1 J	4.6 J	8.2 J	8.1 J	15.1 J	**436 J**	5.5 J	2.3 J	9.0 J	7.7 J	217	14.7	**88.0 J**
Magnesium			8,900 J	10,900 J	1,870 J	37,000 J	42,600 J	12,600 J	9,450 J	19,000 J	9,010 J	2,450 J	7,620 J	8,670 J	9,510 J	15,300	4,740	6,030 J
Manganese	1,600	10,000	316 J	603 J	1,010 J	674 J	**1,660 J**	439 J	550 J	997 J	491 J	**1,660 J**	492 J	397 J	467 J	421	644	566 J
Nickel	30	310	6.3 UJ	27.4 J	8.7 J	14.6 J	17.7 J	22.9 J	28.9 J	**43.5 J**	18.3 J	13.8 J	10.7 J	**1,520 J**	27.1 J	17.6	17.9	14.2 J
Potassium			1,410 J	4,540 J	641 BJ	2,220 J	3,460 J	3,450 J	4,250 J	6,460 J	1,610 J	1,250 J	1,970 J	3,220 J	3,900 J	2,510	1,890	1,860 J
Selenium	3.9	1,500	1.0 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.3 U	1.3 U	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.1 U	1.1 U	1.1 U
Silver	2	1,500	2.1 U	2.5 U	2.3 U	2.2 U	2.2 U	2.3 U	2.6 U	2.6 U	2.3 U	2.3 U	2.2 U	2.2 U	2.5 U	**16.5**	**17.5**	2.2 U
Sodium			210 U	254 U	233 U	221 U	218 U	227 U	257 U	263 U	227 U	232 U	220 U	601 B	252 U	228 U	224 U	223 U
Thallium			2.1 U	2.5 U	2.3 U	2.4	5.7	2.3 U	2.6 U	2.6 U	2.3 U	2.3 U	7.0	2.2 U	2.5 U	2.3 U	2.2 U	2.2 U
Vanadium			10.7 J	39.0 J	21.5 J	17.6 J	26.6 J	27.1 J	38.4 J	61.1 J	17.3 J	15.9 J	11.5 J	26.3 J	35.7 J	19.1	18.7	16.0 J
Zinc	109	10,000	21.9 J	79.5 J	46.6 J	52.1 J	**373 J**	61.5 J	79.7 J	**117 J**	**122 J**	42.1 J	29.3 J	68.5 J	75.6 J	**116**	53.5	79.1 J
Mercury	0.18	2.8	0.052 R	0.064 R	**0.22 R**	0.055 R	0.054 R	0.057 R	0.085 R	0.080 R	**0.33 R**	0.11 R	0.055 R	0.056 R	**2.1 R**	0.13	0.15	**0.19 R**
Cyanide	27	27	1.0 U	1.3 U	1.2 U	1.1 U	1.1 U	1.1 U	1.3 U	1.3 U	1.1 U	1.2 U	1.1 U	1.1 U	1.3 U	1.1 U	1.1 U	1.1 U
% Moisture			4.6	21.4	14.2	9.6	8.2	12.1	22.2	23.9	11.9	13.7	9.0	10.5	20.7	12.1	10.8	10.4

Notes:
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Table 5
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H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-12B	SB-12C	SB-12D	SB-12E	SB-13A	SB-13B	SB-13C	SB-13D	SB-13E	SB-13F	SB-14A	SB-14B	SB-14C	SB-14D	SB-14E	SB-14F
Aluminum			7,810 J	2,970 J	18,200 J	20,700 J	7,820 J	3,750 J	2,630 J	2,410 J	1,650 J	2,910 J	6,910 J	720 J	1,680 J	1,780 J	5,330 J	6,760 J
Antimony			3.4 U	3.3 UJ	3.5 UJ	4.1 UJ	3.8 UJ	3.3 UJ	3.3 UJ	3.2 U	3.3 U	3.4 U	3.6 U	3.3 U	3.2 U	3.1 U	3.3 U	3.5 U
Arsenic	13	16	7.3 J	2.2 UJ	2.8 J	4.3 J	8.8 J	2.2 UJ	2.2 UJ	2.1 U	2.2 U	2.2 U	9.9	2.2 U	2.1 U	2.1 U	5.1	7.4
Barium	350	400	71.6 J	19.8 BJ	128 J	150 J	104 J	26.2 BJ	11.0 UJ	10.6 R	10.9 R	11.3 U	119	11.0	10.5 R	10.5 R	48.2	28.2 B
Beryllium	7.2	590	0.68 U	0.65 U	0.99 B	1.2	0.76 U	0.65 U	0.66 U	0.64 U	0.66 U	0.68 U	0.73 U	0.66 U	0.63 U	0.63 U	0.66 U	0.75 B
Cadmium	2.5	9.3	1.1 U	1.1 R	1.4 R	1.6 R	1.3 R	1.1 R	1.3	1.1 U	1.1 U	1.1 U	**5.9**	1.1 U	**4.9**	**8.9**	**4.5**	1.2 U
Calcium			28,400 J	129,000	28,700	19,100	9,710	87,100	267,000	199,000	160,000	94,600	33,300	24,600	154,000	130,000	68,400	15,400
Chromium	30	1500	10.6 J	5.3 R	20.6 R	22.0 R	14.3 R	6.4 R	4.7	6.7	4.5	4.0	**32.3**	1.5 B	3.6	4.8	13.8	9.7
Cobalt			9.0 BJ	4.4 U	14.6	16.2	8.7 B	4.4 U	4.4 U	4.2 U	4.4 U	4.5 U	6.9 B	4.4 U	4.2 U	4.2 U	6.1 B	5.7 B
Copper	50	270	17.6 J	12.0 J	23.3 J	25.8 J	47.4 J	13.7 J	18.1 J	8.3 J	9.3 J	10.1 J	**55.6 J**	5.0 BJ	6.7 J	10.4 J	32.9 J	12.3 J
Iron			16,800 J	8,970 J	30,100 J	32,900 J	13,600 J	9,950 J	6,540 J	6,450 J	4,190 J	7,870 J	17,300 J	3,440 J	5,300 J	7,450 J	13,400 J	17,200 J
Lead	63	1000	**69.4 J**	0.78 J	6.2 J	8.1 J	**749 J**	4.4 J	0.90 J	1.0 J	0.95 J	2.3 J	**425 J**	0.69 J	0.63 UJ	2.8 J	**193 J**	45.9 J
Magnesium			5,870 J	16,400 J	10,400 J	10,300 J	3,580 J	14,700 J	5,450 J	9,980 J	6,120 J	4,390 J	13,700 J	5,350 J	7,990 J	5,410 J	7,990 J	3,440 J
Manganese	1,600	10,000	1,200 J	362 J	596 J	549 J	493 J	470 J	286 J	251 J	284 J	241 J	1,030 J	117 J	299 J	285 J	586 J	876 J
Nickel	30	310	14.5 J	8.3 J	26.7 J	28.0 J	**33.7 J**	10.5 J	17.2 J	8.5 J	17.4 J	10.9 J	**36.8 J**	6.6 UJ	21.9 J	**31.0 J**	**161 J**	15.9 J
Potassium			1,450 J	928 B	3,370	3,900	1,210	1,090	1,140	1,510	775 B	930 B	711 B	219 U	599 B	651 B	900 B	645 B
Selenium	3.9	1,500	1.1 U	1.1 U	1.2 U	1.4 U	1.3 U	1.1 U	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.0 UJ	1.0 UJ	1.1 UJ	1.2 UJ
Silver	2	1,500	**4.2**	2.2 UJ	2.4 UJ	2.7 UJ	2.5 U	2.2 UJ	2.2 U	2.1 U	2.2 U	2.2 U	**44.5 J**	2.2 U	**2.9 J**	2.1 U	2.2 U	2.4 U
Sodium			225 U	218 U	236 U	272 U	528 B	218 U	220 U	212 U	218 U	225 U	244 U	219 U	210 U	209 U	219 U	235 U
Thallium			2.2 U	2.2 UJ	2.4 UJ	2.7 UJ	2.5 UJ	2.2 UJ	15.2 J	11.5 J	11.8 J	8.0 J	2.4 UJ	2.2 UJ	14.8 J	9.1 J	3.0 J	2.4 UJ
Vanadium			19.1 J	9.9 BJ	32.8 J	39.6 J	21.0 J	10.3 J	6.6 U	8.0 B	6.6 U	6.9 B	22.7	6.6 U	6.3 U	7.4 B	14.2	18.6
Zinc	109	10,000	59.3 J	32.2 J	76.1 J	91.2 J	**185 J**	30.8 J	16.7 J	17.7 J	4.0 BJ	17.2 J	**404 J**	10.4 J	9.5 J	40.9 J	80.9 J	33.0 J
Mercury	0.18	2.8	**0.22 R**	0.054 UJ	0.059 UJ	0.068 UJ	**0.45 J**	**0.39 J**	0.079 R	0.053 R	0.11 R	0.11 R	0.05 J	0.18 J	0.13 J	0.14 J	0.12 J	0.12 J
Cyanide	27	27	1.1 U	1.1 U	1.2 U	1.4 U	1.3 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.2 U	1.1 U	1.0 U	1.0 U	1.1 U	1.2 U
% Moisture			11.3	8.1	15.3	26.5	21.4	8.2	9.0	5.9	8.4	11.2	17.9	8.8	4.8	4.4	8.7	14.7

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs
J, UJ and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
U = Compund was analyzed for, but not detected
B = Analyte detected in the associated Method Blank
R = Analytical data considered to be unreliable and is rejected.
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-15A	SB-15B	SB-15C	SB-15D	SB-15E	SB-15F	SB-16A	SB-16B	SB-16C	SB-16D	SB-16E	SB-16F	SB-17A	SB-17B	SB-17C	SB-17D
Aluminum			4,440 J	2,960 J	3,820 J	2,350 J	5,800 J	5,580 J	5,140 J	2,740 J	590 J	2,840 J	1,930	3,230	6,990	4,280	5,670	2,220
Antimony			3.4 U	3.4 U	3.4 U	3.2 U	3.4 U	3.4 U	3.3 U	3.3 U	3.2 U	3.6 B	3.4 UJ	3.5 UJ	3.2 UJ	3.4 UJ	3.4 UJ	3.2 UJ
Arsenic	13	16	2.3	2.3 U	2.3 U	2.1 U	5.8	2.3	2.9	2.2 U	2.2 U	2.2 U	2.2 UJ	2.3 UJ	3.3 J	2.3 UJ	2.2 UJ	2.1 UJ
Barium	350	400	11.4 R	11.3 R	11.4 R	10.5 R	113	14.8 B	11.1 U	10.9 U	10.8 U	25.2 B	21.2 B	22.5 B	50.4	18.5 B	28.3 B	20.7 B
Beryllium	7.2	590	0.68 U	0.68 U	0.69 U	0.63 U	0.69 U	0.68 U	0.67 U	0.66 U	0.65 U	0.66 U	0.68 U	0.70 U	0.64 U	0.69 U	0.67 U	0.63 U
Cadmium	2.5	9.3	1.7	1.5	1.1 U	1.0 U	1.2 U	**21.7**	**66.4**	**56.4**	**12.1**	**58.2**	**18.8**	**3.2**	1.1 U	1.2 U	1.1 U	**7.3**
Calcium			119,000	154,000	108,000	134,000	22,000	46,300	37,900	50,000	10,400	50,200	284,000	116,000 J	58,600 J	72,400 J	47,800 J	181,000
Chromium	30	1500	7.3	8.4	7.4	4.5	9.1	16.9	**47.3**	**89.0**	19.0	**91.7**	7.1	5.9	11.1	5.3	7.2	5.6
Cobalt			4.5 U	4.5 U	4.6 U	4.2 U	5.6 B	5.5 B	9.3 B	5.0 B	4.3 U	4.5 B	5.0 B	4.7 U	8.4 B	4.6 U	4.5 U	4.2 U
Copper	50	270	18.1 J	14.6 J	15.1 J	12.6 J	**68.2 J**	**147 J**	**110 J**	**257 J**	**56.9 J**	**256 J**	**53.5 J**	26.7 J	33.8	5.4	23.3	26.6 J
Iron			8,230 J	8,160 J	9,930 J	8,060 J	12,400 J	13,600 J	18,100 J	8,960 J	1,930 J	8,970 J	5,310	9,440	19,800	6,080	7,980	6,560
Lead	63	1000	2.3 J	2.6 J	3.3 J	3.0 J	**196 J**	26.7 J	21.7 J	31.2 J	6.8 J	31.2 J	0.68 UJ	2.2 J	10.1 J	0.95 J	2.3 J	1.2 J
Magnesium			3,760 J	5,350 J	6,780 J	7,260 J	5,710 J	12,400 J	5,840 J	12,100 J	2,590 J	12,100 J	3,370	37,600	7,670	2,450	2,440	33,800
Manganese	1,600	10,000	285 J	296 J	361 J	309 J	517 J	725 J	307 J	337 J	72.7 J	336 J	285 J	534 J	523 J	140 J	247 J	403 J
Nickel	30	310	15.1 J	13.4 J	**38.2 J**	20.1 J	**33.9 J**	**309 J**	**1,540 J**	**532 J**	**116 J**	**552 J**	**333 J**	**166 J**	22.9 J	6.9 UJ	14.2 J	**73.4 J**
Potassium			1,080	1,080	1,130	861 B	861 B	942 B	982 B	826 B	216 U	883 B	1,010	1,040	1,740	893 B	1,070	1,080
Selenium	3.9	1,500	1.1 UJ	1.1 UJ	1.1 UJ	1.0 UJ	1.2 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	R	1.1 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.1 UJ
Silver	2	1,500	2.3 U	2.3 U	2.3 U	2.1 U	**17.3 J**	2.3 U	**28.5 J**	**8.9 J**	2.2 U	**9.1 J**	**21.0 J**	2.3 U	2.1 U	2.3 U	2.2 U	2.1 U
Sodium			337 B	226 U	229 U	1,860	2,440	1,050	2,340	386 B	216 U	511 B	225 U	233 U	553 B	230 U	223 U	211 U
Thallium			8.9 J	10.4 J	6.3 J	8.4 J	2.3 UJ	2.3 UJ	2.5 J	2.2 UJ	2.2 UJ	2.2 UJ	22.9 J	12.6 J	9.6 J	11.8 J	9.7 J	15.3 J
Vanadium			8.1 B	7.3 B	9.9 B	9.1 B	13.9	12.4	11.8	7.4 B	6.5 U	7.4 B	6.8 U	12.2	14.7	8.1 B	10.0	7.3 B
Zinc	109	10,000	24.7 J	23.9 J	25.2 J	16.6 J	**136 J**	**131 J**	**405 J**	**255 J**	67.0 J	**260 J**	**136 J**	60.3 J	63.0 J	18.2 J	28.9 J	44.4 J
Mercury	0.18	2.8	**0.41 J**	0.13 J	0.091 R	0.095 R	0.10 R	0.10 R	**0.52 J**	0.11 J	**0.21 J**	0.14 J	0.14 J	R	0.11 J	0.15 J	0.12 J	0.096 R
Cyanide	27	27	1.1 U	1.1 U	1.1 U	1.0 U	1.2 U	1.1 U	1.1 U	9.6	**79.5**	**88.9**	**115 J**	1.2 UJ	1.1 UJ	1.2 UJ	14.2 J	1.1 UJ
% Moisture			11.9	11.6	12.5	4.6	13.2	11.8	10.0	8.5	7.4	9.4	11.1	14.2	6.3	12.9	10.3	5.3

Notes:
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= Compound detected above Commercial Use SCOs.
J, UJ and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
U = Compund was analyzed for, but not detected.
B = Analyte detected in the associated Method Blank.
R = Analytical data considered to be unreliable and is rejected.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-17E	SB-18A	SB-18B	SB-18C	SB-18D	SB-18E	SB-19A	SB-19B	SB-19C	SB-19D	SB-19E	SB-20A	SB-21A	SB-21B	SB-21C	SB-21D
Aluminum			1,410	3,850	1,720	848	2,650	2,630	7,830	4,860	2,750	3,080	3,300	3,690	2,040	1,350	3,200 J	2,300 J
Antimony			3.3 UJ	3.2 UJ	3.2 UJ	3.2 UJ	3.1 U	3.4 U	3.3 U	3.2 U	3.2 U	3.2 U	3.5 U	3.4 U	3.6 U	3.1 U	3.2 UJ	3.1 UJ
Arsenic	13	16	2.5 J	4.2 J	2.1 UJ	3.6 J	2.1 U	2.2 U	2.5	2.1 U	2.1 U	2.1 U	2.3 U	8.4	**45.6**	2.1 U	2.1 UJ	2.1 UJ
Barium	350	400	23.2 B	28.1 B	10.6 U	109	17.4 B	32.2 B	43.6	32.3 B	21.0 B	27.3 B	34.5 B	31.3 B	98.6	16.1 BJ	18.7 BJ	16.1 BJ
Beryllium	7.2	590	0.66 U	0.64 U	0.63 U	0.64 U	0.63 U	0.67 U	0.66 U	0.63 U	0.64 U	0.63 U	0.70 U	0.67 U	0.72 U	0.63 U	0.63 U	0.62 U
Cadmium	2.5	9.3	1.1 U	1.1 U	1.1 U	1.1 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U	1.1 U	1.2 U	1.1 U	1.6	1.0 U	1.1 R	1.0 R
Calcium			62,200 J	86,000 J	262,000	70,700 J	65,100	125,000	32,700	81,500	215,000	112,000	168,000	51,400	18,200	135,000	126,000	150,000
Chromium	30	1500	3.5	6	3.3	3.2	3.8	11.2	9.3	8.4	5.5	5.4	6.4	7.4	5.7	3.2	6.3 R	3.9 R
Cobalt			4.4 U	5.1 B	4.2 U	4.2 U	4.2 U	4.5 U	5.6 B	6.4 B	4.2 U	4.2 U	5.6 B	5.7 B	4.8 U	4,2 U	5.3 B	4.1 U
Copper	50	270	9.2	19.3	2.4 BJ	7.9	7.4	10.7 J	9.7	27.8	14.2 J	10.7 J	16.1 J	18.2	33.9	7.5 J	19.7 J	6.4 J
Iron			10,200	11,100	4,200	9,960	6,950	8,180	13,400	11,900	9,410	8,700	12,700	12,000	18,300	6,630	11,300 J	6,060 J
Lead	63	1000	1.7 J	9.5 J	0.63 UJ	4.0 J	2.6	2.1	27.7	8.4	2.3	2.0	7.1	15.1	**227**	1.3	0.98 J	1.5 J
Magnesium			23,400	5,130	3,210	29,900	6,140	6,460	3,140	6,300	10,300	7,470	63,500	3,850	1,060	33,400	12,800 J	20,200 J
Manganese	1,600	10,000	1,050	339 J	177 J	487 J	214 J	305 J	349 J	328 J	581 J	345 J	849 J	321 J	81.2 J	451 J	377 J	265 J
Nickel	30	310	10.8 J	12.4 J	6.3 UJ	6.4 UJ	6.3 UJ	7.8 BJ	10.4 J	11.4 J	9.6 J	9.2 J	13.3 J	12.9 J	**35.1 J**	8.3 J	14.0 J	6.2 UJ
Potassium			714 B	1,020	915 B	464 B	804 B	1,150	641 B	1,350	1,230	943 B	1,190	818 B	511 B	650 B	940 B	1,130
Selenium	3.9	1,500	1.1 UJ	1.1 UJ	1.1 UJ	1.1 R	1.0 R	1.1 R	1.1 R	1.0 R	1.1 R	1.1 R	1.2 R	1.1 R	1.2 R	1.0 R	1.1 U	1.0 U
Silver	2	1,500	**12.3 J**	2.1 U	2.1 U	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	2.3 U	2.2 U	**3.1 J**	2.1 U	2.1 UJ	2.1 UJ
Sodium			220 U	212 U	211 U	212 U	209 U	224 U	219 U	210 U	212 U	211 U	233 U	224 U	239 U	209 U	211 U	206 U
Thallium			9.5 J	12.6 J	21.5 J	10.8 J	11.0	15.4	8.2	12.0	17.4	14.0	15.6	11.2	8.2	13.9	2.1 UJ	2.1 UJ
Vanadium			11.3	10.0	6.3 U	6.4 U	6.3 U	7.5 B	16.2	12.0	8.9 B	9.0 B	13.1	9.3 B	12.4	6.9 B	8.5 BJ	6.5 BJ
Zinc	109	10,000	21.8 J	51.8 J	10.7 J	12.1 J	21.0 J	30.3 J	38.0 J	34.2 J	31.0 J	29.2 J	40.6 J	38.1 J	39.6 J	23.4 J	34.8 J	19.0 J
Mercury	0.18	2.8	0.095 R	0.12 J	0.098 R	0.074 R	0.092 R	0.085 R	0.15 J	0.11 J	0.079 R	0.091 R	0.11 R	0.084 R	**0.19 J**	0.14 J	0.078 J	0.052 UJ
Cyanide	27	27	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.0 UJ	1.1 UJ	1.1 UJ	1.0 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.2 UJ	1.0 UJ	1.1 U	1.0 U
% Moisture			9.3	5.6	5.3	5.4	4.2	10.8	8.5	4.7	5.4	5.4	14.0	10.6	16.3	4.1	5.3	3.0

Notes:
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= Compound detected above Commercial Use SCOs.
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All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-21E	SB-22A	SB-22B	SB-22C	SB-22D	SB-22E	SB-22F	SB-23A	SB23-B	SB-23C	SB-23D	SB-23E	SB-23F	SB-24A	SB-24B	SB-24C
Aluminum			3,710 J	6,250 J	2,940 J	3,080 J	5,290 J	3,870 J	3,000 J	1,410 J	3,640 J	3,340 J	2,610 J	1,230 J	3,090 J	4,740 J	2,690 J	1,790 J
Antimony			3.3 UJ	3.8 BJ	3.3 UJ	3.2 UJ	3.3 UJ	3.2 UJ	3.4 UJ	9.3 BJ	3.3 UJ	3.3 UJ	3.2 U	3.4 U	3.3 U	3.5 U	3.3 U	3.2 U
Arsenic	13	16	2.2 UJ	28.9 J	2.2 UJ	2.2 UJ	4.0 J	2.8 J	2.2 UJ	**248 J**	**15.5 J**	7.0 J	2.1 U	2.3 U	2.2 U	8.2 J	2.2 U	2.1 U
Barium	350	400	31.5 BJ	102 J	22.2 BJ	**390 J**	47.4 J	24.1 BJ	28.7 BJ	**443 J**	24.4 BJ	60.7 J	14.8 BJ	11.5 U	17.2 B	128 J	19.6 BJ	17.6 BJ
Beryllium	7.2	590	0.66 U	0.72 U	0.66 U	0.64 U	0.65 U	0.64 U	0.68 U	0.72 U	0.67 U	0.66 U	0.64 U	0.69 U	0.67 U	0.71 U	0.65 U	0.64 U
Cadmium	2.5	9.3	1.1 R	**15.8 R**	**22.9 R**	1.1 R	**5.1 R**	**6.5 R**	1.1 R	**3.5 R**	**8.2 R**	**44.4 R**	**195 J**	**16.3 J**	**150 J**	1.2 J	1.1 U	1.1 U
Calcium			207,000	26,800	166,000	143,000	72,300	99,100	237,000	239 U	95,300	69,200	239,000 J	30,100 J	99,400 J	1,960 J	132,000 J	292,000 J
Chromium	30	1500	7.1 R	12.4 R	70.2 R	4.5 R	**55.1 R**	10.3 R	5.0 R	5.5 R	27.9 R	**50.7 R**	10.4 J	**53.1 J**	**59.1 J**	7.0 J	4.2 J	3.2 J
Cobalt			6.7 B	9.7 B	4.4 U	4.3 U	5.4	4.4 B	4.5 U	4.8 U	9.6 B	6.4 B	4.2 U	4.6 U	7.4 BJ	4.7 U	4.4 U	4.2 U
Copper	50	270	15.4 J	**106 J**	43.6 J	20.3 J	**271 J**	**158 J**	18.5 J	**140 J**	**91.2 J**	**105 J**	**61.6 J**	**113 J**	**88.3 J**	**126 J**	7.3 J	6.0 J
Iron			14,800 J	35,100 J	9,400 J	6,750 J	18,300 J	8,440 J	9,220 J	72,800 J	45,000 J	18,300 J	6,410 J	4,560 J	8,780 J	16,400 J	6,260 J	4,770 J
Lead	63	1000	4.9 J	**1,170 J**	31.8 J	0.64 UJ	3.1 J	1.7 J	0.68 UJ	**1,850 J**	27.7 J	34.5 J	4.4 J	**73.7 J**	3.8 J	**91.8 J**	2.6 J	0.64 UJ
Magnesium			4,560 J	3,030 J	18,300 J	4,330 J	8,930 J	9,800 J	4,960 J	312 BJ	14,200 J	5,450 J	5,750 J	4,940 J	4,420 J	1,280 J	50,700 J	6,190 J
Manganese	1,600	10,000	363 J	474 J	331 J	266 J	600 J	276 J	464 J	136 J	477 J	**2,380 J**	283 J	163 J	243 J	577 J	342 J	351 J
Nickel	30	310	**39.4 J**	**91.0 J**	**129 J**	**112 J**	**801 J**	**402 J**	**92.3 J**	7.2 UJ	**38.9 J**	**113 J**	**272 J**	**284 J**	**693 J**	**78.5 J**	6.5 UJ	6.4 UJ
Potassium			1,640	1,020	860 B	1,170	1,120	1,580	1,380	1,280	1,130	904 B	1,460 J	428 B	1,080 J	505 BJ	1,070 J	948 B
Selenium	3.9	1,500	1.1 U	1.2 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	**7.5 J**	1.1 U	1.1 U	1.1 U	1.2 UJ	1.1 UJ	1.2 UJ	1.1 UJ	1.1 UJ
Silver	2	1,500	2.2 UJ	2.4 UJ	2.2 UJ	2.2 UJ	**3.5 J**	**70.7 J**	**3.6 J**	2.4 UJ	**2.5 J**	2.2 UJ	2.1 U	2.3 U	**4.0 J**	2.4 U	2.2 U	**2.4 J**
Sodium			220 U	574 B	220 U	215 U	217 U	215 U	574 B	783 B	222 U	221 U	212 U	230 U	252 BJ	235 U	217 U	235 BJ
Thallium			2.2 UJ	2.4 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	31.2 J	2.2 UJ	2.2 UJ	22.1 J	10.8 J	16.4 J	2.4 U	16.1 J	24.6 J
Vanadium			12.3 J	18.7 J	8.2 BJ	6.8 BJ	13.9 J	15.4 J	7.0 BJ	11.9 J	12.5 J	9.2 UJ	6.4 U	6.9 U	10.7 J	14.8 J	11.5 J	6.5 BJ
Zinc	109	10,000	50.6 J	**3,710 J**	**640 J**	43.6 J	66.1 J	44.8 J	30.3 J	**117 J**	**115 J**	**1,710 J**	**306 J**	**308 J**	**434 J**	98.8 J	19.4 J	12.2 J
Mercury	0.18	2.8	0.057 J	**0.53 J**	0.068 J	0.054 UJ	0.054 UJ	0.054 UJ	0.113 U	**2.3 J**	0.057 J	0.055 UJ	0.053 UJ	0.057 UJ	0.14 J	0.15 J	0.054 UJ	0.053 UJ
Cyanide	27	27	1.1 U	2.0 J	19.3 J	1.1 U	4.3 J	6.1 J	1.1 U	1.2 U	1.2 J	6.1 J	1.1 U	3.2 J	20.4 J	1.2 U	1.1 U	1.1 U
% Moisture			9.1	17.2	9.0	6.8	8.0	7.0	11.1	16.5	10.1	9.6	5.8	12.9	10.0	15.0	8.0	5.7

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
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U = Compund was analyzed for, but not detected.
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R = Analytical data considered to be unreliable and is rejected.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-24D	SB-24E	SB-25A	SB-25B	SB-25C	SB-25D	SB-25E	SB-26A	SB-26B	SB-26C	SB-26D	SB-26E	SB-27A	SB-27B	SB-27C	SB-27D
Aluminum			3,110 J	1,360 J	2,610 J	2,430 J	2,910 J	5,300 J	2,680 J	6,750 J	4,180 J	2,700 J	4,170 J	3,420 J	3,310 J	3,410 J	3,220 J	3,250 J
Antimony			3.2 U	4.5 BJ	3.3 U	3.4 U	3.4 U	3.1 U	3.4 U	3.4 U	3.2 U	4.2 BJ	3.3 U	3.4 U	3.2 U	3.2 U	3.2 UJ	3.4 UJ
Arsenic	13	16	2.1 U	2.2 U	2.2 U	5.6 J	2.2 U	2.1 U	2.3 U	**13.9 J**	2.2 U	2.1 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 UJ	2.2 UJ
Barium	350	400	23.2 BJ	17.3 BJ	46.7 J	17.2 BJ	20.8 BJ	18.9 BJ	24.6 BJ	164 J	23.0 BJ	17.8 BJ	66.6 J	18.3 BJ	24.2 BJ	29.7 BJ	27.5 BJ	27.3 BJ
Beryllium	7.2	590	0.64 U	0.66 U	0.66 U	0.68 U	0.67 U	0.62 U	0.68 U	0.70 BJ	0.65 U	0.64 U	0.66 U	0.67 U	0.65 U	0.65 U	0.65 UJ	0.67 UJ
Cadmium	2.5	9.3	**29.9 J**	**581 J**	**6.5 J**	1.1 U	1.1 U	**16.3 J**	**163 J**	**4.8 J**	1.1 U	1.1 U	**4.3 J**	**10.5 J**	**3.0 J**	**39.0 J**	1.2 J	**7.6 J**
Calcium			98,800 J	171,000 J	99,300 J	34,800 J	86,500 J	27,700 J	179,000 J	40,400 J	121,000 J	84,000 J	90,000 J	60,100 J	141,000 J	41,600 J	74,800 J	97,300 J
Chromium	30	1500	18.7 J	17.6 J	10.5 J	6.2 J	4.3 J	8.9 J	**36.8 J**	9.6 J	7.5 J	4.9 J	6.7 J	**31.1 J**	22.9 J	13.6 J	12.6 J	17.2 J
Cobalt			5.4 BJ	4.4 U	4.6 BJ	4.5 U	4.5 U	6.9 BJ	5.9 BJ	5.9 BJ	4.4 B	4.2 U	5.4 BJ	4.5 U	4.4 BJ	6.7 BJ	4.3 UJ	4.5 UJ
Copper	50	270	**55.6 J**	21.2 J	**51.7 J**	9.5 J	8.2 J	5.5 J	**66.0 J**	**56.9 J**	14.3 J	9.9 J	37.6 J	**99.2 J**	**69.2 J**	12.0 J	36.6 J	**94.3 J**
Iron			10,300 J	4,390 J	9,500 J	16,200 J	7,120 J	12,300 J	8,830 J	16,100 J	9,190 J	7,150 J	14,100 J	9,520 J	12,000 J	10,800 J	9,390 J	9,610 J
Lead	63	1000	10.0 J	2.4 J	**159 J**	6.6 J	1.5 J	1.4 R	2.1 R	**97.8 J**	2.9 R	3.6 R	3.2 R	14.8 J	6.7 R	4.2 R	3.3 J	7.5 J
Magnesium			17,000 J	2,730 J	16,500 J	8,880 J	8,650 J	6,280 J	7,190 J	4,040 J	13,300 J	12,500 J	7,090 J	7,120 J	19,100 J	8,140 J	6,460 J	13,000 J
Manganese	1,600	10,000	498 J	205 J	260 J	347 J	290 J	265 J	286 J	329 J	394 J	279 J	1,130 J	318 J	632 J	673 J	433 J	375 J
Nickel	30	310	**54.1 J**	**183 J**	**94.7 J**	6.9 BJ	6.7 UJ	**172 J**	**334 J**	**83.8 J**	9.2 J	7.3 BJ	**85.9 J**	**220 J**	**187 J**	**356 J**	**117 J**	**214 J**
Potassium			1,100 J	757 BJ	758 BJ	1,090 J	820 BJ	2,950 J	1,320 J	706 BJ	1,330 J	785 BJ	1,230 J	679 BJ	1,130 J	789 BJ	877 BJ	1,120 J
Selenium	3.9	1,500	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.0 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ
Silver	2	1,500	2.1 U	**3.4 J**	2.2 U	2.3 U	2.2 U	2.1 U	2.3 U	2.3 U	2.2 U	2.1 U	2.2 U	**2.6 J**	**3.3 J**	2.2 U	**3.6 J**	**2.9 J**
Sodium			212 U	289 BJ	492 BJ	226 U	225 U	208 U	228 U	226 U	217 U	212 U	218 U	891 BJ	895 BJ	216 U	571 BJ	260 BJ
Thallium			13.0 J	21.3 J	15.0 J	10.6 J	14.4 J	4.7 J	21.2 J	10.5 J	16.1 J	15.1 J	12.5 J	13.5 J	16.9 J	9.2 J	2.2 UJ	2.2 UJ
Vanadium			12.2 J	6.6 U	12.8 J	8.5 BJ	8.5 BJ	15.1 J	8.4 BJ	16.8 J	9.9 BJ	7.3 BJ	11.8 J	8.8 BJ	11.4 J	8.7 BJ	8.3 BJ	8.7 BJ
Zinc	109	10,000	**626 J**	**361 J**	79.0 J	12.3 J	18.1 J	**356 J**	**498 J**	94.0 J	24.3 J	31.8 J	**227 J**	**5,190 J**	**4,960 J**	**416 J**	**2,810 J**	**628 J**
Mercury	0.18	2.8	0.053 UJ	0.055 UJ	0.14 J	0.056 UJ	0.056 UJ	0.052 UJ	0.057 UJ	0.13 J	0.054 UJ	0.053 UJ	0.055 UJ	0.056 UJ	**19.4 J**	**17.8 J**	**4.0 J**	**2.9 J**
Cyanide	27	27	1.1 U	**53.5 J**	1.1 U	1.1 U	1.1 U	1.0 U	1.1 U	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	12.9 J	11.1 J	1.3 J	4.1 J	**48.6 J**
% Moisture			5.5	9.5	8.3	11.5	10.9	4.1	12.2	11.3	7.8	5.4	8.4	10.7	7.3	7.6	7.2	10.5

Notes:
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All sample results reported in parts per million (ppm).

Table 5
Soil Boring Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-27E	SB-28A	SB-28B	SB-28C	SB-28D	SB-28E	SB-28F	SB-29A	SB-29B	SB-29C	SB-29D	SB-29E	SB-29F	SB-30A	SB-30B	SB-30C
Aluminum			4,150 J	2,760 J	2,390 J	2,010 J	2,950 J	3,480 J	2,340 J	7,830 J	4,770 J	3,510 J	2,980 J	3,460 J	3,390 J	13,400 J	6,400 J	1,930 J
Antimony			3.4 UJ	3.7 UJ	3.2 UJ	3.2 UJ	3.2 UJ	3.2 UJ	3.4 UJ	166 J	4.8 BJ	4.6 BJ	3.4 UJ	3.4 UJ	3.3 UJ	3.6 UJ	3.5 UJ	3.2 UJ
Arsenic	13	16	2.2 UJ	8.1 J	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.3 UJ	**32.5 J**	2.3 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	**18.8 J**	2.5 J	2.1 UJ
Barium	350	400	31.9 BJ	72.4 J	20.6 BJ	19.9 BJ	20.8 BJ	26.1 BJ	16.0 BJ	104 J	25.7 BJ	22.2 BJ	25.7 BJ	44.4 J	19.1 BJ	213 J	70.0 J	22.5 BJ
Beryllium	7.2	590	0.68 UJ	0.73 UJ	0.64 UJ	0.63 UJ	0.63 UJ	0.65 UJ	0.68 UJ	0.79 BJ	0.69 UJ	0.67 UJ	0.68 UJ	0.67 UJ	0.66 UJ	1.4 J	0.71 UJ	0.63 UJ
Cadmium	2.5	9.3	**11.0 J**	**8.8 J**	1.1 UJ	1.0 UJ	1.0 UJ	1.1 UJ	1.1 UJ	**3.2 J**	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.9 J	1.2 UJ	1.1 UJ
Calcium			137,000 J	42,000 J	120,000 J	223,000 J	89,200 J	75,500 J	59,900 J	38,700 J	25,600 J	92,300 J	147,000 J	128,000 J	133,000 J	3,260 J	42,800 J	180,000 J
Chromium	30	1500	**33.9 J**	**58.0 J**	4.2 J	5.2 J	5.0 J	4.8 J	3.9 J	**75.2 J**	8.6 J	29.4 J	8.2 J	6.9 J	6.8 J	18.0 J	8.4 J	3.9 J
Cobalt			4.5 UJ	9.1 BJ	4.2 UJ	4.2 UJ	4.2 UJ	4.3 UJ	4.5 UJ	8.8 BJ	4.6 UJ	4.6 BJ	4.5 UJ	4.5 UJ	4.4 UJ	22.7 J	5.3 BJ	4.2 UJ
Copper	50	270	**159 J**	**75.8 J**	9.7 J	4.5 BJ	6.8 J	13.9 J	6.9 J	**242 J**	45.0 J	33.8 J	11.6 J	22.9 J	20.8 J	**70.0 J**	15.9 J	6.0 J
Iron			11,300 J	53,200 J	8,960 J	5,800 J	8,730 J	11,600 J	6,360 J	36,600 J	12,600 J	9,010 J	8,360 J	9,650 J	8,210 J	30,500 J	15,900 J	5,850 J
Lead	63	1000	12.3 J	**301 J**	4.5 J	0.63 UJ	2.7 J	4.0 J	1.8 J	**989 J**	12.8 J	55.8 J	27.8 J	4.0 J	5.3 J	**111 J**	29.5 J	1.3 J
Magnesium			11,000 J	19,000 J	30,000 J	28,500 J	22,000 J	21,500 J	4,470 J	6,410 J	4,600 J	16,400 J	10,400 J	8,450 J	19,200 J	3,580 J	3,700 J	30,800 J
Manganese	1,600	10,000	576 J	542 J	911 J	419 J	422 J	634 J	235 J	839 J	445 J	234 J	286 J	393 J	423 J	733 J	825 J	437 J
Nickel	30	310	**306 J**	**119 J**	9.8 J	6.3 UJ	7.6 BJ	13.0 J	10.4 J	**231 J**	12.3 J	17.7 J	26.0 J	**153 J**	**85.3 J**	**40.4 J**	13.0 J	6.3 UJ
Potassium			1,220 J	659 BJ	1,100 J	1,480 J	937 BJ	1,020 J	800 BJ	1,070 J	756 BJ	1,170 J	1,130 J	1,410 J	1,410 J	3,380 J	1,050 J	912 BJ
Selenium	3.9	1,500	1.1 UJ	1.2 BJ	1.1 UJ	1.0 UJ	1.0 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1.1 R
Silver	2	1,500	**4.8 J**	**3.9 J**	2.1 UJ	**2.2 J**	2.1 UJ	2.2 UJ	2.3 UJ	**6.6 J**	2.3 UJ	2.2 UJ	2.2 UJ	**4.0 J**	**3.0 J**	2.4 UJ	2.4 UJ	2.1 UJ
Sodium			459 BJ	244 UJ	212 UJ	300 BJ	210 UJ	216 UJ	226 UJ	228 UJ	229 UJ	224 UJ	225 UJ	256 BJ	291 UJ	268 BJ	438 BJ	256 BJ
Thallium			2.2 UJ	2.4 UJ	2.1 UJ	2.1 UJ	2.1 UJ	2.2 UJ	2.3 UJ	2.3 UJ	2.3 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.2 UJ	2.4 UJ	2.4 UJ	2.1 UJ
Vanadium			10.3 J	42.3 J	8.1 BJ	6.7 BJ	14.6 J	11.6 J	7.2 BJ	24.5 J	12.0 J	13.0 J	7.5 BJ	10.7 J	9.3 BJ	21.6 J	17.5 J	7.3 BJ
Zinc	109	10,000	**1,980 J**	**578 J**	20.1 J	14.4 J	30.4 J	29.8 J	18.1 J	**296 J**	28.5 J	**121 J**	26.0 J	25.3 J	22.2 J	**150 J**	47.9 J	22.7 J
Mercury	0.18	2.8	**19.8 J**	**0.95 J**	0.053 UJ	0.052 UJ	0.055 J	0.054 UJ	**0.32 J**	**0.26 J**	0.088 J	0.13 J	0.075 J	0.056 UJ	0.055 UJ	**0.41 J**	0.18 J	**0.28 J**
Cyanide	27	27	**31.1 J**	3.6 J	1.1 UJ	1.0 UJ	1.0 UJ	1.1 BJ	1.1 UJ	3.6 J	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.1 UJ	1.2 UJ	1.2 UJ	1.1 UJ
% Moisture			11.2	18.1	5.7	4.6	4.7	7.6	11.3	12.1	12.6	10.8	11.2	10.3	9.1	17.8	15.3	5.3

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All sample results reported in parts per million (ppm).

Table 5
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H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	SB-30D	SB-30E	SB-30F	Field Duplicate 5	Field Duplicate 6	Field Duplicate 7	Field Duplicate 9	SB-31 A	SB-31B	SB-31C	SB-31D	SB-31E
Aluminum			3,560 J	2,260 J	1,220 J	594 J	4,790 J	2,610 J	2,560 J	13,200 J	5,980 J	2,500 J	1,780 J	2,340 J
Antimony			3.3 UJ	10.2 BJ	3.4 UJ	3.2 UJ	11.6 BJ	3.2 UJ	9.1 BJ	3.6 UJ	3.4 UJ	3.4 UJ	3.2 UJ	3.2 UJ
Arsenic	13	16	2.2 UJ	**18.4 J**	2.2 UJ	2.1 UJ	**36.9 J**	2.2 UJ	2.3 UJ	5.1 J	2.3 UJ	2.3 UJ	2.2 UJ	2.1 UJ
Barium	350	400	35.3 BJ	27.0 BJ	30.5 BJ	265 J	61.5 J	19.7 BJ	21.5 BJ	70.0 J	32.3 BJ	32.2 BJ	14.2 BJ	18.3 BJ
Beryllium	7.2	590	0.67 UJ	0.65 UJ	0.67 UJ	0.63 UJ	0.69 UJ	0.65 UJ	0.70 UJ	0.72 UJ	0.69 UJ	0.68 UJ	0.65 UJ	0.64 UJ
Cadmium	2.5	9.3	1.4 J	1.1 UJ	1.1 UJ	1.0 UJ	**42.7 J**	1.1 UJ	1.2 UJ	**3.0 J**	1.2 UJ	1.7 J	1.1 UJ	1.1 UJ
Calcium			53,300 J	197,000 J	96,600 J	91,300 J	75,800 J	98,600 J	117,000 J	21,300 J	275,000 J	99,800 J	40,800 J	112,000 J
Chromium	30	1500	5.9 J	4.8 J	4.0 J	3.0 J	10.5 J	14.1 J	16.1 J	15.9 J	4.8 J	5.7 J	28.7 J	3.9 J
Cobalt			4.4 UJ	4.3 UJ	4.5 UJ	4.2 UJ	8.9 BJ	4.3 UJ	4.6 UJ	5.4 BJ	4.6 UJ	4.5 UJ	4.3 UJ	4.3 UJ
Copper	50	270	23.0 J	9.9 J	7.8 J	2.1 UJ	**78.2 J**	17.7 J	21.5 J	**75.2 J**	**64.5 J**	**50.1 J**	2.4 BJ	7.2 J
Iron			10,300 J	9,530 J	5,820 J	9,330 J	24,500 J	7,690 J	7,210 J	40,800 J	5,230 J	12,500 J	6,190 J	6,730 J
Lead	63	1000	18.8 J	3.9 J	4.7 J	2.3 J	**418 J**	2.4 J	**68.5 J**	**169 J**	32.1 J	35.8 J	1.9 J	1.3 J
Magnesium			12,300 J	13,800 J	43,400 J	35,600 J	4,550 J	14,100 J	18,600 J	4,820 J	4,030 J	10,300 J	3,420 J	6,900 J
Manganese	1,600	10,000	410 J	679 J	828 J	496 J	488 J	308 J	347 J	344 J	276 J	378 J	133 J	306 J
Nickel	30	310	9.9 J	**152 J**	6.7 UJ	6.3 UJ	**189 J**	**91.5 J**	14.3 J	**944 J**	**176 J**	**97.9 J**	7.7 BJ	8.8 J
Potassium			539 BJ	1,220 J	547 BJ	516 BJ	1,060 J	1,090 J	978 BJ	1,140 J	1,860 J	778 BJ	685 BJ	1,030 J
Selenium	3.9	1,500	1.1 R	1.1 R	1.1 R	1.0 R	1.1 R	1.1 R	1.2 R	1.2 R	1.2 R	1.1 R	1.1 R	1.1 R
Silver	2	1,500	2.2 UJ	**3.7 J**	2.2 UJ	2.1 UJ	2.3 UJ	**50.3 J**	2.3 UJ	2.4 UJ	**2.5 J**	**3.0 J**	2.2 UJ	2.1 UJ
Sodium			223 UJ	216 UJ	242 BJ	210 UJ	451 BJ	540 BJ	232 UJ	2,250 J	1,140 J	226 UJ	216 UJ	221 BJ
Thallium			2.2 UJ	2.2 UJ	2.2 UJ	2.1 UJ	2.3 UJ	2.2 UJ	2.3 UJ	2.4 UJ	2.3 UJ	2.3 UJ	2.2 UJ	2.1 UJ
Vanadium			8.9 BJ	9.6 BJ	6.7 UJ	6.3 UJ	21.1 J	7.1 BJ	9.4 BJ	24.3 J	10.1 J	6.8 UJ	6.5 UJ	8.1 BJ
Zinc	109	10,000	**269 J**	18.1 J	47.9 J	4.1 J	**2,250 J**	**1,420 J**	64.8 J	**274 J**	**133 J**	**462 J**	13.2 J	19.9 J
Mercury	0.18	2.8	0.056 UJ	0.054 UJ	0.061 J	0.053 UJ	0.074 J	**1.9 J**	0.058 UJ	**4.6 J**	**2.4 J**	**0.50 J**	0.054 UJ	0.053 UJ
Cyanide	27	27	1.1 UJ	1.1 UJ	1.1 UJ	1.0 UJ	5.5 J	1.1 UJ	1.2 UJ	26.1 J	1.2 UJ	1.1 UJ	1.5 J	1.1 UJ
% Moisture			10.1	7.5	10.7	4.9	12.6	7.3	13.9	17.3	12.8	11.7	7.3	6.0

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
J, UJ and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
U = Compund was analyzed for, but not detected.
B = Analyte detected in the associated Method Blank.
R = Analytical data considered to be unreliable and is rejected.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per million (ppm).

Table 6
Soil Boring Analytical Results - Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-1E	SB-2F	SB-3A	SB-3F	SB-4F	SB-5D	SB-6E	SB-7E	SB-7 (13.5-14 fbg)	SB-8E	Field Duplicate	SB-9E	SB-10D	SB-10E	SB-10F	SB-11E	SB-12D	SB-13E	SB-14E
1,1,1-Trichloroethane	680	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,1,2,2-Tetrachloroethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,1,2-Trichloroethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,1-Dichloroethane	270	240,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,1-Dichloroethene	330	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,2,4-Trimethylbenzene	3,600	190,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,2-Dichlorobenzene	1,100	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,2-Dichloroethane	20	30,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,2-Dichloropropane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,3,5-Trimethylbenzene	8,400	190,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,3-Dichlorobenzene	2,400	280,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,4-Dichlorobenzene	1,800	130,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
1,4-Dioxane	100	130,000	110 U	110 U	110 U	110 U	140 UJ	550 UJ	670 UJ	680 UJ	210 U	680 UJ	130 UJ	630 UJ	110 U	260 U	650 UJ	630 UJ	590 UJ	110 U	110 U
2-Butanone	120		11 U	11 U	11 U	11 U	14 UJ	55 UJ	67 UJ	68 UJ	21 U	68 UJ	13 UJ	63 UJ	11 U	26 U	65 UJ	63 UJ	59 UJ	11 U	11 U
2-Hexanone			11 U	11 U	11 U	11 U	14 UJ	55 UJ	67 UJ	68 UJ	21 U	68 UJ	13 UJ	63 UJ	11 U	26 U	65 UJ	63 UJ	59 UJ	11 U	11 U
4-Methyl-2-pentanone			11 U	11 U	11 U	11 U	14 UJ	55 UJ	67 UJ	68 UJ	21 U	68 UJ	13 UJ	63 UJ	11 U	26 U	65 UJ	63 UJ	59 UJ	11 U	11 U
Acetone	50	500,000	11 U	11 U	11 U	11 U	14 UJ	**260 J**	**110 J**	**140 J**	27 J	150 J	13 UJ	**170 J**	11 U	27 J	65 UJ	63 UJ	160 J	11 U	8 J
Benzene	60	44,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Bromodichloromethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Bromoform			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Bromomethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Carbon disulfide			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Carbon tetrachloride	760	22,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Chlorobenzene	1,100	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Chloroethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Chloroform	370	350,000	6 U	3 J	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Chloromethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
cis-1,2-Dichloroethene	250	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
cis-1,3-Dichloropropene			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Dibromochloromethane			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Ethylbenzene	1,000	390,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
m,p-Xylene	260	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	2 J	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Methyl tert-butyl ether	930	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Methylene chloride	50	500,000	6 U	6 U	1 J	6 U	7 UJ	**240 J**	40 J	34 UJ	11 U	**100 J**	7 UJ	**64 J**	6 U	13 U	49 J	32 UJ	**62 J**	5 U	6 U
n-Butylbenzene	12,000	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
n-Propylbenzene	3,900	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
o-Xylene	260	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
sec-Butylbenzene	11,000	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Styrene			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
tert-Butylbenzene	5,900	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Tetrachloroethene	1,300	150,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Toluene	700	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	13 J	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
trans-1,2-Dichloroethene	190	500,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
trans-1,3-Dichloropropene			6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U
Trichloroethene	470	200,000	6 U	3 J	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	2 J
Vinyl chloride	20	13,000	6 U	6 U	6 U	6 U	7 UJ	27 UJ	33 UJ	34 UJ	11 U	34 UJ	7 UJ	32 UJ	6 U	13 U	32 UJ	32 UJ	29 UJ	5 U	6 U

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
U = Compound was analyzed for, but not detected
J or UJ = Analytical data considered estimation of the conditions being measured
NS = Not Sampled
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 6
Soil Boring Analytical Results - Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-15E	SB-16E	SB-17E	SB-17 (11.5 fbg)	SB-18E	SB-19E	SB-20A	SB-21E	SB-22E	SB-23F	SB-24E	SB-25E	SB-26E	SB-27E	SB-28E	SB-29D	SB-30E	Field Duplicate 8	Field Duplicate 9	SB-31D
1,1,1-Trichloroethane	680	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,1,2,2-Tetrachloroethane			6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 UJ
1,1,2-Trichloroethane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,1-Dichloroethane	270	240,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,1-Dichloroethene	330	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,2,4-Trimethylbenzene	3,600	190,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	2,100 J	6 U	29 UJ	350 J
1,2-Dichlorobenzene	1,100	500,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,2-Dichloroethane	20	30,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,2-Dichloropropane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,3,5-Trimethylbenzene	8,400	190,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	360 J
1,3-Dichlorobenzene	2,400	280,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,4-Dichlorobenzene	1,800	130,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
1,4-Dioxane	100	130,000	110 U	110 U	550 UJ	120 UJ	110 U	120 U	NS	110 U	540 UJ	110 U	110 U	570 U	110 U	110 U	540 UJ	560 UJ	11,000 UJ	110 U	580 UJ	1,100 U
2-Butanone	120		11 U	11 U	55 UJ	12 UJ	11 U	12 U	NS	11 U	54 UJ	11 U	11U	57 U	11 U	11 U	54 UJ	56 UJ	1,100 UJ	11 U	58 UJ	110 U
2-Hexanone			11 U	11 U	55 UJ	12 UJ	11 U	12 U	NS	11 U	54 UJ	11 U	11 U	57 U	11 U	11 U	54 UJ	56 UJ	1,100 UJ	11 U	58 UJ	110 U
4-Methyl-2-pentanone			11 U	11 U	55 UJ	12 UJ	11 U	12 U	NS	11 U	54 UJ	11 U	11 U	57 U	11 U	11 U	54 UJ	56 UJ	1,100 UJ	11 U	58 UJ	110 U
Acetone	50	500,000	11 U	16 J	55 UJ	**160 J**	11 U	12 U	NS	11 U	54 UJ	11 J	11 U	57 U	11 U	11 U	54 UJ	56 UJ	1,100 UJ	11 U	140 J	**130 J**
Benzene	60	44,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	52 J	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Bromodichloromethane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Bromoform			6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 UJ
Bromomethane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 UJ	28 U	6 UJ	6 UJ	27 UJ	28 UJ	540 UJ	6 UJ	29 UJ	54 U
Carbon disulfide			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Carbon tetrachloride	760	22,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Chlorobenzene	1,100	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	460 J	6 U	6 U	28 U	6 U	6 U	370 J	160 J	540 UJ	6 U	29 UJ	95 J
Chloroethane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Chloroform	370	350,000	8 J	6 U	27 UJ	6 UJ	6 U	7 J	NS	6 J	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Chloromethane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
cis-1,2-Dichloroethene	250	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
cis-1,3-Dichloropropene			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Dibromochloromethane			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Ethylbenzene	1,000	390,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	410 J	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	2 J	19 J	54 U
m,p-Xylene	260	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	**1900 J**	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	7 J	29 UJ	54 U
Methyl tert-butyl ether	930	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Methylene chloride	50	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	**100 J**
n-Butylbenzene	12,000	500,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	1200 EJ	6 U	6 U	28 U	6 U	6 U	1000 J	810 J	2,800 J	6 U	1,400 DJ	770 J
n-Propylbenzene	3,900	500,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	1800 DJ	6 U	6 U	28 U	6 U	6 U	1800 DJ	990 J	660 J	4 J	780 DJ	580 J
o-Xylene	260	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	20 J	540 UJ	6 U	29 UJ	54 U
sec-Butylbenzene	11,000	500,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	710 J	540 UJ	6 J	970 DJ	750 J
Styrene			6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 UJ
tert-Butylbenzene	5,900	500,000	6 UJ	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 UJ
Tetrachloroethene	1,300	150,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
Toluene	700	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	7 J	29 U	54 U
trans-1,2-Dichloroethene	190	500,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 U	6 U	6 U	27 UJ	28 UJ	540 UJ	6 U	29 UJ	54 U
trans-1,3-Dichloropropene			6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 UJ	28 U	6 UJ	6 UJ	27 UJ	28 UJ	540 UJ	6 UJ	29 UJ	54 U
Trichloroethene	470	200,000	18 J	6 U	27 UJ	21 J	6 U	6 U	NS	6 U	27 UJ	9 J	6 J	28 U	8 J	5 J	27 UJ	28 UJ	540 UJ	19 J	29 UJ	54 U
Vinyl chloride	20	13,000	6 U	6 U	27 UJ	6 UJ	6 U	6 U	NS	6 U	27 UJ	6 U	6 U	28 UJ	6 U	6 U	27 UJ	28 UJ	540 UJ	6 UJ	29 UJ	54 UJ

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
U = Compound was analyzed for, but not detected
J or UJ = Analytical data considered estimation of the conditions being measured
NS = Not Sampled
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 7
Soil Boring Analytical Results - Semi-Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-1E	SB-2F	SB-3A	Field Duplicate 1	SB-3F	SB-4F	SB-5D	SB-6E	SB-7E
(3+4)-Methylphenol	330		180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
1,2,4,5-Tetrachlorobenzene			180 U	190 U	190 UJ	200 UJ	190 U	230 U	180 U	220 U	230 UJ
1,2,4-Trichlorobenzene	3,600		180 UJ	190 UJ	190 U	200 U	190 UJ	230 U	180 U	220 UJ	230 UJ
1,2-Dichlorobenzene	1,100	500,000	180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
1,3-Dichlorobenzene	2,400	280,000	180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
1,4-Dichlorobenzene	1,800	130,000	180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
2,4,5-Trichlorophenol			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 U	440 UJ	450 UJ
2,4,6-Trichlorophenol			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
2,4-Dichlorophenol			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
2,4-Dimethylphenol			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
2,4-Dinitrophenol			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 U	440 UJ	450 UJ
2,4-Dinitrotoluene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
2,6-Dinitrotoluene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
2-Chloronaphthalene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
2-Chlorophenol			180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
2-Methylnaphthalene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
2-Methylphenol			180 UJ	190 UJ	190 UJ	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
2-Nitroaniline			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 U	440 UJ	450 UJ
2-Nitrophenol			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
3,3´-Dichlorobenzidine			180 U	190 U	190 UJ	200 U	190 U	230 U	180 U	220 U	230 UJ
3-Nitroaniline			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 U	440 UJ	450 UJ
4,6-Dinitro-2-methylphenol			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 UJ	440 UJ	450 UJ
4-Bromophenyl phenyl ether			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
4-Chloro-3-methylphenol			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
4-Chloroaniline			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
4-Chlorophenyl phenyl ether			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
4-Nitroaniline			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 U	440 UJ	450 UJ
4-Nitrophenol			370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 U	440 UJ	450 UJ
Acenaphthene	20,000	500,000	180 UJ	190 UJ	130 J	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Acenaphthylene	100,000	500,000	180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Acetophenone			180 UJ	190 UJ	190 UJ	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Anthracene	100,000	500,000	180 UJ	190 UJ	220 J	200 UJ	190 UJ	230 U	180 UJ	220 UJ	230 UJ
Atrazine			180 UJ	190 UJ	190 UJ	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
Benz(a)anthracene	1,000	5,600	180 U	190 U	700 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Benzaldehyde			180 UJ	190 UJ	190 UJ	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
Benzo(a)pyrene	1,000	1,000	180 U	190 U	630 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Benzo(b)fluoranthene	1,000	5,600	180 UJ	190 U	970 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Benzo(g,h,i)perylene	100,000	500,000	180 U	190 U	420 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Benzo(k)fluoranthene	800	56,000	180 U	190 U	370 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Biphenyl			180 UJ	190 UJ	190 UJ	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Bis(2-chloroethoxy)methane			180 UJ	190 UJ	200 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
Bis(2-chloroethyl)ether			180 UJ	190 UJ	200 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
Bis(2-chloroisopropyl)ether			180 UJ	190 UJ	200 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
Bis(2-ethylhexyl)phthalate			180 UJ	190 U	1,200 U	200 U	190 U	230 U	180 U	220 U	230 UJ
Butyl benzyl phthalate			180 U	190 U	190 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Caprolactam			180 UJ	190 UJ	190 UJ	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Carbazole			180 UJ	190 UJ	170 J	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
Chrysene	1,000	56,000	180 U	190 U	750 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Di-n-butyl phthalate			180 UJ	190 UJ	100 J	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
Di-n-octyl phthalate			180 U	190 U	190 UJ	200 U	190 U	230 U	180 U	220 U	230 UJ
Dibenz(a,h)anthracene	330	560	180 U	190 U	190 UJ	200 U	190 U	230 U	180 U	220 U	230 UJ
Dibenzofuran			180 UJ	190 UJ	80 J	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Diethyl phthalate			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Dimethyl phthalate			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Fluoranthene	100,000	500,000	180 UJ	190 UJ	930 J	200 UJ	190 UJ	230 UJ	180 UJ	220 UJ	230 UJ
Fluorene	30,000	500,000	180 UJ	190 UJ	200 J	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Hexachlorobenzene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 UJ	220 UJ	230 UJ
Hexachlorobutadiene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
Hexachlorocyclopentadiene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Hexachloroethane			180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
Indeno(1,2,3-cd)pyrene	500	5,600	180 U	190 U	490 J	200 U	190 U	230 U	180 U	220 U	230 UJ
Isophorone			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
N-Nitrosodi-n-propylamine			180 UJ	190 UJ	190 U	200 UJ	190 U	230 U	180 U	220 UJ	230 UJ
N-Nitrosodiphenylamine			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 UJ	180 U	220 UJ	230 UJ
Naphthalene	12,000	500,000	180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
Nitrobenzene			180 UJ	190 UJ	190 U	200 UJ	190 UJ	230 U	180 U	220 UJ	230 UJ
Pentachlorophenol	800	6,700	370 UJ	380 UJ	380 U	400 UJ	370 UJ	460 UJ	370 UJ	440 UJ	450 UJ
Phenanthrene	100,000	500,000	180 UJ	190 UJ	1,300 J	200 UJ	190 UJ	230 U	180 UJ	220 UJ	230 UJ
Phenol	330	500,000	180 UJ	190 UJ	190 U	200 UJ	190 U	230 UJ	180 U	220 UJ	230 UJ
Pyrene	100,000	500,000	52 J	190 U	2,500 J	200 U	190 U	230 U	180 U	220 U	230 UJ

Notes:
J or UJ = Analytical data considered estimation of the conditions being measured
U = Compound was analyzed for, but not detected
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 7
Soil Boring Analytical Results - Semi-Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-8E	Field Duplicate	SB-9E	SB-10D	SB-10F	SB-11E	SB-12D	SB-13E	SB-14E
(3+4)-Methylphenol	330		230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
1,2,4,5-Tetrachlorobenzene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
1,2,4-Trichlorobenzene	3,600		230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
1,2-Dichlorobenzene	1,100	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
1,3-Dichlorobenzene	2,400	280,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
1,4-Dichlorobenzene	1,800	130,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2,4,5-Trichlorophenol			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
2,4,6-Trichlorophenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2,4-Dichlorophenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2,4-Dimethylphenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2,4-Dinitrophenol			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
2,4-Dinitrotoluene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2,6-Dinitrotoluene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2-Chloronaphthalene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2-Chlorophenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2-Methylnaphthalene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2-Methylphenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
2-Nitroaniline			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	360 UJ
2-Nitrophenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
3,3´-Dichlorobenzidine			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
3-Nitroaniline			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
4,6-Dinitro-2-methylphenol			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
4-Bromophenyl phenyl ether			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
4-Chloro-3-methylphenol			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
4-Chloroaniline			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
4-Chlorophenyl phenyl ether			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
4-Nitroaniline			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
4-Nitrophenol			460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
Acenaphthene	20,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Acenaphthylene	100,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Acetophenone			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Anthracene	100,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Atrazine			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Benz(a)anthracene	1,000	5,600	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Benzaldehyde			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Benzo(a)pyrene	1,000	1,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Benzo(b)fluoranthene	1,000	5,600	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Benzo(g,h,i)perylene	100,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Benzo(k)fluoranthene	800	56,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Biphenyl			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Bis(2-chloroethoxy)methane			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Bis(2-chloroethyl)ether			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Bis(2-chloroisopropyl)ether			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Bis(2-ethylhexyl)phthalate			230 UJ	220 UJ	280 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Butyl benzyl phthalate			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Caprolactam			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Carbazole			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Chrysene	1,000	56,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Di-n-butyl phthalate			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Di-n-octyl phthalate			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Dibenz(a,h)anthracene	330	560	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Dibenzofuran			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Diethyl phthalate			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Dimethyl phthalate			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Fluoranthene	100,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Fluorene	30,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Hexachlorobenzene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Hexachlorobutadiene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Hexachlorocyclopentadiene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Hexachloroethane			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Indeno(1,2,3-cd)pyrene	500	5,600	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Isophorone			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
N-Nitrosodi-n-propylamine			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
N-Nitrosodiphenylamine			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Naphthalene	12,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Nitrobenzene			230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Pentachlorophenol	800	6,700	460 UJ	440 UJ	420 UJ	380 UJ	440 UJ	420 UJ	390 UJ	360 UJ	370 UJ
Phenanthrene	100,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Phenol	330	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ
Pyrene	100,000	500,000	230 UJ	220 UJ	210 UJ	190 UJ	220 UJ	210 UJ	200 UJ	180 UJ	180 UJ

Notes:
J or UJ = Analytical data considered estimation of the conditions being measured
U = Compound was analyzed for, but not detected
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 7
Soil Boring Analytical Results - Semi-Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-15E	SB-16E	SB-17E	SB-18E	SB-19E	SB-20A	SB-21E	SB-22E	SB-23F
(3+4)-Methylphenol	330		190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
1,2,4,5-Tetrachlorobenzene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
1,2,4-Trichlorobenzene	3,600		190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
1,2-Dichlorobenzene	1,100	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
1,3-Dichlorobenzene	2,400	280,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
1,4-Dichlorobenzene	1,800	130,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2,4,5-Trichlorophenol			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
2,4,6-Trichlorophenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2,4-Dichlorophenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2,4-Dimethylphenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2,4-Dinitrophenol			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
2,4-Dinitrotoluene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2,6-Dinitrotoluene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2-Chloronaphthalene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2-Chlorophenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2-Methylnaphthalene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2-Methylphenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
2-Nitroaniline			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
2-Nitrophenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
3,3´-Dichlorobenzidine			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
3-Nitroaniline			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
4,6-Dinitro-2-methylphenol			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
4-Bromophenyl phenyl ether			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
4-Chloro-3-methylphenol			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
4-Chloroaniline			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
4-Chlorophenyl phenyl ether			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
4-Nitroaniline			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
4-Nitrophenol			380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
Acenaphthene	20,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Acenaphthylene	100,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Acetophenone			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Anthracene	100,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Atrazine			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Benz(a)anthracene	1,000	5,600	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Benzaldehyde			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Benzo(a)pyrene	1,000	1,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Benzo(b)fluoranthene	1,000	5,600	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Benzo(g,h,i)perylene	100,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Benzo(k)fluoranthene	800	56,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Biphenyl			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Bis(2-chloroethoxy)methane			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Bis(2-chloroethyl)ether			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Bis(2-chloroisopropyl)ether			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Bis(2-ethylhexyl)phthalate			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Butyl benzyl phthalate			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Caprolactam			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Carbazole			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Chrysene	1,000	56,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Di-n-butyl phthalate			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Di-n-octyl phthalate			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Dibenz(a,h)anthracene	330	560	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Dibenzofuran			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Diethyl phthalate			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Dimethyl phthalate			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Fluoranthene	100,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Fluorene	30,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Hexachlorobenzene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Hexachlorobutadiene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Hexachlorocyclopentadiene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Hexachloroethane			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Indeno(1,2,3-cd)pyrene	500	5,600	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Isophorone			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
N-Nitrosodi-n-propylamine			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
N-Nitrosodiphenylamine			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Naphthalene	12,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Nitrobenzene			190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Pentachlorophenol	800	6,700	380 UJ	370 UJ	370 UJ	370 UJ	390 UJ	NS	370 UJ	36,000 UJ	370 UJ
Phenanthrene	100,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	4,900 J	190 UJ
Phenol	330	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ
Pyrene	100,000	500,000	190 UJ	190 UJ	180 UJ	190 UJ	190 UJ	NS	180 UJ	18,000 UJ	190 UJ

Notes:
J or UJ = Analytical data considered estimation of the conditions being measured
U = Compound was analyzed for, but not detected
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 7
Soil Boring Analytical Results - Semi-Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-24E	SB-25E	SB-26E	SB-27E	SB-28E	SB-29D	SB-30E	SB-31D
(3+4)-Methylphenol	330		180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
1,2,4,5-Tetrachlorobenzene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
1,2,4-Trichlorobenzene	3,600		180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
1,2-Dichlorobenzene	1,100	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
1,3-Dichlorobenzene	2,400	280,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
1,4-Dichlorobenzene	1,800	130,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2,4,5-Trichlorophenol			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
2,4,6-Trichlorophenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2,4-Dichlorophenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2,4-Dimethylphenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2,4-Dinitrophenol			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
2,4-Dinitrotoluene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2,6-Dinitrotoluene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2-Chloronaphthalene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2-Chlorophenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2-Methylnaphthalene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2-Methylphenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
2-Nitroaniline			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
2-Nitrophenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
3,3´-Dichlorobenzidine			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
3-Nitroaniline			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
4,6-Dinitro-2-methylphenol			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
4-Bromophenyl phenyl ether			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
4-Chloro-3-methylphenol			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
4-Chloroaniline			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
4-Chlorophenyl phenyl ether			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
4-Nitroaniline			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
4-Nitrophenol			370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
Acenaphthene	20,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Acenaphthylene	100,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Acetophenone			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Anthracene	100,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Atrazine			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Benz(a)anthracene	1,000	5,600	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Benzaldehyde			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Benzo(a)pyrene	1,000	1,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Benzo(b)fluoranthene	1,000	5,600	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Benzo(g,h,i)perylene	100,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Benzo(k)fluoranthene	800	56,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Biphenyl			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Bis(2-chloroethoxy)methane			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Bis(2-chloroethyl)ether			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Bis(2-chloroisopropyl)ether			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Bis(2-ethylhexyl)phthalate			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Butyl benzyl phthalate			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Caprolactam			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Carbazole			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Chrysene	1,000	56,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Di-n-butyl phthalate			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Di-n-octyl phthalate			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Dibenz(a,h)anthracene	330	560	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Dibenzofuran			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Diethyl phthalate			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Dimethyl phthalate			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Fluoranthene	100,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Fluorene	30,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Hexachlorobenzene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Hexachlorobutadiene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Hexachlorocyclopentadiene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Hexachloroethane			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Indeno(1,2,3-cd)pyrene	500	5,600	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Isophorone			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
N-Nitrosodi-n-propylamine			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
N-Nitrosodiphenylamine			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Naphthalene	12,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Nitrobenzene			180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Pentachlorophenol	800	6,700	370 UJ	380 UJ	370 UJ	370 UJ	36,000 UJ	37,000 UJ	36,000 UJ	36,000 UJ
Phenanthrene	100,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	12,000 J	19,000 UJ	9,900 J	18,000 UJ
Phenol	330	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ
Pyrene	100,000	500,000	180 UJ	190 UJ	190 UJ	190 UJ	18,000 UJ	19,000 UJ	18,000 UJ	18,000 UJ

Notes:
J or UJ = Analytical data considered estimation of the conditions being measured
U = Compound was analyzed for, but not detected
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 8
Soil Boring Analytical Results - Pesticides/PCBs
H.M. Quackenbush Site
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-1E	SB-2F	Field Duplicate 1	SB-3F	SB-4F	SB-5D	SB-6E	SB-7E	SB-8E	Field Duplicate 2	SB-9E	SB-10F	SB-11E	SB-12D	SB-13E	SB-14E
4,4´-DDD	3	92,000	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
4,4´-DDE	3	62,000	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
4,4´-DDT	3	47,000	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
Aldrin	5	680	47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
alpha-BHC	20	3,400	47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
alpha-Chlordane	94		47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
Aroclor 1016	100	1,000	910 UJ	940 UJ	980 UJ	930 UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
Aroclor 1221	100	1,000	910 UJ	940 UJ	980 UJ	930UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
Aroclor 1232	100	1,000	910 UJ	940 UJ	980 UJ	930 UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
Aroclor 1242	100	1,000	910 UJ	940 UJ	980 UJ	930 UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
Aroclor 1248	100	1,000	910 UJ	940 UJ	980 UJ	930 UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
Aroclor 1254	100	1,000	910 UJ	940 UJ	980 UJ	930 UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
Aroclor 1260	100	1,000	910 UJ	940 UJ	980 UJ	930 UJ	1,100 UJ	900 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,100 UJ	1,000 UJ	1,100 UJ	1,000 UJ	970 UJ	900 UJ	900 UJ
beta-BHC	36	3,000	47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
delta-BHC	40	500,000	47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
Dieldrin	5	1,400	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
Endosulfan I	2,400	200,000	47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
Endosulfan II	2,400	200,000	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
Endosulfan sulfate	2,400	200,000	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
Endrin	14	89,000	91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
Endrin aldehyde			91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
Endrin ketone			91 UJ	94 UJ	98 UJ	93 UJ	110 UJ	90 UJ	110 UJ	110 UJ	110 UJ	110 UJ	100 UJ	110 UJ	100 UJ	97 UJ	90 UJ	90 UJ
gamma-BHC	100		47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
gamma-Chlordane			47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
Heptachlor	42	15,000	47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
Heptachlor epoxide			47 UJ	48 UJ	50 UJ	48 UJ	58 UJ	47 UJ	57 UJ	58 UJ	59 UJ	57 UJ	54 UJ	56 UJ	54 UJ	50 UJ	46 UJ	47 UJ
Methoxychlor			470 UJ	480 UJ	500 UJ	480 UJ	580 UJ	470 UJ	570 UJ	580 UJ	590 UJ	570 UJ	540 UJ	560 UJ	540 UJ	500 UJ	460 UJ	470 UJ
Toxaphene			4,700 UJ	4,800 UJ	5,000 UJ	4,800 UJ	5,800 UJ	4,700 UJ	5,700 UJ	5,800 UJ	5,900 UJ	5,700 UJ	5,400 UJ	5,600 UJ	5,400 UJ	5,000 UJ	4,600 UJ	4,700 UJ

Notes:
UJ = Analytical data considered usable estimation of the conditions being measured.
NS = Not Sampled
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 8
Soil Boring Analytical Results - Pesticides/PCBs
H.M. Quackenbush Site
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppb) *	Commercial Use Soil Clean-Up Objectives (ppb) *	SB-15E	SB-16E	SB-17E	SB-18E	SB-19E	SB-20E	SB-21E	SB-22E	SB-23F	SB-24E	SB-25E	SB-26E	SB-27E	SB-28E	SB-29D	SB-30E	SB-31D
4,4´-DDD	3	92,000	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
4,4´-DDE	3	62,000	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
4,4´-DDT	3	47,000	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
Aldrin	5	680	49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
alpha-BHC	20	3,400	49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
alpha-Chlordane	94		49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
Aroclor 1016	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
Aroclor 1221	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
Aroclor 1232	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
Aroclor 1242	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
Aroclor 1248	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
Aroclor 1254	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
Aroclor 1260	100	1,000	950 UJ	930 UJ	910 UJ	920 UJ	960 UJ	NS	910 UJ	890 UJ	920 UJ	910 UJ	940 UJ	920 UJ	930 UJ	890 UJ	930 UJ	890 UJ	890 UJ
beta-BHC	36	3,000	49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
delta-BHC	40	500,000	49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
Dieldrin	5	1,400	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
Endosulfan I	2,400	200,000	49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
Endosulfan II	2,400	200,000	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
Endosulfan sulfate	2,400	200,000	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
Endrin	14	89,000	95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
Endrin aldehyde			95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
Endrin ketone			95 UJ	93 UJ	91 UJ	92 UJ	96 UJ	NS	91 UJ	89 UJ	92 UJ	91 UJ	94 UJ	92 UJ	93 UJ	89 UJ	93 UJ	89 UJ	89 UJ
gamma-BHC	100		49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
gamma-Chlordane			49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
Heptachlor	42	15,000	49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
Heptachlor epoxide			49 UJ	48 UJ	47 UJ	48 UJ	49 UJ	NS	47 UJ	46 UJ	47 UJ	47 UJ	48 UJ	48 UJ	48 UJ	46 UJ	48 UJ	46 UJ	46 UJ
Methoxychlor			490 UJ	480 UJ	470 UJ	480 UJ	490 UJ	NS	470 UJ	460 UJ	470 UJ	470 UJ	480 UJ	480 UJ	480 UJ	460 UJ	480 UJ	460 UJ	460 UJ
Toxaphene			4,900 UJ	4,800 UJ	4,700 UJ	4,800 UJ	4,900 UJ	NS	4,700 UJ	4,600 UJ	4,700 UJ	4,700 UJ	4,800 UJ	4,800 UJ	4,800 UJ	4,600 UJ	4,800 UJ	4,600 UJ	4,600 UJ

Notes:
UJ = Analytical data considered usable estimation of the conditions being measured.
NS = Not Sampled
* = Guidance values in accordance with 6 NYCRR 375-6.8
All sample results reported in parts per billion (ppb).

Table 9
Groundwater Analytical Results - Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	TOGS 1.1.1 Guidance Values (ppb) *	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	DEC-1	DEC-2	Field Dup
1,1,1-Trichloroethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
1,1,2,2-Tetrachloroethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
1,1,2-Trichloroethane	1	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
1,1-Dichloroethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
1,1-Dichloroethene	0.7	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
1,2-Dichloroethane	0.6	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
1,2-Dichloropropane	1	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
2-Butanone	50	NS	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	200 U	10 U
2-Hexanone	50	NS	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	200 U	10 U
4-Methyl-2-pentanone	50	NS	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 UJ	10 U	200 U	10 U
Acetone	50	NS	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	12 J	10 U	10 U	10 U	10 UJ	10 U	200 U	10 U
Benzene	1	NS	5 UJ	**4 J**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Bromodichloromethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Bromoform	50	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Bromomethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Carbon disulfide		NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Carbon tetrachloride	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Chlorobenzene	5	NS	1 J	**5.3**	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Chloroethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	100 U	5 U
Chloroform	7	NS	5 UJ	5 U	5 U	**18**	**13**	**22**	**8.9**	5 U	5 U	**12**	**17**	**10J**	3 J	100 U	**8.1**
Chloromethane	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
cis-1,2-Dichloroethene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
cis-1,3-Dichloropropene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Dibromochloromethane	50	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Ethylbenzene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
m,p-Xylene	5	NS	5 UJ	1 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Methylene chloride	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
o-Xylene	5	NS	5 UJ	1 J	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Styrene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Tetrachloroethene	0.7	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Toluene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
trans-1,2-Dichloroethene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
trans-1,3-Dichloropropene	5	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U
Trichloroethene	5	NS	5 UJ	5 U	5 U	5 UJ	5 U	5 U	5 U	5 U	5 U	**5.1**	2 J	4 J	5 UJ	100 UJ	5 UJ
Vinyl chloride	2	NS	5 UJ	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	100 U	5 U

Notes:
BOLD values indicate detections above TOGs Guidance Values.
J and UJ = Result considered a usable estimation of the conditions being measured.
U = Compound was analyzed for, but not detected.
NS = Not Sampled
* = Guidance values in accordance with Technical & Operational Guidance Series (TOGS) 1.1.1.
All sample results reported in parts per billion (ppb).

Table 10
Groundwater Analytical Results - Semi-Volatile Organics
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	TOGS 1.1.1 Guidance Values (ppb) *	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	DEC-1	Field Dup
(3+4)-Methylphenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2,4-Trichlorobenzene	5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene	3	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
1,3-Dichlorobenzene	3	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
1,4-Dichlorobenzene	3	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-Trichlorophenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,6-Trichlorophenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 UJ
2,4-Dichlorophenol	5	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dimethylphenol	50	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-Dinitrophenol	5	48 U	48 U	NS	24 U	24 U	24 U	24 U	96 U	24 U	24 U	24 U	24 U	24 U	24 U
2,4-Dinitrotoluene	5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 UJ
2,6-Dinitrotoluene	0.07	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chloronaphthalene	10	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Chlorophenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylnaphthalene	4.7	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Methylphenol	1	20 UJ	20 UJ	NS	10 UJ	10 UJ	10 UJ	10 UJ	40 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
2-Nitroaniline	5	48 UJ	48 UJ	NS	24 U	24 U	24 U	24 U	96 U	24 U	24 U	24 U	24 U	24 U	24 U
2-Nitrophenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
3,3'-Dichlorobenzidine	5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
3-Nitroaniline	5	48 UJ	48 UJ	NS	24 U	24 U	24 U	24 U	96 U	24 U	24 U	24 U	24 U	24 U	24 U
4,6-Dinitro-2-methylphenol	1	48 U	48 U	NS	24 U	24 U	24 U	24 U	96 U	24 U	24 U	24 U	24 U	24 U	24 U
4-Bromophenyl phenyl ether		20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloro-3-methylphenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chloroaniline	5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorophenyl phenyl ether		20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Nitroaniline	5	48 UJ	48 UJ	NS	24 UJ	24 UJ	24 UJ	24 UJ	96 UJ	24 UJ	24 UJ	24 UJ	24 UJ	24 UJ	24 UJ
4-Nitrophenol	1	48 U	48 U	NS	24 U	24 U	24 U	24 U	96 U	24 U	24 U	24 U	24 U	24 U	24 U
Acenaphthene	20	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Acenaphthylene		20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Anthracene	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Benz(a)anthracene	0.002	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzo(a)pyrene	50	20 U	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Benzo(b)fluoranthene	0.002	20 UJ	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Benzo(g,h,i)perylene		20 UJ	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Benzo(k)fluoranthene	0.002	20 UJ	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Bis(2-chloroethoxy)methane		20 UJ	20 UJ	NS	10 UJ	10 UJ	10 UJ	10 UJ	40 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ	10 UJ
Bis(2-chloroethyl)ether	1	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 UJ
Bis(2-chloroisopropyl)ether		20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Bis(2-ethylhexyl)phthalate	5	20 U	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Butyl benzyl phthalate	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Carbazole		20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	0.002	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Di-n-butyl phthalate	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	11 J	10 U	10 U	10 U	1 J	10 U	10 U
Di-n-octyl phthalate	50	20 UJ	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Dibenz(a,h)anthracene		20 UJ	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Dibenzofuran		20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Diethyl phthalate	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Dimethyl phthalate	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Fluoranthene	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U	10 U	10 UJ
Fluorene	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobenzene	0.04	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorobutadiene	0.5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachlorocyclopentadiene	5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Hexachloroethane	5	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Indeno(1,2,3-cd)pyrene	0.002	20 UJ	20 UJ	NS	10 U	10 U	10 UJ	10 U	40 U	10 UJ	10 U	10 U	10 U	10 U	10 UJ
Isophorone	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodi-n-propylamine		20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
N-Nitrosodiphenylamine	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Naphthalene	10	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Nitrobenzene	0.4	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Pentachlorophenol	1	48 U	48 U	NS	24 U	24 U	24 U	24 U	96 U	24 U	24 U	24 U	24 U	24 U	24 U
Phenanthrene	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Phenol	1	20 U	20 U	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U
Pyrene	50	20 UJ	20 UJ	NS	10 U	10 U	10 U	10 U	40 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:

BOLD values indicate detections above TOGs Guidance Values.

J and UJ = Result considered an estimation of the conditons being measured.

U = Compound was analyzed for, but not detected.

* = Guidance values in accordance with Technical & Operational Guidance Series (TOGS) 1.1.1.

All sample results reported in parts per billion (ppb).

Table 11
Groundwater Analytical Results -Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	TOGS 1.1.1 Guidance Values (ppb) *	MW-2	MW-3	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	DEC-1	Field Dup
Cyanide	20	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	0.01 UJ	—	0.01 UJ	0.01 UJ	**22.9 J**	**1,290 J**	0.01 UJ	0.01 UJ
Aluminum		1,540 J	788 J	100 UJ	157 J	1,110 J	215 J	338 J	289 J	882 J	1,440 J	261 J	619 J	100 UJ
Antimony		15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	R	15 U	15 U	15 U
Arsenic	20	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Barium	1,000	429	725	50 U	50 U	74.3	84.9	595	91.4	69.3	85.5	206	82	78.2
Beryllium	3	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Cadmium	5	5 U	5 U	**24.0 J**	5 U	5 U	5 U	5 U	5 U	**9.0 J**	**5.7 J**	**1,030 J**	5 U	5 U
Calcium		916,000 J	969,000 J	88,300 J	94,100 J	133,000 J	95,600 J	749,000 J	67,700 J	129,000 J	143,000 J	803,000 J	140,000 J	89,200 J
Chromium	50	5.9	5.4	13.8	5 U	5.1	5 U	5.1	5 U	36.3	14	5 U	5 U	5 U
Cobalt	5	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	**50.8**	20 U	20 U
Copper	200	10 U	10.3	10 U	10 U	13.5	10 U	10 U	10 U	10 U	17	10 U	10 U	10 U
Iron	300	**12,300**	**5,500**	215	290	**3,840**	**603**	**406**	**480**	**2,700**	**2,390**	**422**	**1,220**	173
Lead	25	3 U	3.5 J	3 U	3 U	3.7 J	3 U	3 U	3 U	3 U	3.2 J	3 U	3 U	3 U
Magnesium	35,000	20,900	23,500	11,700	12,700	18,400	16,700	**36,400**	26,400	16,300	18,100	19,500	20,400	15,500
Manganese	300	**3,800**	**3,490**	20.2	47	**835**	**689**	**8,200**	185	**565**	**811**	**6,780**	183	**605**
Nickel	100	**144**	**363**	91.6	30 U	30 U	30 U	38	30 U	82.6	97	**952**	30 U	30 U
Potassium		6,490	9,290	7,850	6,450	5,470	11,600	8,420	2,310	10,700	8,070	12,400	9,680	11,400
Selenium	10	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ
Silver	50	**142 J**	12.9 J	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	**98.1 J**	10 U	10 U
Sodium	20,000	**128,000 J**	**242,000 J**	**157,000 J**	**132,000 J**	**164,000 J**	**191,000 J**	**33,800 J**	**40,900 J**	**211,000 J**	**212,000 J**	**114,000 J**	**164,000 J**	**189,000 J**
Thallium	0.5	**99.3**	**104**	**39.4**	**45**	**58.4**	**46.9**	**98**	**39**	**58.6**	**51.2**	**101**	**56.3**	**41.7**
Vanadium	14	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Zinc	2,000	48.1 J	79.8 J	723 J	15.4 BJ	21.8 J	10 U	21.2 J	17.2 BJ	28.8 J	157 J	**4,740 J**	10.2 BJ	10 U
Mercury	0.7	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	**1.4 J**	0.2 UJ	0.2 UJ	**1.5 J**	**0.85 J**	0.2 UJ	0.2 UJ

Notes:
BOLD values indicate detections above TOGS Guidance Values.
R = Unreliable data
J, UJ and BJ = Data provides usable estimation of conditons at time of sampling.
U = Compound was analyzed for, but not detected.
* = Guidance values in accordance with Technical & Operational Guidance Series (TOGS) 1.1.1.
All sample results reported in parts per billion (ppb).

Table 12
Groundwater Analytical Results - Pesticides/PCBs
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	TOGS 1.1.1 Guidance Values (ppb) *	MW-2	MW-3	MW-5	MW-6	MW-7	MW-8	MW-10	MW-11	MW-12	MW-13	DEC-1	Field Dup
4,4´-DDD	0.2	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4´-DDE	0.2	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
4,4´-DDT	0.2	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Aldrin	0.001	0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
alpha-BHC		0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
alpha-Chlordane	0.05	0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Aroclor 1016	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1221	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1232	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1242	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1248	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1254	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Aroclor 1260	5	10 U	10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
beta-BHC		0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
delta-BHC		0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Dieldrin	0.001	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan I	0.009	0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Endosulfan II	0.009	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endosulfan sulfate	0.009	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin	0.001	1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin aldehyde		1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Endrin ketone		1 U	1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
gamma-BHC		0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
gamma-Chlordane		0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor	0.04	0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Heptachlor epoxide		0.5 U	0.5 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U
Methoxychlor		5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Toxaphene		50 U	50 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Notes:

U = Compound was analyzed for, but not detected

* = Guidance values in accordance with Technical & Operational Guidance Series (TOGS) 1.1.1

All sample results reported in parts per billion (ppb).

Table 13
Building Interiors Concrete Floor Surface Analytical Results - Inorganics (Metals/Cyanide)
H.M. Quackenbush Site
Site No. 622024
Herkimer, New York

Analytes	Unrestricted Use Soil Clean-Up Objectives (ppm) *	Commercial Use Soil Clean-Up Objectives (ppm) *	CF-1	CF-2	CF-3	CF-4	CF-5	CF-6	CF-7	CF-8	CF-9	CF-10	CF-11	CF-12	CF-13	CF-14	CF-15	Field Duplicate #10
Aluminum			5,820	4,520	4,380	5,200	4,080	7,060	3,320	4,880	5,980	5,370	3,900	3,480	4,810	2,400	1,000	4,050
Antimony			3 U	3.0 U	3.0 U	3.1 U	3.0 U	3.1 U	3.2 U	3.2 U	3.1 U	3.1 U	3.3 U	5.7 BJ	26.5 J	3.3 U	10.6 BJ	3.2 U
Arsenic	13	16	2.8	2.1	2.0 U	2.6	2.0 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	7.2	2.1 U	2.1 U	2.8	2.0 U	2.1 U
Barium	350	400	42	23.9	53.5	33.6	29	76	45	42.4	44.2	39.2	30.3	36	24.2	21.7	11.9	29.4
Beryllium	7.2	590	0.61 U	0.61 U	0.61 U	0.62 U	0.61 U	0.9	0.63 U	0.63 U	0.62 U	0.62 U	0.67 U	0.64 U	0.62 U	0.66 U	0.60 U	0.63 U
Cadmium	2.5	9.3	**15.9**	**16.4**	**139**	**6.2**	**5.8**	**14.2 J**	**18.1 J**	**261**	**77.4**	**1,600**	**47 J**	**1,270**	**808**	**353**	**252**	**2.9 R**
Calcium			193,000 J	132,000 J	173,000 J	148,000 J	90,500 J	92,400 J	88,700 J	82,900 J	178,000 J	99,400 J	133,000 J	151,000 J	174,000 J	55,600 J	161,000 J	144,000 J
Chromium	30	1,500	**61.7 J**	**70.4 J**	**68.7 J**	**59.5 J**	**2,080 J**	**11,600 J**	**798 J**	**718 J**	**118 J**	**839 J**	**211 J**	**1,520 J**	**11,600 J**	**153 J**	**2,520 J**	**104 J**
Cobalt			4.2	4.1 U	4.0 U	9.2	4.1 U	6.1	14.7	4.7	7.6	4.1 U	4.4 U	5.8	4.4	4.4 U	4.0 U	5.3
Copper	50	270	**109 J**	**87 J**	**77.9 J**	**284 J**	**1,510 J**	**3,870 J**	**15,300 J**	**850 J**	**388 J**	**135 J**	**3,120 J**	**877 J**	**89.5 J**	**16,100 J**	**222 J**	**1,280 J**
Iron			8,480	5,570	5,350	6,830	6,850	13,200	4,150	8,170	7,830	4,150	25,400	37,500	5,650	3,000	3,270	4,730
Lead	63	1,000	20.1	11.1	9.4	**72**	**105**	**362**	**147**	**128**	10.5	30	54.4	**119**	7.8	**503**	23.3	16.8
Magnesium			5,180	4,000	5,460	4,550	3,070	2,850	3,280	4,720	5,810	4,620	4,810	7,530	5,050	2,460	86,000	4,620
Manganese	1,600	10,000	241 J	132 J	137 J	155 J	209 J	193 J	110 J	164 J	317 J	97.7 J	186 J	339 J	153 J	65.7 J	73.6 J	116 J
Nickel	30	310	**92.2**	**1,060**	**499**	**1,130**	**5,710**	**2,650**	**683**	**611**	**220**	25.7	**38.8**	**260**	15.8	**201**	**411**	**75.9**
Potassium			2,790	3,110	3,430	2,080	4,030	5,980	5,890	1,770	2,380	703	2,710	8,750	1,120	810	1,560	5,090
Selenium	3.9	1,500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.1 U	1.0 U	1.0 U	1.0 U	1.1 U	1.1 U	1.0 U	1.1 U	1.0 U	1.0 U
Silver	2	1,500	**7.6 J**	**4.4 J**	**5.2 J**	**5.7 J**	**18.8 J**	**65.5 J**	**91.9 J**	**16.6 J**	2.1 UJ	2.1 UJ	**4.8 J**	**10.1 J**	**70.5 J**	**12.4 J**	**5.6 J**	**7.4 J**
Sodium			1,180	717	941	5,510	3,170	9,330	1,770	1,950	1,320	956	918	3,050	5,130	581	1,810	752
Thallium			11.2 J	9.2 J	8.9 J	8.1 J	8.0 J	13.2 J	7.9 J	7.1 J	9.8 J	7.6 J	9.7 J	11.2 J	15.5 J	7.7 J	15.7 J	9.2 J
Vanadium			13.4	7.4	7.3	6.2 U	6.1 U	6.2 U	6.3 U	6.3 U	15.3	6.2 U	7.2	6.4 U	6.2 U	6.6 U	6.0 U	6.3 U
Zinc	109	10,000	**218 J**	**125 J**	**431 J**	**314 J**	**1,090 J**	**918 J**	**2,630 J**	**745 J**	**637 J**	**210 J**	**4,680 J**	**24,700 J**	**10,200 J**	**866 J**	**9220 J**	**188 J**
Mercury	0.18	2.8	0.079 J	0.16 J	0.081 J	0.15 J	0.18 J	**1.5 J**	**3.8 J**	**0.83 J**	0.093 J	**1.3 J**	**0.27 J**	**0.55 J**	**0.19 J**	**1.3 J**	0.11 J	**0.23 J**
Cyanide	27	27	4.6	18.2	1.0 U	1.0 U	3.3	11.8	7.9	1.0 U	1.0 U	**338**	1.2	**98.4**	2.3	**62.1**	**53.8 J**	1.0 UJ
% Moisture			1.6	1.7	1	3.2	1.5	3	5.4	5	3	3.5	10	6.5	3.3	8.9	0.8	5.2

Notes:
BOLD values indicate detections above Unrestricted Use SCOs.
= Compound detected above Commercial Use SCOs.
U = Compound was analyzed for, but not detected.
B = Analyte detected in the associated Method Blank.
J, U, and BJ = Analytical data considered usable estimation of the conditions existing at the time of sampling.
R = Rejected; analytical data considered unreliable.
* = Guidance values in accordance with 6 NYCRR 375-6.8.
All sample results reported in parts per million (ppm).

Table 14
Field Measurement of Metals Utilizing Portable XRF on Building Interior and Exterior Surfaces, June 23, 2008

H. M. Quackenbush Site, Herkimer, New York
NYSDEC Site No. 6-22-024

Rdg. No.	Sample Location	Comments	Ti (ppm)	Cr (ppm)	Mn (ppm)	Fe (ppm)	Co (ppm)	Ni (ppm)	Cu (ppm)	Zn (ppm)	As (ppm)	Se (ppm)	Br (ppm)	Rb (ppm)	Sr (ppm)	Zr (ppm)	Mo (ppm)	Ag (ppm)	Cd (ppm)	Sn (ppm)	Sb (ppm)	Ba (ppm)	Hg (ppm)	Pb (ppm)
		Unrestricted Standards[1]	NA	30	NA	NA	NA	30	50	109	13	3.9	7.2	NA	NA	NA	NA	2	2.5	NA	NA	350	0.18	63
		Commercial Standards[2]	NA	1,500	NA	NA	NA	310	270	10,000	16	1,500	590	NA	NA	NA	NA	1,500	9.3	NA	NA	400	2.8	1,000
8	001		4,945	1,792	ND	27,536	ND	1,966	1,238	2,105	43	ND	ND	49	268	89	ND	176	125	ND	ND	ND	ND	118
10	002		3,538	3,037	ND	42,413	ND	3,297	2,147	3,266	70	ND	ND	48	289	101	ND	158	ND	390	ND	ND	ND	243
11	003		ND	980	ND	46,140	ND	673	384	1,037	ND	ND	ND	65	324	80	ND	152	ND	ND	ND	ND	ND	ND
13	004		ND	3,070	ND	37,750	ND	3,122	2,118	2,158	55	ND	ND	96	250	75	ND	ND	312	338	ND	ND	ND	219
15	005		3,863	ND	678	22,726	ND	6,761	1,308	2,629	ND	ND	ND	82	360	52	ND	ND	ND	315	ND	ND	ND	366
16	006		16,674	9,323	ND	32,121	ND	7,892	1,505	11,785	ND	ND	ND	104	244	67	ND	ND	ND	ND	ND	ND	ND	74
17	007		10,186	5,210	947	41,677	ND	5,939	8,186	8,729	322	41	ND	123	219	36	ND	139	300	4,687	ND	ND	ND	1,479
18	008		3,935	863	ND	21,974	ND	3,250	6,004	4,650	ND	31	ND	61	114	186	ND	ND	1,170	720	351	ND	ND	341
19	009		ND	1,269	ND	23,857	ND	856	918	2,264	ND	ND	ND	24	97	35	ND	ND	ND	614	ND	ND	ND	144
20	010		4,167	4,651	ND	43,921	ND	1,611	1,216	3,297	65	ND	ND	83	408	76	ND	ND	ND	ND	ND	ND	64	289
21	011		ND	8,263	ND	18,498	ND	906	26,447	8,524	247	ND	ND	ND	212	ND	ND	ND	3,596	ND	869	ND	86	3,117
22	012		ND	ND	2,809	97,781	ND	1,457	49,669	58,186	200	123	ND	ND	222	ND	ND	153	1,073	ND	ND	ND	218	580
23	013	trench	ND	75,172	ND	80,392	ND	ND	7,564	150,516	ND	ND	648	ND	247	ND	ND	ND	9,011	ND	1,441	ND	ND	1,947
24	014	copper sludge	ND	ND	ND	7,883	ND	ND	84,545	534	ND	51	ND	ND	34	ND	ND	ND	646	1,902	ND	ND	230	284
25	015		7,371	4,380	1,132	87,345	ND	1,487	6,008	9,914	181	ND	ND	46	190	32	ND	ND	4,005	ND	726	ND	ND	1,336
26	016		ND	13,608	ND	9,448	ND	800	20,028	12,671	ND	ND	ND	ND	107	ND	ND	ND	1,517	2,271	ND	ND	ND	118
27	017		ND	5,969	ND	9,840	ND	221	ND	4,867	ND	ND	ND	ND	139	25	ND	143	208	ND	ND	ND	ND	171
28	018		5,099	1,929	ND	108,633	1,774	4,054	27,216	12,517	174	62	ND	37	145	132	ND	98	ND	464	ND	ND	127	826
29	019		5,015	1,014	ND	10,090	ND	418	372	464	ND	ND	ND	ND	173	28	ND	ND	ND	ND	ND	ND	ND	72
30	020		ND	118,514	2,316	12,463	ND	2,211	580	2,541	ND	ND	ND	ND	158	76	ND	1,150	247	553	ND	ND	ND	196
31	021		ND	5,791	ND	11,764	ND	6,762	704	13,758	50	ND	ND	41	88	26	ND	ND	ND	ND	ND	ND	ND	158
32	022		ND	41,920	ND	13,236	569	894	1,046	1,194	ND	ND	ND	87	252	32	ND	ND	ND	ND	ND	ND	ND	114
33	023		4,748	2,448	ND	37,261	ND	2,129	3,730	2,997	65	ND	ND	84	239	130	ND	170	141	ND	ND	ND	ND	261
34	024		4,604	3,870	ND	38,087	ND	2,464	2,377	4,992	56	32	ND	68	281	110	ND	ND	203	ND	ND	ND	ND	161
35	025		5,691	4,240	ND	90,891	ND	3,957	4,972	4,857	ND	ND	ND	75	270	74	ND	ND	434	ND	ND	ND	ND	413
36	026		ND	ND	ND	40,847	881	1,335	1,801	2,183	ND	ND	ND	62	55	215	ND	ND	ND	265	ND	ND	ND	ND	86
37	027		ND	852	ND	28,792	ND	1,710	996	1,810	ND	ND	ND	100	218	65	ND	128	ND	ND	ND	ND	ND	131
38	028		ND	4,097	ND	60,368	ND	3,127	3,959	3,694	86	ND	ND	63	284	81	ND	175	674	ND	ND	ND	78	425
39	029		ND	10,391	2,600	172,568	2,857	3,337	21,968	3,306	171	53	ND	61	280	ND	ND	129	686	594	ND	ND	170	604
40	030		ND	5,306	ND	74,313	ND	5,286	3,746	5,419	98	ND	ND	106	239	78	ND	196	631	366	ND	ND	95	514
41	031	wall waste water	313,712	ND	673	885	ND	ND	ND	998	ND	ND	ND	ND	84	86	ND	ND	ND	ND	ND	ND	ND	ND
42	032		ND	4,675	ND	50,445	1,594	5,954	3,711	5,022	ND	44	ND	63	171	27	ND	99	685	285	ND	ND	ND	303
43	033		8,473	7,431	ND	77,187	1,387	4,404	15,323	8,861	ND	ND	ND	53	186	40	ND	ND	8,042	588	1,813	ND	124	1,398
44	034		ND	68,198	ND	41,330	ND	11,446	14,939	7,130	ND	ND	ND	126	135	ND	ND	ND	1,976	351	ND	ND	ND	637
45	035		ND	11,358	ND	158,414	3,163	9,883	8,880	12,346	111	56	ND	68	157	ND	ND	449	877	3,496	ND	ND	126	974
46	036	slope to basment	ND	8,567	ND	77,042	ND	3,690	7,472	9,798	297	ND	ND	61	207	47	ND	91	3,574	ND	691	ND	ND	1,803
48	037		ND	4,964	ND	22,685	ND	1,612	1,675	2,167	ND	ND	ND	65	266	62	ND	85	ND	ND	ND	ND	ND	91
49	038		ND	1,670	ND	26,603	ND	1,459	922	2,075	ND	ND	ND	68	268	95	ND	142	ND	ND	ND	ND	ND	116
50	039		ND	4,977	ND	54,978	ND	6,416	3,808	4,591	107	ND	ND	61	294	68	ND	100	ND	1,193	ND	ND	ND	539
51	040		ND	ND	ND	22,458	ND	232	370	3,428	ND	ND	ND	55	219	55	ND	ND	184	ND	ND	ND	ND	118
52	041		ND	3,788	ND	24,761	ND	1,638	2,503	2,760	ND	ND	ND	ND	210	ND	ND	182	155	610	ND	ND	ND	320
53	042		ND	4,973	ND	18,227	ND	8,535	4,795	3,345	75	ND	50	ND	501	ND	ND	243	422	ND	ND	ND	ND	175
54	043		27,651	8,163	ND	31,225	ND	3,349	2,485	2,085	ND	ND	ND	77	220	100	ND	99	ND	466	ND	ND	ND	247
55	044		45,511	2,406	ND	23,155	ND	5,802	5,004	8,504	ND	ND	46	119	250	80	ND	149	178	1,799	ND	ND	ND	217
56	045		ND	1,019	ND	9,509	ND	3,332	982	4,003	ND	ND	47	ND	4,589	ND	ND	183	ND	ND	ND	ND	ND	143
57	046	wall	426,131	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	704	128	ND	92	241	ND	ND	ND	ND	ND
58	047		3,414	3,045	ND	25,253	ND	5,699	4,055	3,139	91	ND	ND	91	305	67	ND	201	ND	677	ND	ND	ND	346
59	048		13,383	ND	ND	10,628	ND	1,214	4,167	2,862	ND	ND	ND	33	72	41	ND	ND	ND	ND	ND	ND	ND	124
61	049		4,097	ND	ND	5,596	ND	573	350	1,579	ND	ND	ND	ND	4,908	ND	ND	171	ND	ND	ND	ND	ND	ND
62	050		ND	ND	ND	7,636	ND	1,151	782	1,150	ND	ND	ND	ND	4,857	ND	ND	192	ND	ND	ND	ND	ND	ND
63	051		ND	ND	ND	65,321	ND	917	24,761	1,761	ND	ND	44	29	239	ND	ND	ND	ND	ND	ND	ND	ND	193
64	052		ND	789	ND	14,007	ND	7,575	759	936	ND	ND	ND	75	279	57	ND	126	136	ND	ND	ND	ND	82
65	053		ND	10,201	ND	35,363	ND	3,655	1,234	5,362	37	ND	ND	22	95	40	ND	ND	ND	ND	ND	ND	ND	200
66	054		ND	2,650	ND	36,973	ND	4,344	2,478	3,235	ND	ND	ND	50	232	62	ND	124	251	ND	ND	ND	ND	221
67	055	stairs 2nd floor	308,191	ND	ND	ND	ND	ND	ND	16,667	ND	ND	ND	ND	904	220	ND	362	ND	ND	ND	ND	ND	524
68	056	ceiling 3rd floor	366,374	ND	ND	ND	ND	ND	ND	22,973	ND	ND	127	ND	920	138	ND	557	ND	ND	ND	ND	ND	932
69	057	2nd floor	31,267	ND	ND	4,061	ND	ND	ND	586	ND	ND	ND	ND	36	26	ND	ND	ND	ND	ND	ND	ND	197
70	058	barn 2nd floor	ND	ND	ND	2,182	ND	ND	ND	3,982	4,492	ND	ND	ND	132	ND	ND	ND	235	ND	ND	ND	ND	38,559
71	059	barn 2nd floor	ND	ND	ND	710	ND	ND	ND	247	155	ND	ND	ND	178	ND	ND	ND	ND	ND	ND	ND	ND	1,793
72	060	barn 2nd floor	ND	ND	ND	1,135	ND	ND	ND	133	33	ND	ND	ND	49	26	17	ND	ND	ND	ND	ND	ND	238
73	061	barn 2nd floor	ND	ND	ND	1,558	ND	ND	ND	115	55	ND	ND	ND	42	31	40	ND	ND	ND	ND	ND	ND	293
74	062	barn 2nd floor	ND	ND	ND	1,076	ND	ND	ND	148	ND	ND	ND	ND	108	ND	ND	ND	ND	ND	ND	ND	ND	764
75			ND	ND	ND	716	ND	ND	ND	ND	ND	ND	ND	ND	31	33	ND	ND	ND	203	ND	ND	ND	86
76			ND	ND	ND	1,633	ND	ND	ND	4,213	4,774	ND	ND	ND	131	ND	ND	ND	ND	ND	ND	ND	ND	35,533
77			ND	ND	ND	4,130	ND	ND	ND	369	160	ND	ND	ND	34	ND	ND	ND	ND	ND	ND	ND	ND	1,296
78			ND	ND	ND	2,056	ND	ND	ND	1,874	3,639	ND	ND	ND	39	ND	ND	ND	ND	ND	ND	ND	ND	26,142
79			ND	ND	ND	1,302	ND	ND	ND	ND	ND	ND	ND	ND	43	ND	ND	ND	ND	ND	ND	ND	ND	172
81	063	barn north facing wall	60,821	ND	ND	122,010	ND	ND	ND	182	ND	ND	ND	ND	131	124	ND	ND	ND	ND	ND	ND	ND	4,317
82	064	barn south facing wall	ND	ND	ND	24,333	ND	ND	ND	ND	ND	ND	ND	ND	11	26	27	ND	ND	ND	ND	ND	ND	ND
83	065	barn south facing wall	75,545	ND	ND	143,116	ND	ND	ND	1,117	607	ND	ND	ND	126	ND	ND	95	ND	ND	ND	ND	ND	18,799
84	066	barn east facing wall	60,127	ND	ND	146,902	ND	ND	ND	1,248	ND	ND	ND	ND	324	ND	ND	ND	ND	ND	ND	ND	ND	7,008

Notes:

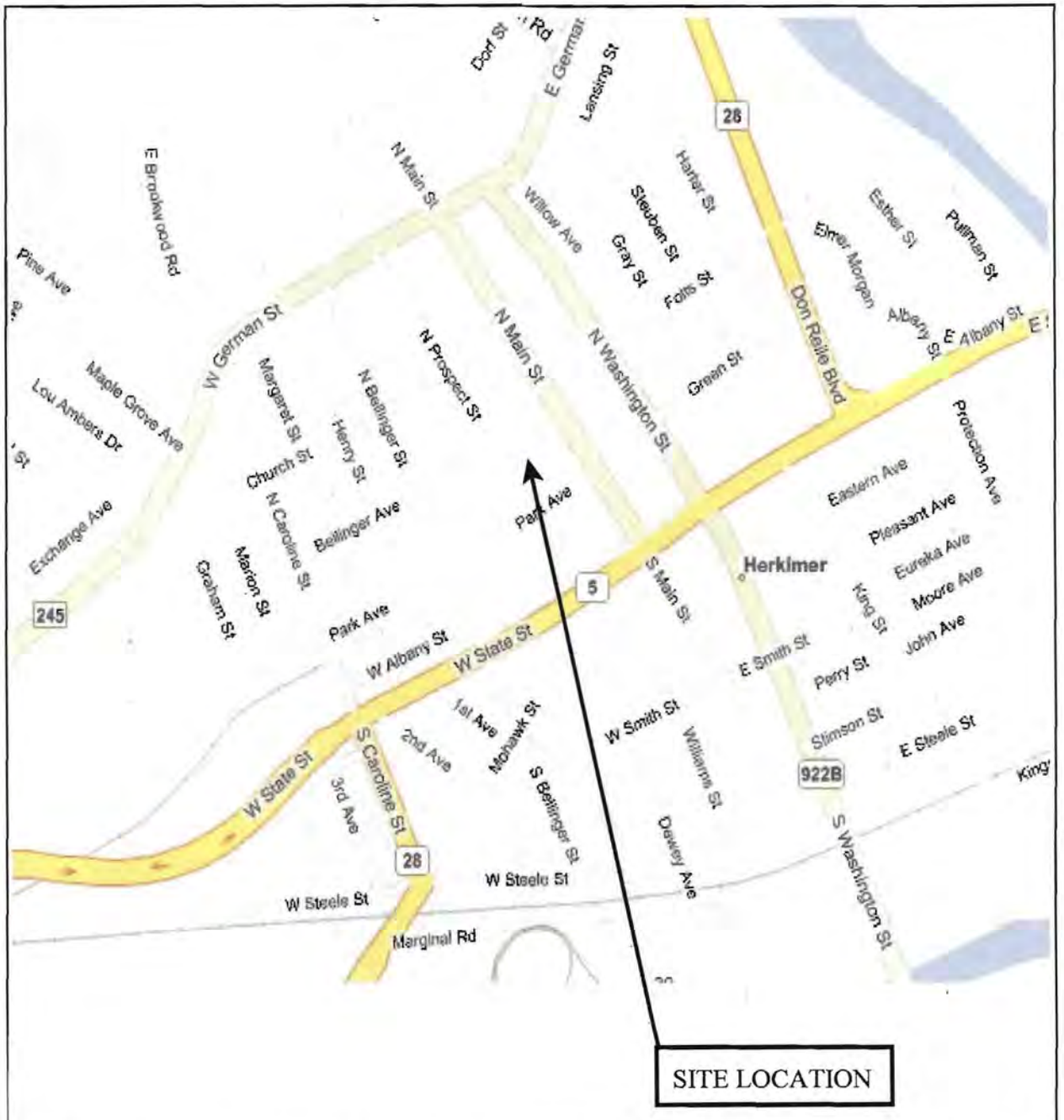
[1] From Part 375 **Unrestricted** Soil Clean-Up Objectives (SCOs).

[2] From Part 375 **Restricted Commercial** SCOs.

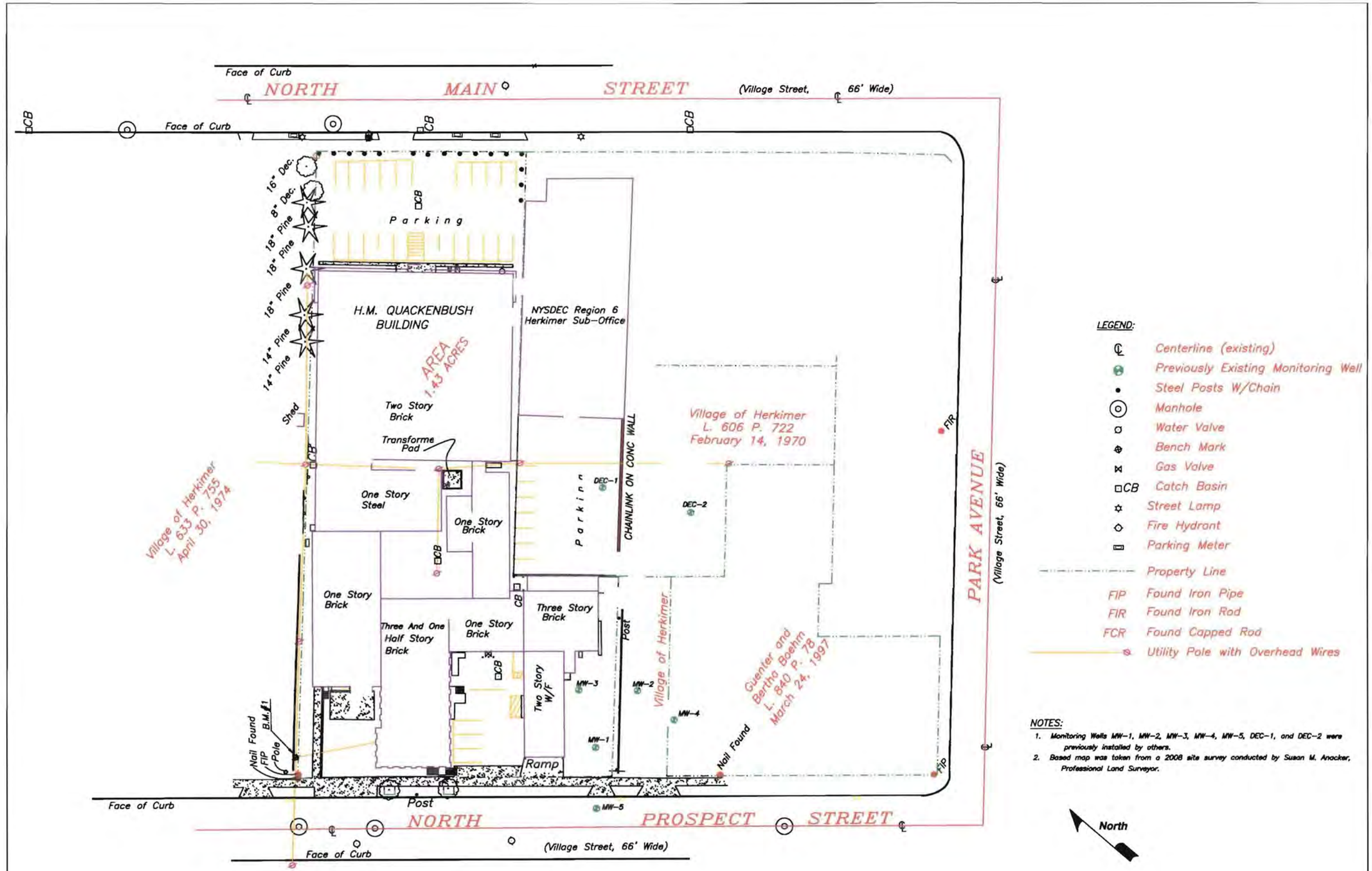
BOLD values indicate detections above Unrestricted Use SCOs.

Yellow highlighted values indicate detections above Commercial Use SCOs.

Figures



Quackenbush Site Site ID#: 6-22-024 Herkimer, New York	**FIGURE 0** **Site Location**



LEGEND:

- Centerline (existing)
- Previously Existing Monitoring Well
- Steel Posts W/Chain
- Manhole
- Water Valve
- Bench Mark
- Gas Valve
- CB Catch Basin
- Street Lamp
- Fire Hydrant
- Parking Meter
- Property Line
- FIP Found Iron Pipe
- FIR Found Iron Rod
- FCR Found Capped Rod
- Utility Pole with Overhead Wires

NOTES:

1. Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-5, DEC-1, and DEC-2 were previously installed by others.
2. Based map was taken from a 2008 site survey conducted by Susan M. Anocker, Professional Land Surveyor.

North

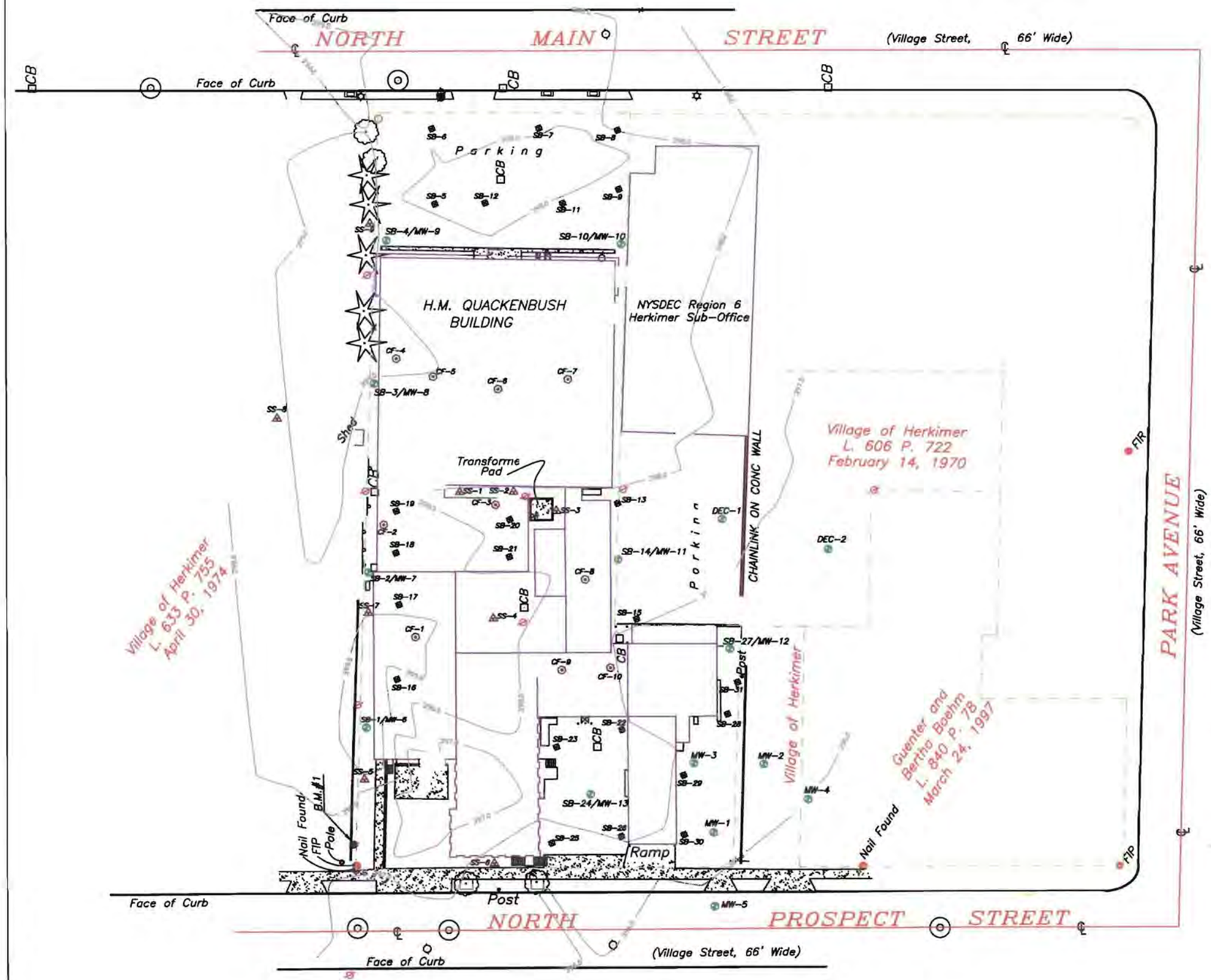
SCALE
1" = 20'

OP-TECH Environmental Services
150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518.355.0197/Fax 518.355.3256)

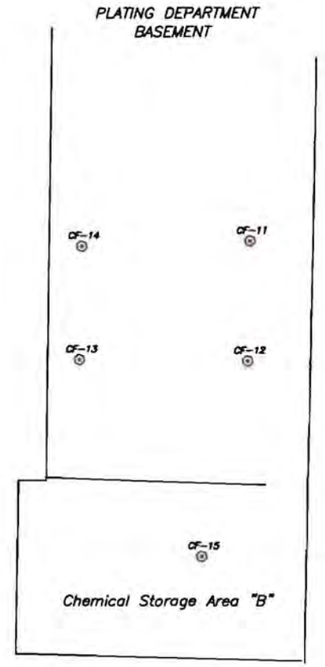
Figure 1: Site Features
H.M. Quackenbush Site
220 North Prospect St.
Herkimer, New York

Date: November 2008

Job No.: ADCR-0012



PLATING DEPARTMENT BASEMENT



NOT TO SCALE

LEGEND:

- CL — CENTERLINE (EXISTING)
- MANHOLE
- WATER VALVE
- GAS VALVE
- CB — CATCH BASIN
- PROPERTY BOUNDARY LINE
- CONCRETE FLOOR SURFACE SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION
- SOIL BORING AND MONITORING WELL LOCATION (Installed by OP-TECH 2008)
- SOIL BORING LOCATION (Installed by OP-TECH 2008)
- UTILITY POLE
- SURFACE ELEVATION CONTOUR

NOTES:

1. Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-5, DEC-1, and DEC-2 were previously installed by others.
2. Based map was taken from a 2008 site survey conducted by Susan M. Anocker, Professional Land Surveyor.

North

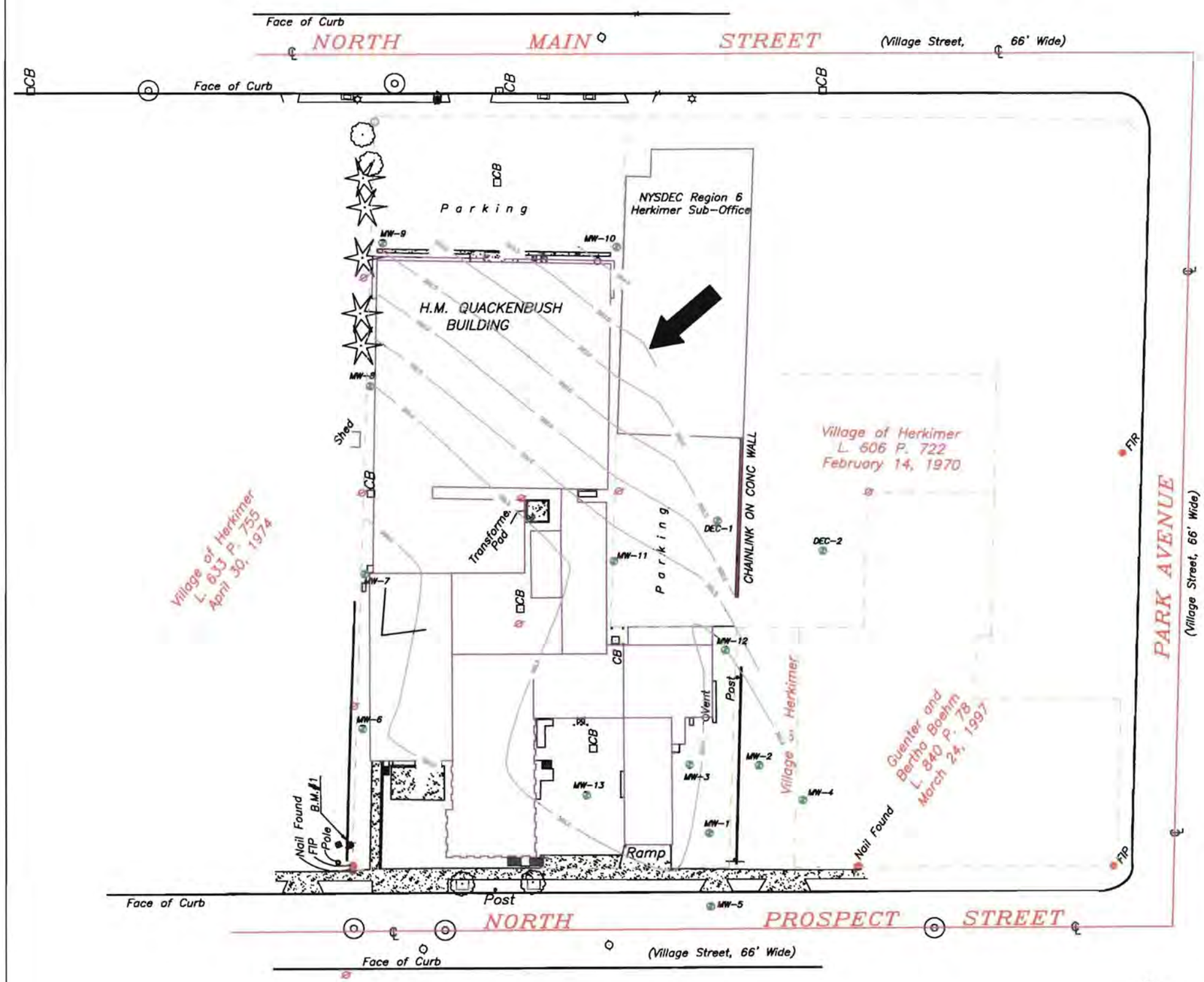
SCALE
1" = 20'

OP-TECH Environmental Services
150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518.355.0197/Fax 518.355.3256)

Figure 2: Site Plan / Topographic Contour Map
H.M. Quackenbush Site
220 North Prospect St.
Herkimer, New York

Date: November 2008

Job No.: ADCR-0012



July 28, 2008 Groundwater Elevation Data Table

Monitoring Well	Top of PVC Elev. (ft.)	GW Elevation (ft.)
MW-1	396.42	N/A
MW-2	395.73	380.83
MW-3	396.10	N/A
MW-4	395.67	380.65
MW-5	395.28	380.85
MW-6	402.62	380.39
MW-7	401.47	380.31
MW-8	402.20	380.96
MW-9	398.08	382.59
MW-10	398.19	384.28
MW-11	397.05	381.15
MW-12	396.14	380.94
MW-13	397.36	381.33
DEC-1	397.13	380.84
DEC-2	396.71	381.05

LEGEND:

- CENTERLINE (EXISTING)
- MANHOLE
- WATER VALVE
- GAS VALVE
- CB CATCH BASIN
- PROPERTY BOUNDARY LINE
- MONITORING WELL LOCATION (Installed by OP-TECH 2008)
- UTILITY POLE
- GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

NOTES:

1. Monitoring Wells MW-1, MW-2, MW-3, MW-4, MW-5, DEC-1, and DEC-2 were previously installed by others.
2. Based map was taken from a 2008 site survey conducted by Susan M. Anacker, Professional Land Surveyor.
3. Contour Interval = 0.5 feet

North

SCALE
1" = 20'

OP-TECH Environmental Services
150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518.355.0197/Fax 518.355.3256)

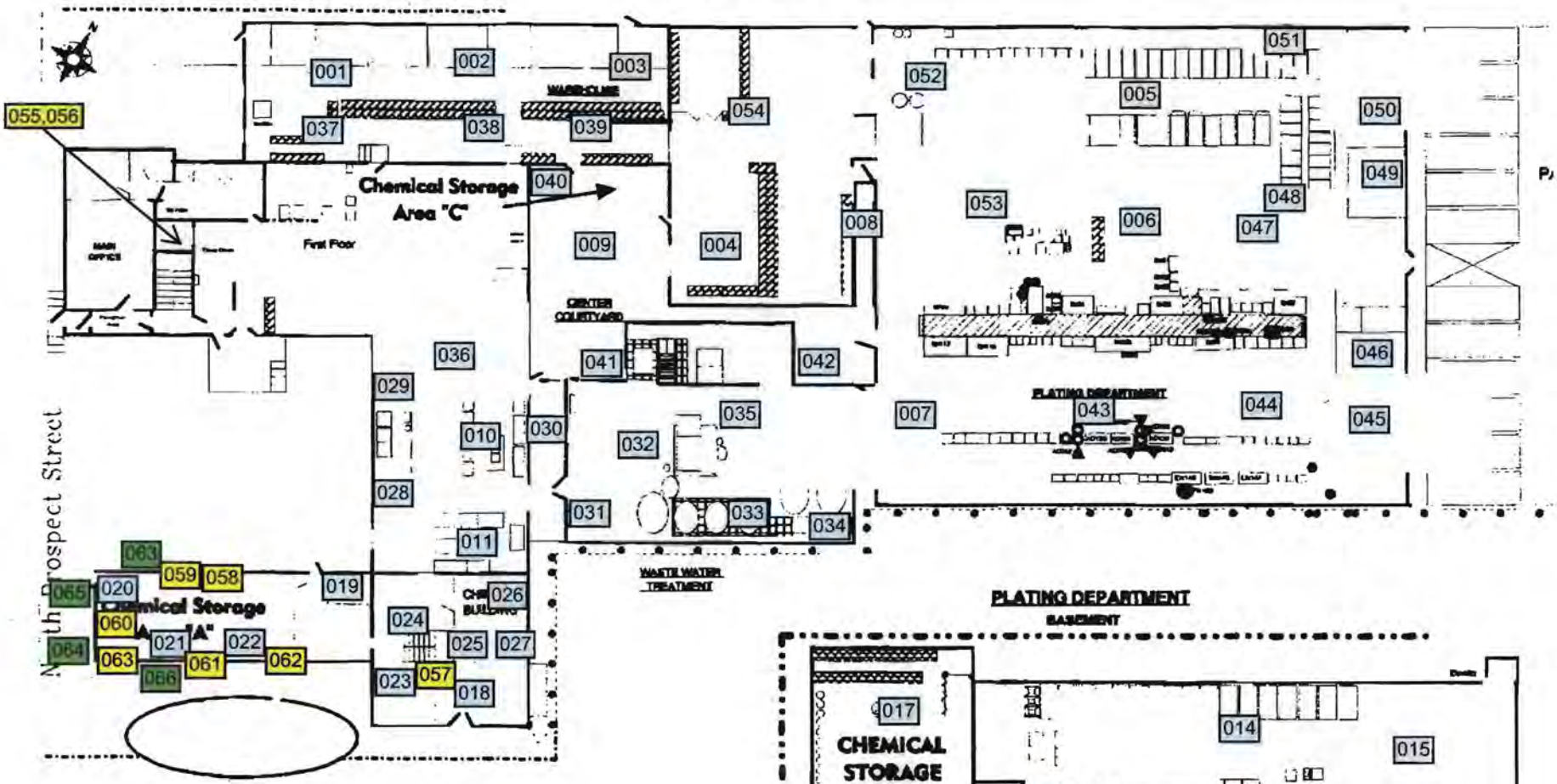
Figure 3: Grounwater Contour Map
H.M. Quackenbush Site
220 North Prospect St.
Herkimer, New York

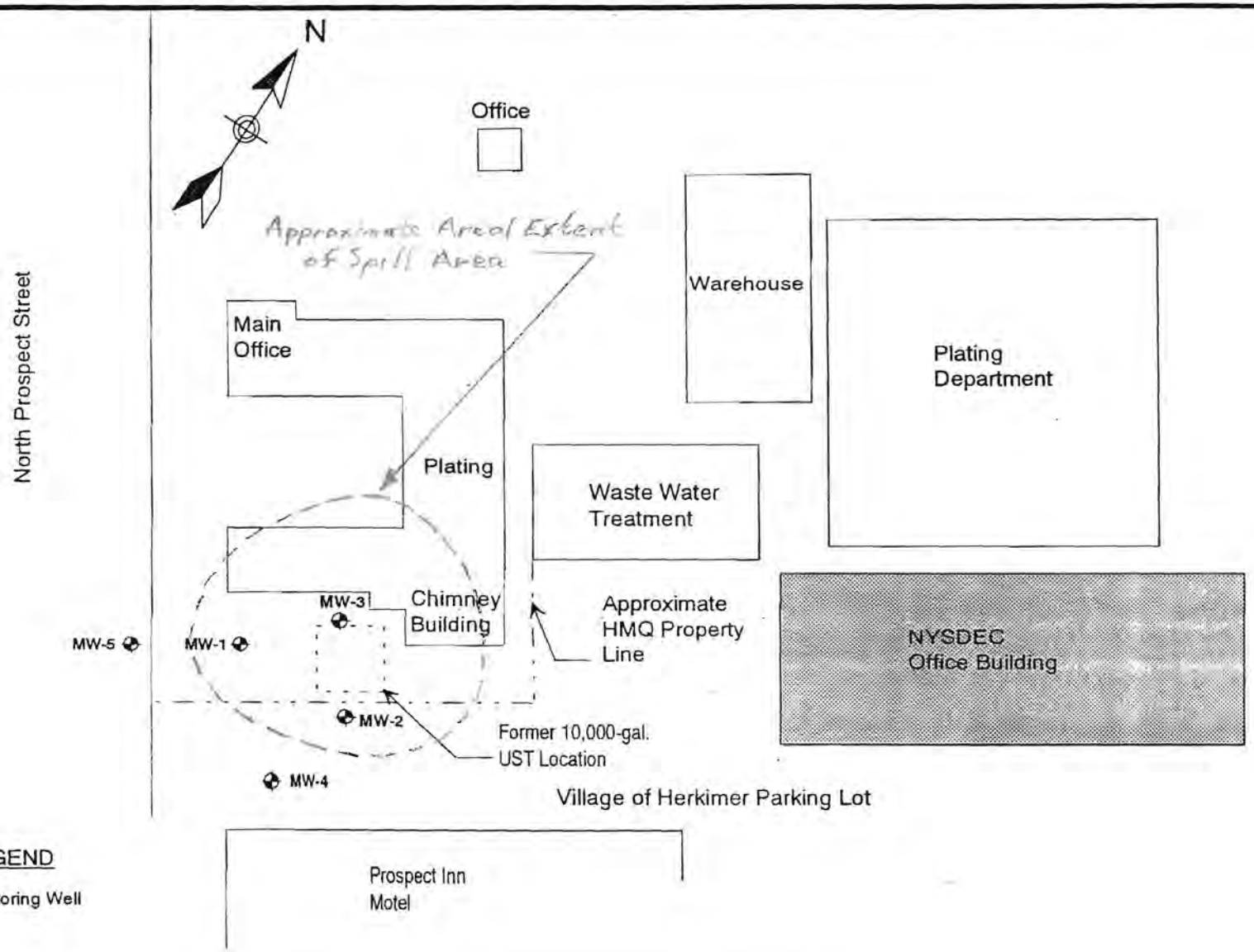
Date: November 2008

Job No.: ADCR-0012

Quackenbush XRF sample locations

Figure 4





ENVIRONMENTAL PRODUCTS & SERVICES, INC.		DATE: May 2009	Site No.: 622024
	H.M. Quackenbush, Inc. 220 Prospect Street Herkimer, New York	SCALE: Approx. 1' = 60'	FIGURE NO.: 5
		DRAWN BY: Geoscience	LOCATION: Herkimer, NY

Appendix A

Ground Penetrating Radar Survey Report

NORTHEASTERN
ENVIRONMENTAL
TECHNOLOGIES CORP.

1476 Route 50 - P.O. Box 2167 Ballston Spa, NY 12020
Phone: (518) 884-8545 - Fax: (518) 884-9710

August 5, 2008

Mr. Joe Naselli
OP-TECH Environmental Services, Inc.
150 Rotterdam Industrial Park
Schenectady, New York 12306
naselljj@op-tech.us

RE: GPR Survey - Herkimer, New York

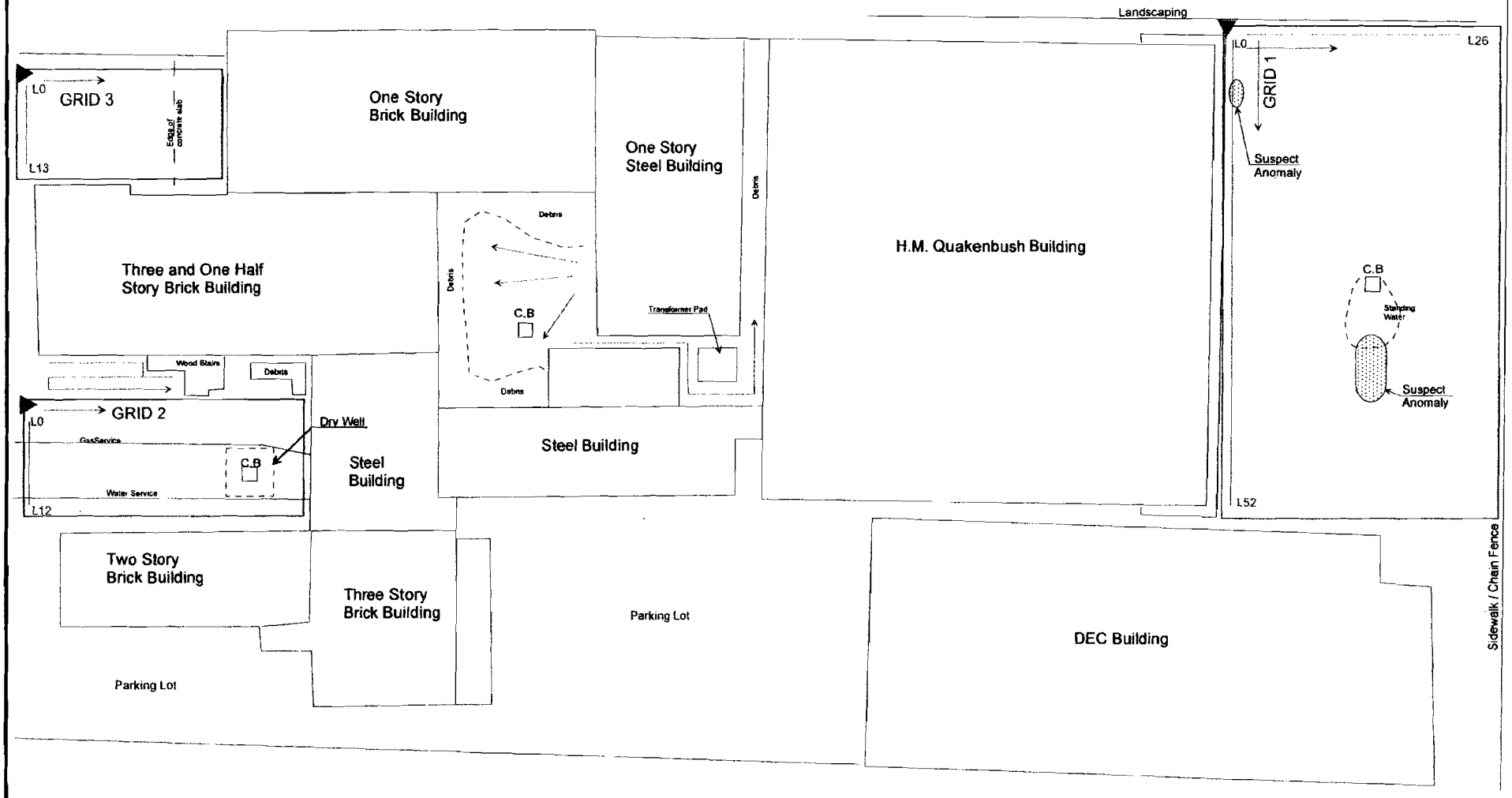
Dear Joe:

Pursuant to the May 27, 2008 work plan a focused remote sensing field survey was performed at the above noted site. The objective of this work was to consider if buried chemical storage equipment historically used at the site, specifically underground storage tank infrastructure (UST), existed in select areas of the site. The scope of the remote sensing survey work was based on the field services outlined in NETC's May, 27, 2008 work plan. A more complete accounting of the activities completed during this SI is included below for your consideration.

Ground Penetrating Radar Survey

A Ground Penetrating Radar (GPR) field survey was conducted at the site on June 17, 2008. The GPR survey was conducted in five select areas of the site defined by you (see **Figure 1**). Three rectangular reference grids were established in three areas, while random survey lines were conducted in two areas. The random survey lines were performed in these two areas due to site restrictions.

A Noggin 250 plus Smart Cart Profiling System was used to perform the GPR work. The Noggin 250 plus Smart Cart Profiling System transmits electromagnetic GPR signals continuously into the subsurface and then detects, amplifies and displays reflections of the GPR signal on a graphic recorder and a video display unit. During the GPR survey, the transmitting / receiving antenna was slowly moved over the ground surface in each target area producing radar images of the subsurface. The GPR detects subsurface anomalies at depths typically up to ± 4.0 - 8.0 feet below grade. The data generated during the GPR survey was numerically manipulated and graphically plotted in the field to illustrate subsurface anomalies identified in each grid. Noteworthy buried anomalies identified during the GPR survey were flagged in the field by NETC staff using conventional marker paint.



LEGEND

GRID 0 — GPR Grid Location Starting Point and Direction

GPR Random Survey Lines

Anomaly

NOTES: All site features are approximate. This site plan is intended for illustration purpose associated with an June 2008 GPR survey performed on behalf of Op-Tech Environmental Services, Inc., exclusively.

NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORP.
1476 Route 50, P.O. Box 2167, Ballston Spa, NY 12020
Phone: (518) 884-8545 Fax: (518) 884-9710 e-mail: jeffnetc@nycap.rr.com

FIGURE 1: GPR SURVEY MAP

PROJECT: H.M. Quankenbush
Herkimer, New York

Project # 08.0606046	Scale: Not to Scale	Date: 06/17/08

netc/projects/Optech/GPRSurvey/Maps/GPRSiteMap

FINDINGS

The GPR survey has identified the presence of several subsurface anomalies at the subject site. One subsurface anomaly identified in Grid 1 is consistent in size and shape of UST infrastructure. The GPR anomaly is approximately 3 - 4 feet below grade, ± 4.0 - 5.0 ft. in diameter and of unknown length. Interference from standing water inhibited the complete defining of the anomaly. Other near surface anomalies identified in the remaining survey areas appear to correspond with known and unknown buried utility line or site drainage infrastructure. Illustrations of the suspect UST GPR data are included in **Attachment A**.

LIMITATIONS

The findings and opinions offered are based on the remote sensing GPR services completed to date. As directed, no invasive work was performed during this study to corroborate the GPR findings. NETC assumes no responsibility for other subsurface conditions including, but not limited to, other soil and groundwater quality conditions, cultural fill and / or other buried vessels that may exist at the site. NETC opinions regarding the significance of subsurface conditions identified herein are based on the existing data exclusively; no warranties are offered or implied. As with any investigation of a limited scope, should additional information become available modification to this report may be appropriate. The NETC organization and I remain available to assist OP-TECH Environmental Services, Inc. with this matter, as necessary.

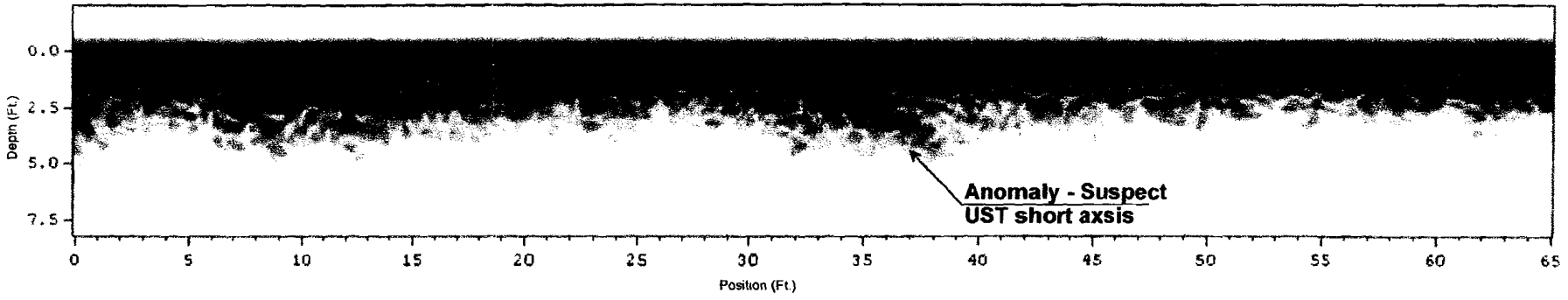
Sincerely,
NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORPORATION

Todd G. Scott,
Project Geologist

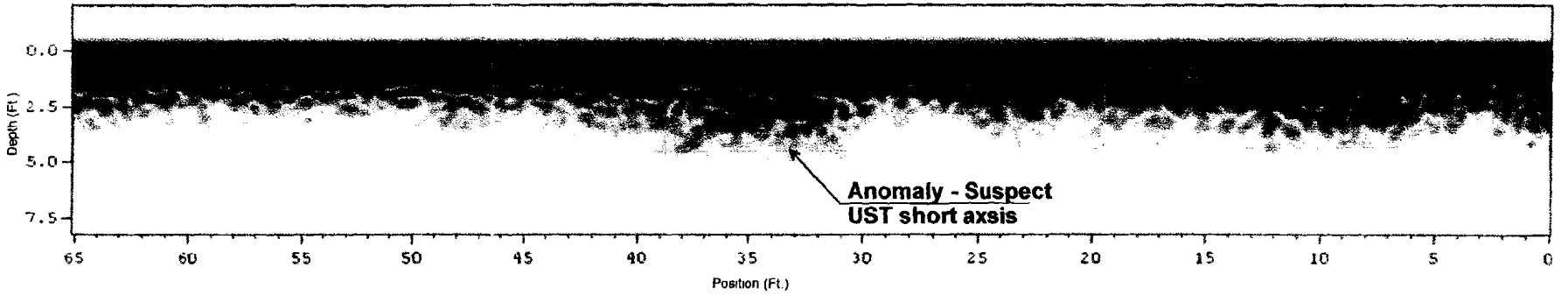
Attachment A

GPR SURVEY DATA - GRID 1 / LINES 30 and 31

GPR Survey - Grid 1, Line 30



GPR Survey - GRID 1, Line 31



NOTE: All graph features are approximate. This graph is intended for illustration purpose associated with a GPR Survery performed at H.M. Quakenbush, Herkimer, NY.

NORTHEASTERN ENVIRONMENTAL TECHNOLOGIES CORP.
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Phone: (518) 884-8545 Fax: (518) 884-9710 e-mail: jeffnetc@nycap.rr.com

GPR Survey - GRID 1 - Lines 30 and 31

H.M. Quakenbush - Herkimer, New York

Project # 08.0606046	Date: June 17, 2008

Appendix B

Boring Logs and Monitoring Well Installation Details

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-1

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	2.1'	0.0	0.3	Top soil.	2.1' = ND	0.0'-2.0'=ND
					2.8' = ND	2.0'-4.0'=ND
A		0.3	4.0	Brown cmf SAND; some Clayey Silt; some cmf angular Gravel; moist; non-plastic; no noticeable petroleum odor.	3.8' = ND	
	2.3'	4.0	8.0	Brown cmf SAND; some Clayey Silt; some cmf angular Gravel; moist; non-plastic; no noticeable petroleum odor.	6.0' = ND	4.0'-6.0'=ND
					6.9' = ND	6.0'-8.0'=ND
B					7.9' = ND	
	2.1'	8.0	11.5	Brown cmf SAND; some Clayey Silt; some cmf angular Gravel; moist; non-plastic; no noticeable petroleum odor.	10.1' = ND	8.0'-10.0'=ND
					10.8' = ND	10.0'-12.0'=ND
C		11.5	12.0	Brown cmf SAND; little Silt; wet; no noticeable petroleum odor; non-plastic.	11.8' = ND	
	2.8'	12.0	12.3	Brown cmf SAND; little Silt; wet; no noticeable petroleum odor; non-plastic.	13.8' = ND	12.0'-14.0'=ND
		12.3	14.8	Brown cmf SAND; little Silt; some cmf Gravel; moist; no noticeable petroleum odor; non-plastic.	14.8' = ND	14.0'-16.0'=ND
D					15.8' = ND	
		14.8	15.4	Brown mf SAND; trace Silt; saturated; no noticeable petroleum odor; non-plastic.		
		15.4	15.7	Cobble.		
		15.7	16.0	Brown cmf SAND; some Clayey Silt; some mf Gravel; saturated; no noticeable petroleum odor; non-plastic.		
	3.5'	16.0	20.0	Brown cmf SAND; some Clayey Silt; some mf Gravel; saturated; no noticeable petroleum odor; non-plastic.	16.5' = ND	16.0'-18.0'=ND
					17.5 = ND	18.0'-20.0'=ND
E					18.5' = ND	
					19.5' = ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-2

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.4'	0.0	0.3	Top soil.	1.8' = ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; little Clayey Silt; some mf angular Gravel; moist; no noticeable petroleum odor; non-plastic.	2.8' = ND 3.8' = ND	
B	3.0'	4.0	8.0	Brown cmf SAND; little Clayey Silt; some mf angular Gravel; moist; no noticeable petroleum odor; non-plastic.	5.1' = ND 5.8' = ND 6.8' = ND 7.8' = ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	2.9'	8.0	9.1	Brown cmf SAND; little Clayey Silt; some mf angular Gravel; damp; no noticeable petroleum odor; non-plastic.	9.8' = ND 10.8' = ND	8.0'-10.0'=ND 10.0'-12.0'-ND
		9.1	12.0	Cobbles; dry; no noticeable petroleum odor; non-plastic.	11.8' = ND	
D	4.0'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf angular Gravel; occasional m Cobble.	12.5' = ND 13.5' = ND 14.5' = ND 15.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	4.0'	16.0	19.0	Brown cmf SAND; trace Silt; some cmf angular Gravel; moist; wet; no noticeable petroleum odor; non-plastic.	16.5' = ND 17.5' = ND	16.0'-18.0'=ND 18.0'-20.0'=ND
		19.0	20.0	Brown cmf SAND; trace Silt; some cmf angular Gravel; saturated @ 19.0'; no noticeable petroleum odor; non-plastic.	18.5' = ND 19.5' = ND	
F	4.0'	20.0	24.0	Brown cmf SAND; trace Silt; some cmf angular Gravel; saturated; no noticeable petroleum odor; non-plastic.	20.5' = ND 21.5' = ND 22.5' = ND 23.5' = ND	20.0'-22.0'=ND 22.0'-24.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-3

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	3.0'	0.0	0.3	Top soil.	1.0' = ND	0.0'-2.0'=ND
		0.3	4.0	Dark Brown mf SAND; little Silt; little mf Gravel; some Brick, Cinders, Tree roots. dry; no noticeable petroleum odor; non-plastic.	1.9' = ND 2.9' = 14.2 3.8' = 0.026	2.0'-4.0'=4.2
B	2.4'	4.0	8.0	Brown cmf SAND; little Silt; some cmf Gravel; tree roots; dry; no noticeable petroleum odor; non-plastic.	6.1' =1.3 6.8' = 12.0 7.8' = ND	4.0'-7.0'=5.0 7.0'-8.0'=ND
C	3.4'	8.0	12.0	Brown cmf SAND; little Silt; some cmf Gravel; tree roots; moist; no noticeable petroleum odor; non-plastic.	9.8' = ND 10.8' = ND 11.8' = ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	4.0'	12.0	16.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; wet @ 15.1fbg no noticeable petroleum odor; non-plastic.	12.5' = ND 13.5' = ND 14.5' = ND 15.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	4.0'	16.0	19.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; wet no noticeable petroleum odor.	16.5' = ND 17.5' = ND	16.0'-18.0'=ND 18.0'-20.0'=ND
		19.0	20.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	18.5' = ND 19.5' = ND	
F	4.0'	20.0	24.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	20.5' = ND 21.5' = ND 22.5' = ND 23.5' = ND	20.0'-22.0'=ND 22.0'-24.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-4

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	2.5'	0.0	0.3	Asphalt.	2.1' = ND	0.0'-4.0'=ND
A		0.3	0.4	Black cmf SAND trace Silt; mf Gravel; dry; no noticeable petroleum odor; non-plastic.	2.8' = ND	
					3.8' = ND	
		0.4	4.0	Red Brown cmf SAND; some Silt; little fine Gravel; moist; no noticeable petroleum odor; non-plastic.		
	3.3'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; damp; no noticeable petroleum odor; non-plastic.	5.8' = ND	4.0'-6.0'=ND
B					6.8' = ND	6.0'-8.0'=ND
					7.8' = ND	
	3.1'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	9.8' = ND	8.0'-10.0'=ND
C					10.8' = ND	10.0'-12.0'=ND
					11.8' = ND	
	3.0'	12.0	13.4	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	13.5' = ND	12.0'-14.0'=ND
D					14.5' = ND	14.0'-16.0'=ND
		13.4	14.1	Brown Silty CLAY; some mf Sand; little f Gravel; moist; no noticeable petroleum odor; non-plastic.	15.5' = ND	
		14.1	16.0	Gray CLAY; little cm Sand; trace f Gravel; moist; no noticeable petroleum odor; non-plastic.		
	4.0'	16.0	20.0	Gray CLAY; some occasional f Sand; wet; no noticeable petroleum odor; non-plastic.	16.5' = ND	16.0'-18.0'=ND
E					17.5' = ND	18.0'-20.0'=ND
					18.5' = ND	
					19.5' = ND	
	4.0'	20.0	24.0	Gray CLAY; some occasional f Sand; wet to saturated; no noticeable petroleum odor; non-plastic.	20.5' = ND	20.0'-22.0'=ND
F					21.5' = ND	22.0'-24.0'=ND
					22.5' = ND	
					23.5' = ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-5

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.8'	0.0	0.5	Asphalt and subbase.	2.0' = ND	0.0'-2.0'=ND
		0.5	4.0	Brown cmf Sand; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	2.5' = ND	2.0'-4.0'=ND
					3.5' = ND	
B	3.0'	4.0	8.0	Brown cmf Sand; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	5.1' = ND	4.0'-6.0'=ND
					5.5' = ND	6.0'-8.0'=ND
					6.5' = ND	
					7.5 ' =ND	
C	4.0'	8.0	12.0	Brown cmf Sand; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	8.5' = ND	8.0'-10.0'=ND
					9.5' = ND	10.0'-12.0'=ND
					10.5' = ND	
					11.5' = ND	
D	3.8'	12.0	13.5	Brown cmf Sand; trace Silt; some cmf Gravel; occasional cobble; moist; no noticeable petroleum odor; non-plastic.	8.5' = ND	10.0'-12.0'=ND
					9.5' = ND	10.0'-12.0'=ND
		13.5	16.0	Gray CLAY; some cm Sand; trace f Gravel; wet; no noticeable petroleum odor; non-plastic.	10.5 '= ND	
					11.5' = ND	
E	4.0'	16.0	20.0	Gray CLAY; some cm Sand; wet to saturated; no noticeable petroleum odor; non plastic.	8.5' = ND	10.0'-12.0'=ND
					9.5' = ND	10.0'-12.0'=ND
					10.5' = ND	
					11.5' = ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-6

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE; ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	2.4	0.0	0.5	Asphalt and subbase.	2.0' = ND	0.0'-2.0'=ND
A		0.5	4.0	Red Brown cmf SAND; trace Silt; little mf Gravel; dry; no noticeable petroleum odor; non-plastic.	2.5' = ND 3.5' = ND	2.0'-4.0'=ND
	4.0'	4.0	8.0	Red Brown cmf SAND; trace Silt; little mf Gravel; dry; no noticeable petroleum odor; non-plastic.	4.5' = ND 5.5' = ND	4.0'-6.0'=ND 6.0'-8.0'=ND
B					6.5' = ND 7.5 ' =ND	
	2.0'	8.0	12.0	Red Brown cmf SAND; trace Silt; little mf Gravel; dry; no noticeable petroleum odor; non-plastic.	10.5' = ND 11.5' = ND	8.0'-10.0'=ND 10.0'-12.0'=ND
C						
	4.0'	12.0	13.0	Red Brown cmf SAND; trace Silt; little mf Gravel; moist; no noticeable petroleum odor; non-plastic.	12.5' = ND 13.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
		13.0	14.2	Grey CLAY; some cmf Sand; some f Gravel; wet; no noticeable petroleum odor; non-plastic.	14.5 '= ND 15.5' = ND	
D		14.2	15.0	Grey CLAY; wet; no noticeable petroleum odor; non-plastic.		
		15.0	16.0	Grey CLAY; occasional seam f Sand; wet; no noticeable petroleum odor; non-plastic.		
	4.0'	16.0	20.0	Grey CLAY; occasional seam f Sand; wet; no noticeable petroleum odor; non-plastic.	16.5' = ND 17.5' = ND	16.0'-18.0'=ND 18.0'-20.0'=ND
E					18.5 '= ND 19.5' = ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/19/08
Boring I.D. SB-7

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.4'	0.0	0.5	Asphalt and subbase	2.0' = ND	0.0'-2.0'=ND
		0.5	4.0	Brown cmf SAND; trace Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	2.5' = ND 3.5' = ND	2.0'-4.0'=ND
B	1.8'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	6.5' = ND 7.5 ' =ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.2'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	10.5' = ND 11.5' = ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.7'	12.0	13.5	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; moist; no noticeable petroleum odor; non-plastic.	12.5' = ND 13.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
		13.5	14.0	Grey mf SAND; some cmf Gravel; saturated; gasoline odor; non-plastic.	14.5 '= ND	
		14.0	15.0	Brown Silty CLAY; some cm Sand; some f Gravel; wet; no noticeable petroleum odor; non-plastic.	15.5' = ND	
		15.0	16.0	Grey CLAY; some f Gravel; wet; no noticeable petroleum odor; non-plastic.		
E	4.0'	16.0	19.0	Grey CLAY; some f Gravel; wet to saturated; no noticeable petroleum odor; non-plastic.	16.5' = ND 17.5' = ND	16.0'-18.0'=ND 18.0'-20.0'=ND
		19.0	20.0	Grey CLAY; occasional seam f Sand; no noticeable petroleum odor.	18.5 '= ND 19.5 '= ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/20/08
Boring I.D. SB-8

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
220 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.8'	0.0	0.5	Asphalt and subbase.	1.8' = ND	0.0'-2.0'=ND
		0.5	4.0	Brown cmf SAND; some Silt; little mf Gravel; wet; no noticeable petroleum odor; non-plastic.	2.8' = ND 3.8' = ND	2.0'-4.0'=ND
B	1.0'	4.0	8.0	Brown cmf SAND; some Silt; little mf Gravel; dry; no noticeable petroleum odor; non-plastic.	7.1' = ND 7.5' = ND	4.0'-8.0'=ND
C	2.3'	8.0	12.0	Brown cmf SAND; some Silt; little mf Gravel; dry; no noticeable petroleum odor; non-plastic.	10.0' = ND 10.8' = ND 11.8' = ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	4.0'	12.0	13.0	Brown cmf SAND; some Silt; little mf Gravel; saturated; no noticeable petroleum odor; non-plastic.	12.5' = ND 13.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
		13.0	14.5	Brown silty CLAY; little cm Sand; wet; no noticeable petroleum odor; plastic.	14.5 '= ND	
		14.5	16.0	Grey CLAY; trace cm Sand; moist; no noticeable petroleum odor; plastic.	15.5' = ND	
E	4.0'	16.0	20.0	Grey CLAY; trace cm Sand; saturated to wet; no noticeable petroleum odor; plastic.	16.5' = ND 17.5' = ND 18.5 '= ND 19.5 '= ND	16.0'-18.0'=ND 18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/20/08
Boring I.D. SB-9

Client:	NYSDEC Remedial Bureau C
Project Location:	H.M. Quackenbush Facility
	22 North Prospect st. Herkimer
Probe Model:	Geoprobe 6620DT
OP-Tech Representatives:	J. Naselli / M. O'Brien
Client Representative:	None
Others Present:	None
Utility Clearance by:	Dig Safely New York
Sampling Method:	Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	2.0'	0.0	0.5	Asphalt and subbase.	2.1' = ND	0.0'-4.0'=ND
		0.5	4.0	Brown cmf SAND; some Silt; little cmf Gravel; brick fragments; moist; no noticeable petroleum odor; non-plastic.	2.8' = ND	
A					3.8' = ND	
	2.6'	4.0	8.0	Brown cmf SAND; some Silt; little cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	2.8' = ND	4.0'-6.0'=ND
					6.8' = ND	6.0'-8.0'=ND
B					7.8' = ND	
	3.1'	8.0	12.0	Brown cmf SAND; some Silt; little cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	10.0' = ND	8.0'-10.0'=ND
					10.8' = ND	10.0'-12.0'=ND
C					11.8' = ND	
	3.0'	12.0	15.1	Brown cmf SAND; some Silt; little cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.		12.0'-14.0'=ND
					13.5' = ND	14.0'-16.0'=ND
D		15.1	16.0	Brown silty CLAY; little cm Sand; wet; no noticeable petroleum odor; plastic.	14.5 '= ND	
					15.5' = ND	
	3.0'	16.0	17.0	Grey CLAY; some cm Sand; little f Gravel; wet to saturated; no noticeable petroleum odor; plastic.		16.0'-18.0'=ND
					17.5' = ND	18.0'-20.0'=ND
E		17.0	20.0	Grey CLAY; occasional seam f Sand; no noticeable petroleum odor; plastic.	18.5 '= ND	
					19.5 '= ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/20/08
Boring I.D. SB-10

Client:	NYSDEC Remedial Bureau C
Project Location:	H.M. Quackenbush Facility
	22 North Prospect st. Herkimer
Probe Model:	Geoprobe 6620DT
OP-Tech Representatives:	J. Naselli / M. O'Brien
Client Representative:	None
Others Present:	None
Utility Clearance by:	Dig Safely New York
Sampling Method:	Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.0'	0.0	0.5	Asphalt and subbase.	2.1' = ND	0.0'-4.0'=ND
		0.5	4.0	Brown cmf SAND; some Silt; little mf Gravel; wet; brick; cinders; wet; no noticeable petroleum odor; non-plastic.	2.8' = ND 3.8' = ND	
B	2.6'	4.0	8.0	Brown cmf SAND; some Silt; little mf Gravel; moist; brick; cinders; wet; no noticeable petroleum odor; non-plastic.	2.8' = ND 6.8' = ND 7.8' = ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.4'	8.0	12.0	Brown cmf SAND; some Silt; little mf Gravel; occasional Cobble; dry; wet; no noticeable petroleum odor; non-plastic.	10.0' = ND 10.8' = ND 11.8' = ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	4.0'	12.0	16.0	Brown silty CLAY; some cmf Sand; little f Gravel; moist; slight gasoline odor; very dense; slightly plastic.	13.5' = 1.93 14.5 '= 0.007 15.5' = 44.1	12.0'-14.0'=2.5 14.0'-16.0'=61
E	4.0'	16.0	20.0	Grey mottled brown Clay; occasional seam f Sand; gasoline odor; moist; plastic.	16.5' = 1.32 17.5 '= 0.009 18.5 '= 0.025 19.5 '= 142	16.0'-18.0'=25 18.0'-20.0'=106
F	4.0'	20.0	22.0	Grey mottled brown Clay; occasional seam f Sand; gasoline odor; moist; plastic.	20.5' = ND 21.5' = ND	20.0'-22.0'=ND 22.0'-24.0'=ND
		22.0	24.0	Grey CLAY, occasional seam f Sand; gasoline odor; moist; plastic.	22.5' = ND 23.5' = ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/20/08
Boring I.D. SB-9

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	2.0'	0.0	0.5	Asphalt and subbase.	2.1' = ND	0.0'-4.0'=ND
		0.5	4.0	Brown cmf SAND; some Silt; little cmf Gravel; brick fragments; moist; no noticeable petroleum odor; non-plastic.	2.8' = ND	
A					3.8' = ND	
	2.6'	4.0	8.0	Brown cmf SAND; some Silt; little cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	2.8' = ND	4.0'-6.0'=ND
					6.8' = ND	6.0'-8.0'=ND
B					7.8' = ND	
	3.1'	8.0	12.0	Brown cmf SAND; some Silt; little cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	10.0' = ND	8.0'-10.0'=ND
					10.8' = ND	10.0'-12.0'=ND
C					11.8' = ND	
	3.0'	12.0	15.1	Brown cmf SAND; some Silt; little cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.		12.0'-14.0'=ND
					13.5' = ND	14.0'-16.0'=ND
D		15.1	16.0	Brown silty CLAY; little cm Sand; wet; no noticeable petroleum odor; plastic.	14.5 '= ND	
					15.5' = ND	
	3.0'	16.0	17.0	Grey CLAY; some cm Sand; little f Gravel; wet to saturated; no noticeable petroleum odor; plastic.		16.0'-18.0'=ND
					17.5' = ND	18.0'-20.0'=ND
E		17.0	20.0	Grey CLAY; occasional seam f Sand; no noticeable petroleum odor; plastic.	18.5 '= ND	
					19.5 '= ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/20/08
Boring I.D. SB-11

Client:	NYSDEC Remedial Bureau C
Project Location:	H.M. Quackenbush Facility
	22 North Prospect st. Herkimer
Probe Model:	Geoprobe 6620DT
OP-Tech Representatives:	J. Naselli / M. O'Brien
Client Representative:	None
Others Present:	None
Utility Clearance by:	Dig Safely New York
Sampling Method:	Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	2.1'	0.0	0.5	Asphalt and subbase.	2.1' = ND	0.0'-4.0'=ND
A		0.5	4.0	Brown cmf SAND; little Silt; some cmf Gravel; moist; no noticeable petroleum odor; non-plastic.	2.8' = ND 3.8' = ND	
	2.4'	4.0	8.0	Brown cmf SAND; little Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	6.0' = ND 6.8' = ND	4.0'-6.0'=ND 6.0'-8.0'=ND
B					7.8' = ND	
	3.6'	8.0	12.0	Brown cmf SAND; little Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	8.8' = ND 9.8' = ND	8.0'-10.0'=ND 10.0'-12.0'=ND
C					10.8' = ND 11.8' = ND	
	4.0'	12.0	12.5	Brown cmf SAND; little Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	12.5' = ND 13.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
D		12.5	15.0	Brown turning to Grey silty CLAY; some cmf Sand; some f Gravel; very dense; dry; no noticeable petroleum odor; non-plastic.	14.5' = ND 15.5' = ND	
		15.0	16.0	Grey CLAY; occasional some f Sand; wet; no noticeable petroleum odor; plastic		
	4.0'	16.0	20.0	Grey CLAY; occasional some f Sand; saturated; no noticeable petroleum odor;	16.5' = ND 17.5' = ND	16.0'-18.0'=ND 18.0'-20.0'=ND
E					18.5' = ND 19.5' = ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/20/08
Boring I.D. SB-12

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	3.0'	0.0	0.5	Asphalt and subbase.	0.0'-1.8'=ND	0.0'-4.0'=ND
		0.5	4.0	Brown cmf SAND; course Silt; some cmf Gravel; brick cinders; moist; no noticeable petroleum odor; non-plastic.	1.8'-2.8'=ND 2.8'-3.8'=ND	
B	2.4'	4.0	8.0	Brown cmf SAND; course Silt; some cmf Gravel; brick cinders; dry; no noticeable petroleum odor; non-plastic.	3.8'-5.8'=ND 5.8'-6.8'=ND 6.8'-7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	4.0'	8.0	12.0	Brown cmf SAND; course Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	7.8'-8.5'=ND 8.5'-9.5'=ND 9.5'-10.5'=ND 10.5'-11.5'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	4.0'	12.0	13.0	Brown silty CLAY; some cmf Sand; trace f Gravel; moist; no noticeable petroleum odor; slightly plastic; dense.	12.5' = ND 13.5' = ND	12.0'-14.0'=ND 14.0'-16.0'=ND
		13.0	16.0	Grey CLAY; occasional some f Sand; saturated; no noticeable petroleum odor; plastic.	14.5' = ND 15.5' = ND	
E	4.0'	16.0	20.0	Grey CLAY; occasional some f Sand; saturated; no noticeable petroleum odor;	16.5' = ND 17.5' = ND 18.5' = ND 19.5' = ND	16.0'-18.0'=ND 18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-13

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	2.1'	0.0	0.5	Asphalt and subbase.	2.1'=ND	0.0'-4.0'=ND
A		0.5	4.0	Brown cmf SAND; some Silt; some cmf Gravel; brick cinders; wet; no noticeable petroleum odor; non-plastic.	2.8'=ND 3.8'=ND	
B	3.0'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; brick cinders; dry; no noticeable petroleum odor; non-plastic.	5.8'=ND 6.8'=ND 7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.2'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	9.8'=ND 10.8'=ND 11.8'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.7'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; some Cobble; dry; no noticeable petroleum odor; non-plastic.	12.8'=ND 13.8'=ND 14.8'=ND 15.8'=ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	4.0'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; some Cobble; saturated at 14.7fbg; no noticeable petroleum odor; non-plastic.	16.8'=ND 17.8'=ND 18.8'=ND 19.8'=ND	16.0'-18.0'=ND 18.0'-20.0'=ND
F	3.8'	20.0	24.0	Brown cmf SAND; trace Silt; some mf Gravel; saturated; no noticeable petroleum odor; non-plastic.	20.7'=ND 21.7'=ND 22.8'=ND 23.8'=ND	20.0'-22.0'=ND 22.0'-24.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-14

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	1.9'	0.0	0.5	Asphalt and subbase.	2.5'=ND	0.0'-4.0'=ND
		0.5	4.0	Brown cmf SAND; some Silt, some cmf Gravel; wet; no noticeable petroleum odor; non-plastic.	2.8'=ND 3.8'=ND	
B	3.0'	4.0	8.0	Brown cmf SAND; some Silt, some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	5.8'=ND 6.8'=ND 7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.1'	8.0	12.0	Brown cmf SAND; some Silt, some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	9.8'=ND 10.8'=ND 11.8'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.0'	12.0	16.0	Brown cmf SAND; some Silt, some cmf Gravel; occasional Cobble; moist; no noticeable petroleum odor; non-plastic.	13.8'=ND 14.8'=ND 15.8'=ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	2.9'	16.0	20.0	Brown cmf SAND; some Silt, some cmf Gravel; occasional Cobble; saturated at 18.5fbg; no noticeable petroleum odor; non-plastic.	18.8'=ND 19.8'=ND	16.0'-18.0'=ND 18.0'-20.0'=ND
F	2.0'	20.0	24.0	Brown cmf SAND; some mf angular Gravel; saturated; no noticeable petroleum odor; non-plastic.	22.8'=ND 23.8'=ND	20.0'-22.0'=ND 22.0'-24.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-15

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	2.1'	0.0	0.5	Asphalt and subbase.	2.0'=ND	0.0'-4.0'=ND
A		0.5	4.0	Brown cmf SAND; some Silt; some cmf Gravel; brick cinders; wet; no noticeable petroleum odor; non-plastic.	2.8'=ND 3.8'=ND	
B	3.0'	4.0	8.0	Brown cmf SAND; some Silt; some cmf Gravel; brick cinders; moist; no noticeable petroleum odor; non-plastic.	2.8'=ND 6.8'=ND 7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
	3.2'	8.0	10.0	Brown cmf SAND; some Silt; some cmf Gravel; dry; no noticeable petroleum odor; nor	8.1'=ND	8.0'-10.0'=ND
		10.0	10.8	Brown SILT; little f Sand; saturated; no noticeable petroleum odor; non-plastic.	9.8'=ND	10.0'-12.0'=ND
C		10.8	11.4	Cobbles	10.8'=ND	
		11.4	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	11.8'=ND	
	3.9'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry to moist; no noticeable petroleum odor; non-plastic.	12.5'=ND	12.0'-14.0'=ND
D					13.5'=ND	14.0'-16.0'=ND
					14.5'=ND	
					15.5'=ND	
	3.4'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated at 18.0 fbg; no noticeable petroleum odor; non-plastic.	16.5'=ND	16.0'-18.0'=ND
E					17.5'=ND	18.0'-20.0'=ND
					18.5'=ND	
					19.5'=ND	
	3.1'	20.0	24.0	Brown cmf SAND; angualr mf Gravel; saturated; no noticeable petroleum odor; non-plastic.	22.5'=ND	20.0'-22.0'=ND
F					23.5'=ND	22.0'-24.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-16

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	3.0'	0.0	0.3	Concrete.	1.8'=ND	0.0'-4.0'=ND
		0.3	2.0	Brown cmf SAND; trace Silt; little f Gravel; dry; no noticeable petroleum odor; non-plastic.	2.8'=ND	
		2.0	2.5	Asphalt.	3.8'=ND	
		2.5	4.0	Brown cmf SAND; trace Silt; little f Gravel; dry; no noticeable petroleum odor; non-plastic.		
B	3.3'	4.0	8.0	Brown cmf SAND; trace Silt; little f Gravel; little Cobble; dry; no noticeable petroleum odor; non-plastic.	5.8'=ND 6.8'=ND 7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	2.4'	8.0	12.0	Brown cmf SAND; trace Silt; little f Gravel; little Cobble; dry; no noticeable petroleum odor; non-plastic.	9.8'=ND 10.8'=ND 11.8'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.1'	12.0	16.0	Brown cmf SAND; trace Silt; little f Gravel; little Cobble; moist; no noticeable petroleum odor; non-plastic.	13.8'=ND 14.8'=ND 15.8'=ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	3.0'	16.0	20.0	Brown cmf SAND; trace Silt; little f Gravel; little Cobble; saturated at 18.5 fbg; no noticeable petroleum odor; non-plastic.	17.5'=ND 18.5'=ND 19.5'=ND	16.0'-18.0'=ND 18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-17

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	3.0'	0.0	0.3	Concrete.	1.8'=ND	0.0'-4.0'=ND
		0.3	2.0	Brown cmf SAND; little Silt; little f Gravel.	2.8'=ND	
A		2.0	2.5	Asphalt.	3.8'=ND	
		2.5	4.0	Brown cmf SAND; little Silt; little f Gravel; dry; no noticeable petroleum odor; non-plastic.		
	4.0'	4.0	8.0	Brown cmf SAND; little Silt; little f Gravel; little Cobble; dry; no noticeable petroleum odor; non-plastic.	5.8'=ND	4.0'-6.0'=ND
					6.8'=ND	6.0'-8.0'=ND
B					7.8'=ND	
	3.0'	8.0	11.5	Brown cmf SAND; little Silt; little f Gravel; little Cobble; dry; no noticeable petroleum odor; non-plastic; dense.	9.5'=ND	8.0'-10.0'=ND
					10.5'=ND	11.0'-12.0'=14.4
C		11.5	12.0	Black brown cmf SAND; trace Silt; little f Gravel; wet; slight petroleum odor.	11.5'=7.84	
	2.9'	12.0	12.5	Black brown cmf SAND; trace Silt; little f Gravel; wet; slight petroleum odor.	12.5'=1.52	12.0'-13.0'=4.5
					13.5'=ND	13.0'-16.0'=ND
D		12.5	16.0	Brown cmf SAND; little Silt; some f Gravel; little Cobble; moist; no noticeable petroleum odor; non-plastic.	14.5'=ND	
					15.5'=ND	
	3.5'	16.0	20.0	Brown cmf SAND; little Silt; some f Gravel; little Cobble; saturated at 18.5 fbg; slight petroleum odor; non-plastic.	16.5'=ND	16.0'-18.0'=ND
					17.5'=ND	18.0'-20.0'=ND
E					18.5'-ND	
					19.5'=ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-18

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	2.8'	0.0	0.3	Concrete	1.8'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; trace Silt; some cmf Gravel; little Cobbles; dry; no noticeable petroleum odor; non-plastic.	2.8'=ND	
					3.8'=ND	
B	3.1'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; little Cobbles; dry; no noticeable petroleum odor; non-plastic.	5.0'=ND	4.0'-6.0'=ND
					5.8'=ND	6.0'-8.0'=ND
					6.8'=ND	
					7.8'=ND	
C	4.0'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; little Cobbles; dry; no noticeable petroleum odor; non-plastic.	8.5'=ND	8.0'-10.0'=ND
					9.5'=ND	10.0'-12.0'=ND
					10.5'=ND	
					11.5'=ND	
D	4.0'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; little Cobbles; saturated at 17.5 fbg; no noticeable petroleum odor; non-plastic.	12.5'=ND	12.0'-14.0'=ND
					13.5'=ND	14.0'-16.0'=ND
					14.5'=ND	
					15.5'=ND	
E	4.0'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; little Cobbles; saturated; no noticeable petroleum odor; non-plastic.	16.5'=ND	16.0'-18.0'=ND
					17.5'=ND	18.0'-20.0'=ND
					18.5'-ND	
					19.5'=ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-19

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	2.7'	0.0	0.3	Concrete.	1.8'=ND	0.0'-4.0'=ND
A		0.3	4.0	Grey cmf SAND; trace Silt; some mf Gravel; dry; no noticeable petroleum odor; non-plastic.	2.8'=ND 3.8'=ND	
	2.5'	4.0	8.0	Grey cmf SAND; trace Silt; some mf Gravel; some Cobbles; dry; no noticeable petroleum odor; non-plastic.		4.0'-6.0'=ND
B					5.8'=ND 6.8'=ND 7.8'=ND	6.0'-8.0'=ND
	3.0'	8.0	12.0	Grey cmf SAND; trace Silt; some mf Gravel; some Cobbles; moist; no noticeable petroleum odor; non-plastic.		8.0'-10.0'=ND
C					9.5'=ND 10.5'=ND 11.5'=ND	10.0'-12.0'=ND
	2.8'	12.0	16.0	Grey cmf SAND; trace Silt; some mf Gravel; some Cobbles; occasional wet cmf Sand; moist; no noticeable petroleum odor; non-plastic.	13.5'=ND	12.0'-14.0'=ND
D					14.5'=ND 15.5'=ND	14.0'-16.0'=ND
	4.0'	16.0	20.0	Grey cmf SAND; trace Silt; some mf Gravel; some Cobbles; occasional wet cmf Sand; saturated at 17.5 fbg; no noticeable petroleum odor; non-plastic.	16.5'=ND	16.0'-18.0'=ND
E					17.5'=ND 18.5'=ND 19.5'=ND	18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-20

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	1.4'	0.0	0.3	Concrete.	1.8'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; trace Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	2.8'=ND 3.8'=ND	
B	1.0'	4.0	5.0	Brown cmf SAND; trace Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	4.1'=ND 4.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C						
D						
E						

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 5.0 fbg Refusal BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/23/08
Boring I.D. SB-21

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
	2.9'	0.0	0.3	Concrete.	1.8'=ND	0.0'-4.0'=ND
A		0.3	4.0	Black grey cmf SAND; trace Silt; little cmf Gravel; cinders; coal; dry; no noticeable petroleum odor; non-plastic.	2.8'=ND 3.8'=ND	
	3.3'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; some Cobbles; dry; no noticeable petroleum odor; non-plastic.		4.0'-6.0'=ND
B					5.8'=ND 6.8'=ND 7.8'=ND	6.0'-8.0'=ND
	3.0'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; some Cobbles; dry; no noticeable petroleum odor; non-plastic.		8.0'-10.0'=ND
C					9.5'=ND 10.5'=ND 11.5'=ND	10.0'-12.0'=ND
	3.9'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; some Cobbles; dry to moist; no noticeable petroleum odor; non-plastic.	13.5'=ND	12.0'-14.0'=ND
D					14.5'=ND 15.5'=ND	14.0'-16.0'=ND
	4.0'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; some Cobbles; saturated at 17.5 fbg; no noticeable petroleum odor; non-plastic.	16.5'=ND	16.0'-18.0'=ND
E					17.5'=ND 18.5'=ND 19.5'=ND	18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-22

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	3.7'	0.0	0.3	Asphalt and subbase.	0.5'=ND	0.0'-4.0'=ND
		0.3	2.0	Brown cmf SAND; some Silt; some cmf Gravel.	1.5'=ND	
A		2.0	2.4	Asphalt.	2.5'=ND	
		2.4	4.0	Brown cmf SAND; some Silt; little cmf Gravel; brick; wet; no noticeable petroleum odor; non-plastic.	3.5'=ND	
	3.0'	4.0	8.0	Brown cmf SAND; some Silt; little cmf Gravel; some Cobble; brick; dry; no noticeable petroleum odor; non-plastic.	5.1'=ND	4.0'-6.0'=ND
					6.1'=ND	6.0'-8.0'=ND
B					7.1'=ND	
					7.8'=ND	
	3.1'	8.0	12.0	Brown cmf SAND; some Silt; little cmf Gravel; some Cobble; brick; dry; no noticeable petroleum odor; non-plastic.	9.2'=ND	8.0'-10.0'=ND
C					10.2'=ND	10.0'-12.0'=ND
					11.5'=ND	
	2.0'	12.0	16.0	Brown cmf SAND; some Silt; little cmf Gravel; some Cobble; brick; wet @ 15 fbg; no noticeable petroleum odor; non-plastic.	14.8'=ND	12.0'-14.0'=ND
D					15.8'=ND	14.0'-16.0'=ND
	4.0'	16.0	20.0	Brown cmf SAND; some Silt; little cmf Gravel; some Cobble; brick; wet to saturated @ 18.5 fbg; strong petroleum odor @ 18.0 fbg (NAPL).	17.5'=ND	18.0'-20.0'=161
E					18.5'=25	
					19.5'=37	
	4.0'	20.0	24.0	Brown cmf SAND; some Silt; little cmf Gravel; some Cobble; brick; saturated; strong petroleum odor (NAPL).	20.5'=14.0	20.0'-22.0'=150
					21.5'=38.0	22.0'-23.0'=86
F					22.5'=29.3	23.5'-24.5'=ND
					23.5'=20.4	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-23

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.3'	0.0	0.3	Asphalt	2.0'=ND	0.0'-4.0'=ND
		0.3	2.0	Black brown cmf SAND; some Silt; wet; no noticeable petroleum odor; non-plastic.	2.8'=ND	
		2.0	4.0	Yellow brown cmf SAND; little Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	3.8'=ND	
B	2.6'	4.0	4.2	Yellow brown cmf SAND; little Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	6.8'=ND	
					7.8'=ND	4.0'-6.0'=ND
		4.2	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.		6.0'-8.0'=ND
C	2.9'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	9.8'=ND	
					10.8'=ND	8.0'-10.0'=ND
					11.8'=ND	10.0'-12.0'=ND
D	2.9'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; wet @ 15.3 fbg; no noticeable petroleum odor; non-plastic.	12.5'=ND	12.0'-14.0'=ND
					13.5'=ND	14.0'-16.0'=ND
					14.5'=ND	
E	0.8'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	18.5'=ND	16.0'-20.0'=ND
F	4.0'	20.0	24.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	19.5'=ND	20.0'-22.0'=ND
					22.5'=ND	22.0'-24.0'=ND
					23.5'=ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-24

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	2.8'	0.0	0.3	Asphalt	1.8'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown black cmf SAND; trace Silt; some cmf Gravel; damp; no noticeable petroleum odor; non-plastic.	2.8'=ND	
					3.8'=ND	
B	2.0'	4.0	8.0	Brown black cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	5.8'=ND	4.0'-6.0'=ND
					6.8'=ND	6.0'-8,0'=ND
					7.8'=ND	
C	3.1'	8.0	12.0	Brown black cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; moist; no noticeable petroleum odor; non-plastic.	9.5'=ND	8.0'-10.0'=ND
					10.5'=ND	10.0'-12.0'=ND
					11.5'=ND	
D	4.0'	12.0	16.0	Brown black cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; wet @ 15.0 fbg; no noticeable petroleum odor; non-plastic.	13.5'=ND	12.0'-14.0'=ND
					14.5'=ND	14.0'-16.0'=ND
					15.5'=ND	
E	4.0'	16.0	20.0	Brown black cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	16.5'=ND	16.0'-18.0'=ND
					17.5'=ND	18.0'-20.0'=ND
					18.5'=ND	
					19.5'=ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-25

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	1.9'	0.0	0.3	Asphalt.	0.0'-2.8'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; trace Silt; some cmf Gravel; moist; no noticeable petroleum odor; non-plastic.	2.8'-3.8'=ND	
B	2.4'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	3.8'-6.0'=ND 6.0'-6.8'=ND 6.8'-7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.1'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	7.8'-9.1'=ND 9.1'-9.8'=ND 9.8'-10.8'=ND 10.8'-11.8'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.7'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; wet @ 15.5; no noticeable petroleum odor; non-plastic.	11.8'-12.5'=ND 12.5'-13.5'=ND 13.5'-14.5'=ND 14.5'-15.5'=ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	4.0'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	15.5'-16.5'=ND 16.5'-17.5'=ND 17.5'-18.5'=ND 18.5'-19.5'=ND	16.0'-18.0'=ND 18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-26

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	2.1'	0.0	0.3	Asphalt.	0.0'-2.0'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; some Silt; some cmf Gravel; wet; no noticeable petroleum odor; non-plastic.	2.0'-2.8'=ND	
A					2.8'-3.8'=ND	
	3.0'	4.0	8.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	3.8'-5.1'=ND	4.0'-6.0'=ND
					5.1'-5.8'=ND	6.0'-8.0'=ND
B					5.8'-6.8'=ND	
					6.8'-7.8'=ND	
	3.7'	8.0	12.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	7.8'-8.3'=ND	8.0'-10.0'=ND
					8.3'-9.5'=ND	10.0'-12.0'=ND
C					9.5'-10.5'=ND	
					10.5'-11.8'=ND	
D	3.2'	12.0	16.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; wet @ 16.0 fbg; no noticeable petroleum odor; non-plastic.	11.8'-13.0'=ND	12.0'-14.0'=ND
					13.0'-13.7'=ND	14.0'-16.0'=ND
					13.7'-14.7'=ND	
					14.7'-15.7'=ND	
E	4.0'	16.0	20.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	15.7'-16.5'=ND	16.0'-18.0'=ND
					16.5'-17.5'=ND	18.0'-20.0'=ND
					17.5'-18.5'=ND	
					18.5'-19.5'=ND	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-27

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	2.0'	0.0	4.0	Brown cmf SAND; little Silt; some cmf Gravel; wet; no noticeable petroleum odor; non-plastic.	0.0'-2.1'=ND 2.1'-2.8'=ND 2.8'-3.8'=ND	0.0'-4.0'=ND
B	2.6'	4.0	8.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	3.8'-5.8'=ND 5.8'-6.8'=ND 6.8'-7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.7'	8.0	12.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	7.8'-8.8'=ND 8.8'-9.8'=ND 9.8'-10.8'=ND 10.8'-11.8'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.4'	12.0	16.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; wet @ 15.3 fbg; no noticeable petroleum odor; non-plastic.	11.8'-12.8'=ND 12.8'-13.5'=ND 13.5'-14.5'=ND 14.5'-15.5'=ND	12.0'-14.0'=ND 14.0'-16.0'=ND
E	3.6'	16.0	20.0	Brown cmf SAND; little Silt; some cmf Gravel; occasional Cobble; saturated; no noticeable petroleum odor; non-plastic.	15.7'-16.5'=ND 16.5'-17.5'=ND 17.5'-18.5'=ND 18.5'-19.5'=ND	16.0'-18.0'=ND 18.0'-20.0'=ND

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-28

Client:	NYSDEC Remedial Bureau C
Project Location:	H.M. Quackenbush Facility
	22 North Prospect st. Herkimer
Probe Model:	Geoprobe 6620DT
OP-Tech Representatives:	J. Naselli / M. O'Brien
Client Representative:	None
Others Present:	None
Utility Clearance by:	Dig Safely New York
Sampling Method:	Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.3'	0.0	0.3	Asphalt.	0.0'-2.0'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; some Silt; some cmf Gravel; wet; no noticeable petroleum odor; non-plastic.	2.0'-2.8'=ND	
					2.8'-3.8'=ND	
B	2.8'	4.0	8.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	3.8'-5.8'=ND	4.0'-6.0'=ND
					5.8'-6.8'=ND	6.0'-8.0'=ND
					6.8'-7.8'=ND	
C	3.0'	8.0	12.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	7.8'-9.1'=ND	8.0'-10.0'=ND
					9.1'-9.8'=ND	10.0'-12.0'=ND
					9.8'-10.8'=ND	
					10.8'-11.8'=ND	
D	4.0'	12.0	16.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; wet @ 15.2 fbg; petroleum odor @ 15 fbg.	11.8'-12.1'=ND	12.0'-14.0'=ND
					12.1'-13.1'=ND	14.0'-16.0'=20.8
					13.1'-14.1'=ND	
					14.1'-15.1'=6.4	
E	3.6'	16.0	20.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; saturated; strong petroleum odor; visible #6 fuel oil product; non-plastic.	15.1'-16.5'=4.84	16.0'-18.0'=142
					16.5'-17.5'=20.3	18.0'-20.0'=86.7
					17.5'-18.5'=28.7	
					18.5'-19.5'=11.4	
F	3.4'	20.0	22.0	Brown cmf SAND; some Silt; some cmf Gravel; occasional Cobble; saturated; strong petroleum odor; visible #6 fuel oil product; non-plastic.	19.5'-20.8'=14.6	20.0'-22.0'=120
					20.8'-21.8'=9.14	22.0'-24.0'=35.7
		22.0	24.0	Grey cmf SAND; little f Gravel; trace Silt; saturated; strong petroleum odor; no visible #6 fuel oil product.	21.8'-22.8'=4.38	
					22.8'-23.8'=2.4	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-29

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
A	1.8'	0.0	0.3	Asphalt.	0.0'-2.8'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; some Silt; some cmf Gravel; wet; no noticeable petroleum odor; non-plastic.	2.8'-3.8'=ND	
B	2.1'	4.0	8.0	Brown cmf SAND; some Silt; some cmf Gravel; dry; no noticeable petroleum odor; non-plastic.	3.8'-6.0'=ND 6.0'-6.8'=ND 6.8'-7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	3.4'	8.0	12.0	Brown cmf SAND; some Silt; some cmf Gravel; wet; slight petroleum odor; non-plastic.	7.8'-8.8'=ND 8.8'-9.8'=ND 9.8'-10.8'=0.009 10.8'-11.8'=0.008	8.0'-10.0'=ND 10.0'-12.0'=0.64
D	4.0'	12.0	16.0	Brown cmf SAND; some Silt; some cmf Gravel; wet @ 14.5 fbg; slight petroleum odor; non-plastic.	13.5' = 0.033 14.5' = 23.4 15.5' = 10.5	12.0'-14.0'=ND 14.0'-16.0'=52.1
E	4.0'	16.0	20.0	Brown cmf SAND; some Silt; some cmf Gravel; saturated; no noticeable petroleum odor; non-plastic.	17.5' = 20.4 18.5' = 18.7 19.5' = 21.1	16.0'-18.0'=78.3 18.0'-20.0'=35.6
F	3.8'	20.0	24.0	Brown cmf SAND; some Silt; some cmf Gravel; saturated; no noticeable petroleum odor; non-plastic.	20.5' = 15.4 21.5' = 18.3 22.5' = 0.009 23.5' = 4.54	20.0'-22.0'=49 22.0'-24.0'=22.1

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 6/24/08
Boring I.D. SB-30

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:	*Relative Grain Size:*
and = 35 to 50%	**c** = course
some = 20 to 30%	**m** = medium
little = 10 to 20%	**f** = fine
trace = less than 10%	

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	HEADSPACE fbg
A	2.1'	0.0	0.3	Asphalt.	0.0'-2.0'=ND	0.0'-4.0'=ND
		0.3	4.0	Brown cmf SAND; trace Silt; some cmf Gravel; wet; no noticeable petroleum odor; non-plastic.	2.0'-2.8'=ND	
					2.8'-3.8'=ND	
B	2.4'	4.0	8.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	3.8'-5.8'=ND	4.0'-6.0'=ND
					5.8'-6.8'=ND	6.0'-8.0'=ND
					6.8'-7.8'=ND	
C	3.0'	8.0	12.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; dry; no noticeable petroleum odor; non-plastic.	7.8'-9.8'=ND	8.0'-10.0'=ND
					9.8'-10.8'=ND	10.0'-12.0'=ND
					10.8'-11.8'=ND	
D	4.0'	12.0	16.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated at at 15fbg; no noticeable petroleum odor; non-plastic.	11.8'-12.8'=ND	12.0'-14.0'=ND
					12.8'-13.8'=ND	14.0'-16.0'=ND
					13.8'-14.8'=ND	
					14.8'-15.8'=ND	
E	3.7'	16.0	20.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated; visible #6 fuel oil; non-plastic.	15.8'-16.8'=ND	
					16.8'-17.8'=ND	16.0'-18.0'=0.084
					17.8'-18.8'=10.40	18.0'-20.0'=38.9
					18.8'-19.8'=9.43	
F	4.0'	20.0	24.0	Brown cmf SAND; trace Silt; some cmf Gravel; occasional Cobble; saturated; petroleum odor @ 22-24 fbg; visible #6 fuel oil product @ 20-22 fbg.	19.8'-20.5'=1.43	
					20.5'-21.5-0.114	20.0'-22.0'=11.6
					21.5'-22.5'=0.035	22.0'-24.0'=9.84
					22.5'-23.5'=0.020	

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 24.0 fbg BY: Joe Naselli

OP-TECH
Environmental Services, Inc.

SUBSURFACE INVESTIGATION LOG

OP-TECH Project No.: ADCR-0012
Date: 7/2/08
Boring I.D. SB-31

Client: NYSDEC Remedial Bureau C
Project Location: H.M. Quackenbush Facility
22 North Prospect st. Herkimer
Probe Model: Geoprobe 6620DT
OP-Tech Representatives: J. Naselli / M. O'Brien
Client Representative: None
Others Present: None
Utility Clearance by: Dig Safely New York
Sampling Method: Geoprobe Macro Core

LEGEND

Relative Composition:
and = 35 to 50%
some = 20 to 30%
little = 10 to 20%
trace = less than 10%

Relative Grain Size:
c = course
m = medium
f = fine

SAMPLE NUMBER	RECOVERY (FT)	DEPTH (FT) FROM	DEPTH (FT) TO	Description/Soil Characteristics/ Observations (COLOR, TEXTURE, RELATIVE MOISTURE, ODOR)	PID (ppm) DIRECT fbg	PID (ppm) HEADSPACE fbg
	1.8'	0.0	0.3	Asphalt and subbase.	0.0'-2.8'=ND	0.0'-4.0'=ND
A		0.3	4.0	Brown cmf SAND; trace Silt; some mf Gravel; brick; moist; no noticeable petroleum odor; non-plastic.	2.8'-3.8'=ND	
B	2.3'	4.0	8.0	Brown cmf SAND; trace Silt; some mf Gravel; brick; dry; no noticeable petroleum odor; non-plastic.	3.8'-6.0'=ND 6.0'-6.8'=ND 6.8'-7.8'=ND	4.0'-6.0'=ND 6.0'-8.0'=ND
C	2.1'	8.0	12.0	Brown cmf SAND; trace Silt; some mf Gravel; occasional Cobble; brick; dry; no noticeable petroleum odor; non-plastic.	7.8'-10.0'=ND 10.0'-10.8'=ND 10.8'-11.8'=ND	8.0'-10.0'=ND 10.0'-12.0'=ND
D	3.4'	12.0	16.0	Brown cmf SAND; trace Silt; some mf Gravel; occasional Cobble; brick; wet @ 15.2 fbg; strong petroleum odor; visible #6 fuel oil product.	11.8'-13.5'=ND 13.5'-14.5'=6.84 14.5'-15.5'=24.2	12.0'-14.0'=ND 14.0'-16.0'=96.0
E	3.8'	16.0	20.0	Brown cmf SAND; trace Silt; some mf Gravel; occasional Cobble; brick; saturated; strong petroleum odor; visible #6 fuel oil product.	15.5'-16.5'=ND 16.5'-17.8'=10.9 17.8'-18.5'=18.1 18.5'-19.5'=12.3	16.0'-18.0'=65.0 18.0'-20.0'-40.0

NOTES: Depths noted are approximate; soil characteristics based on visual and manual field observations only. PID screening performed by headspace analysis with MiniRAE 2000, equipped with 10.6 eV lamp.
ND = None Detected; PPM = Parts Per Million; NS Not Screened; FBG - feet below grade

BORING TERMINATED AT: 20.0 fbg BY: Joe Naselli

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (.e 5'8-355-0197/Fax 518-355-3256)

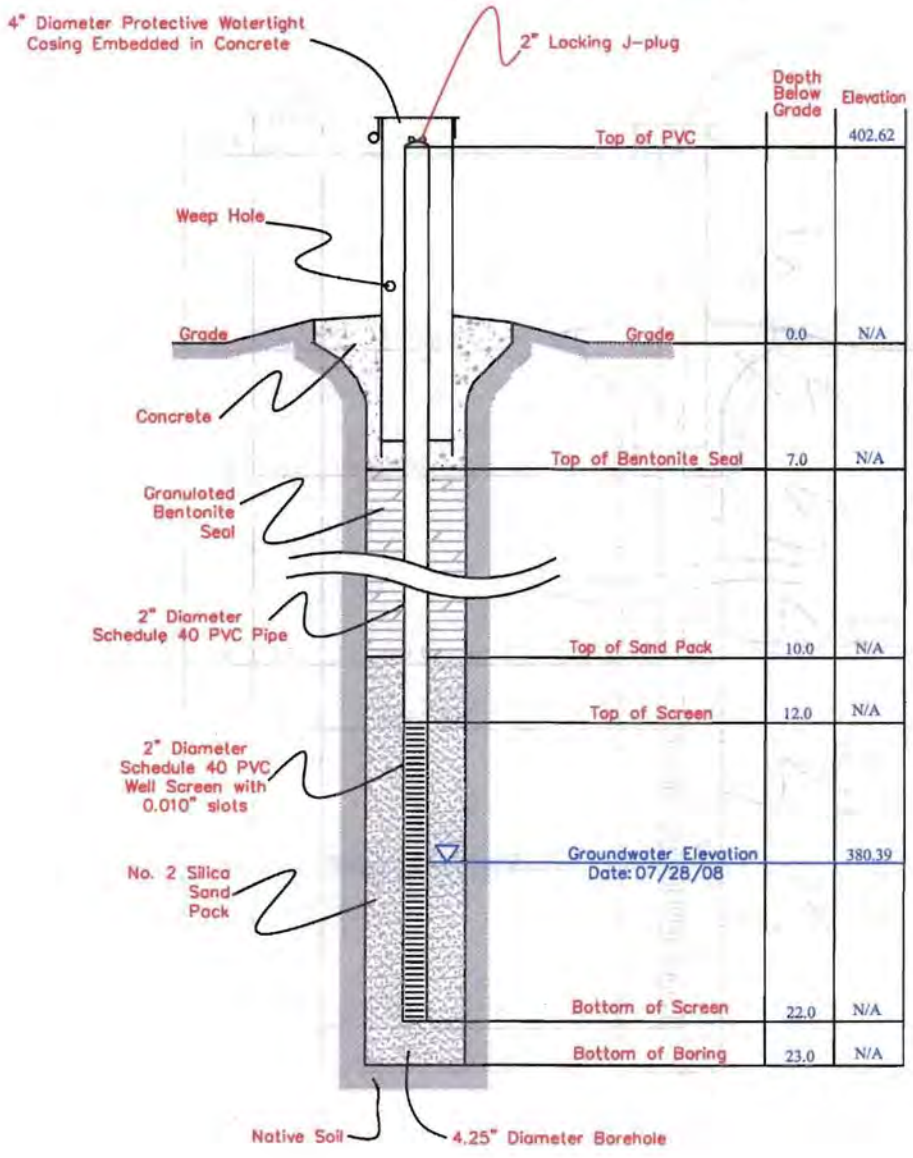
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect St. Herkimer, NY

Install Date: June 25, 2008

Monitoring Well No.: MW-6



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197/Fax 518-355-3256)

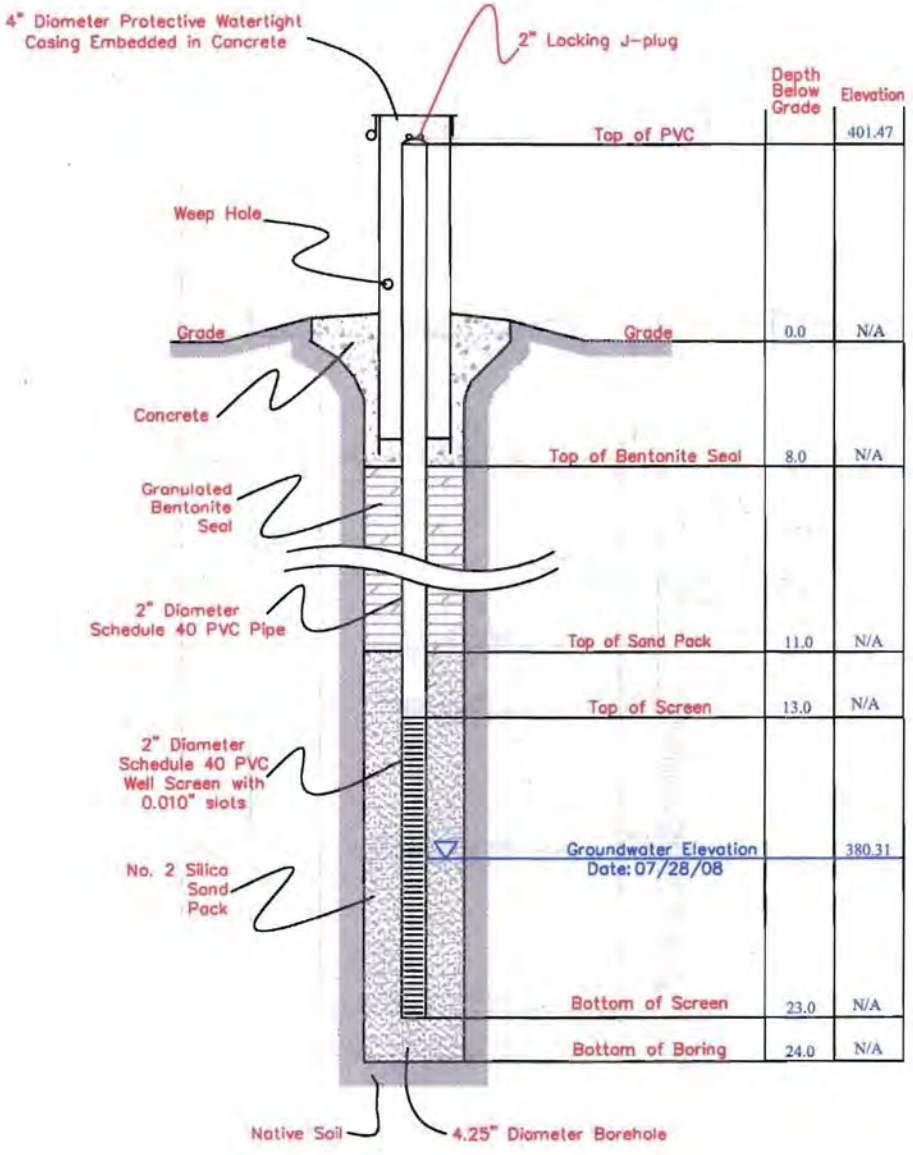
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect St. Herkimer, NY

Install Date: June 27, 2008

Monitoring Well No.: MW-7



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197/Fax 518-355-3256)

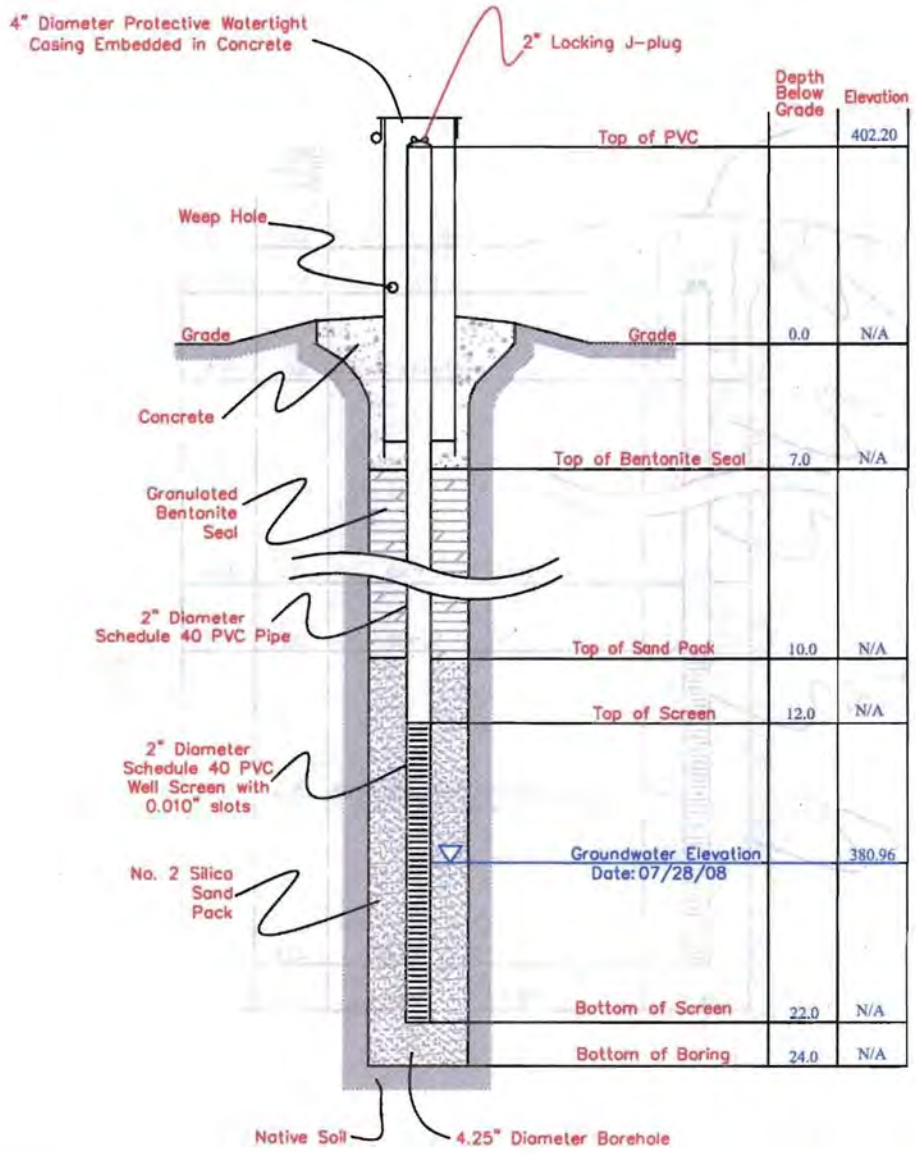
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect St. Herkimer, NY

Install Date: June 27, 2008

Monitoring Well No.: MW-8



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197/Fax 518-355-3256)

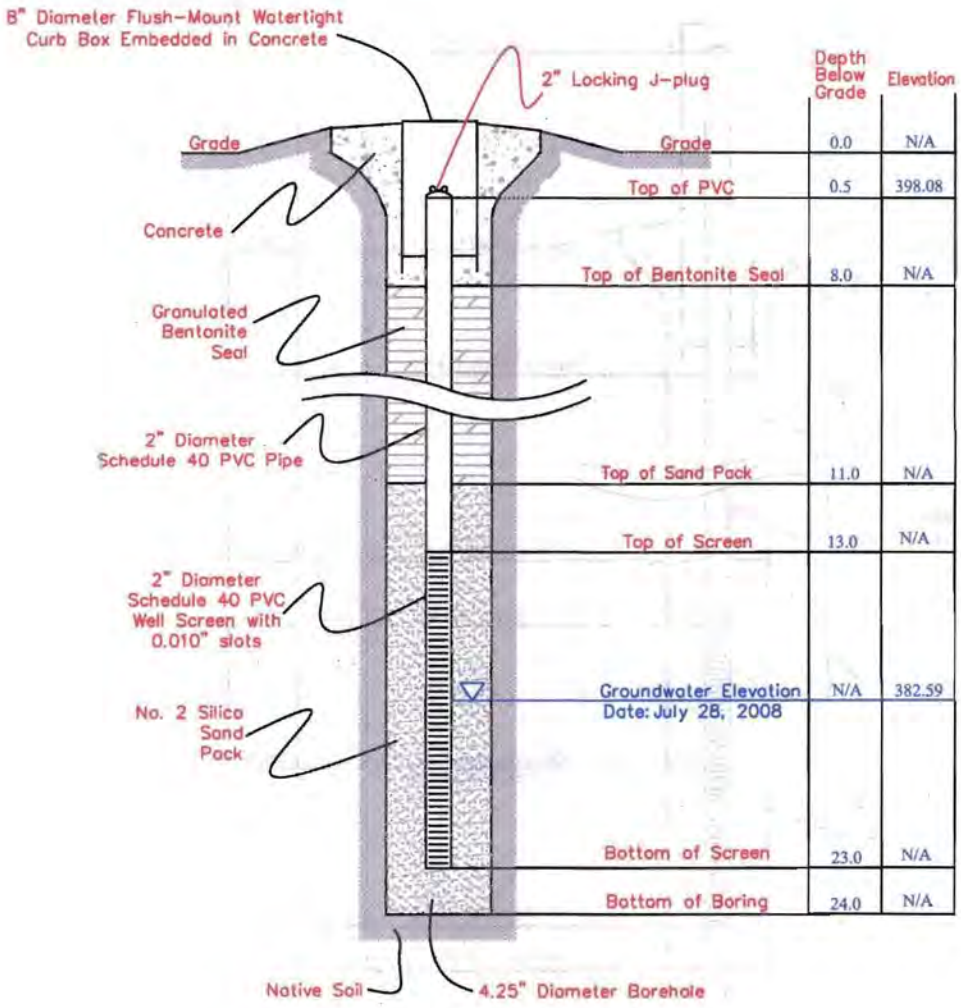
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect Rd. Herkimer, N.Y.

Install Date: June 30, 2008

Monitoring Well No.: MW-9



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197/Fax 518-355-3256)

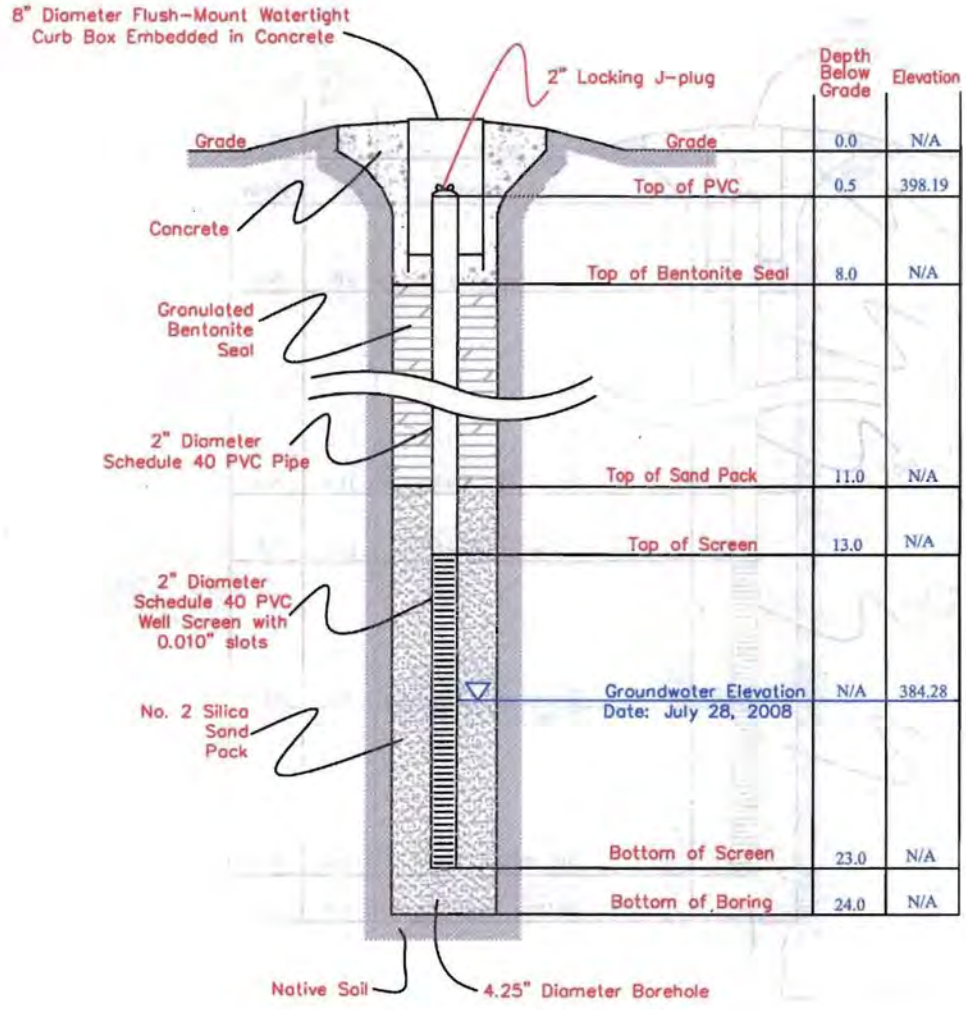
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect Rd. Herkimer, N.Y.

Install Date: June 30, 2008

Monitoring Well No.: MW-10



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (el 518-355-0197/Fax 518 355-3256)

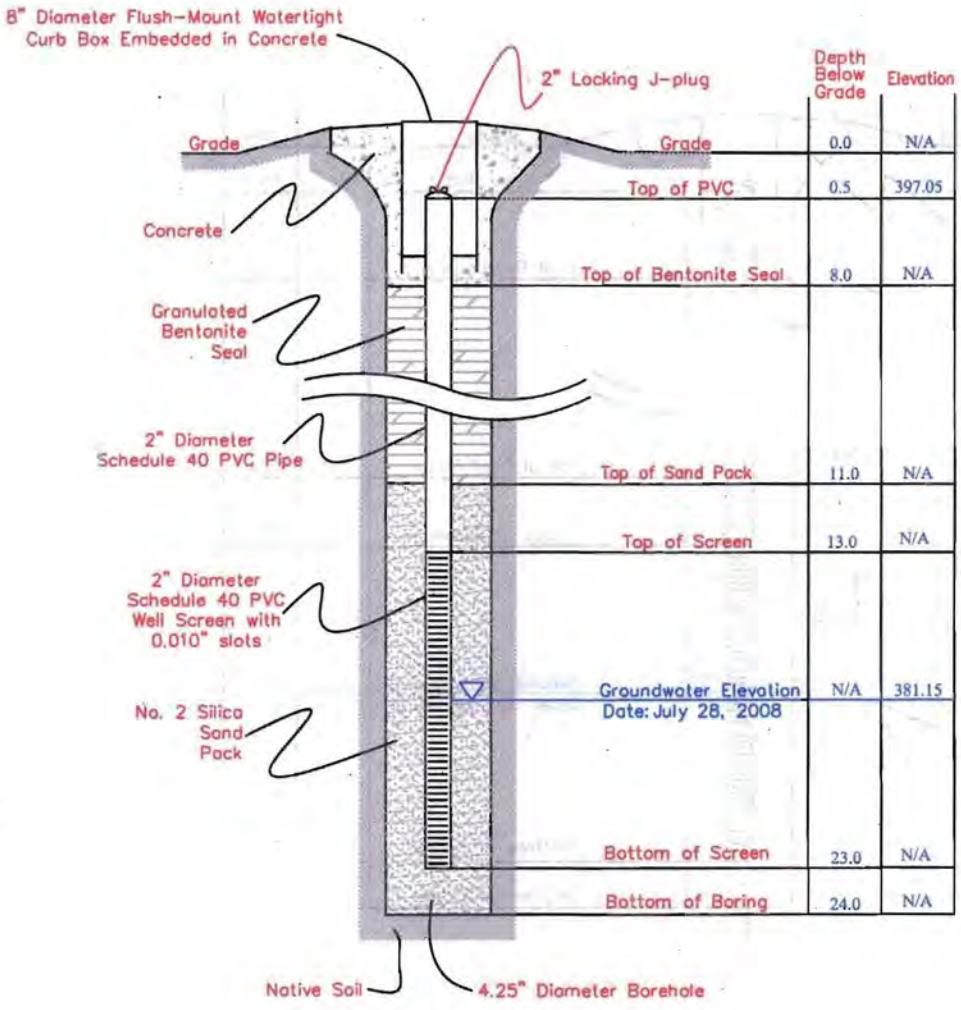
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect Rd. Herkimer, N.Y.

Install Date: July 1, 2008

Monitoring Well No.: MW-11



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotterdam Industrial Park Schenectady, NY 12306 (Tel 518-355-0197/Fax 518-355-3256)

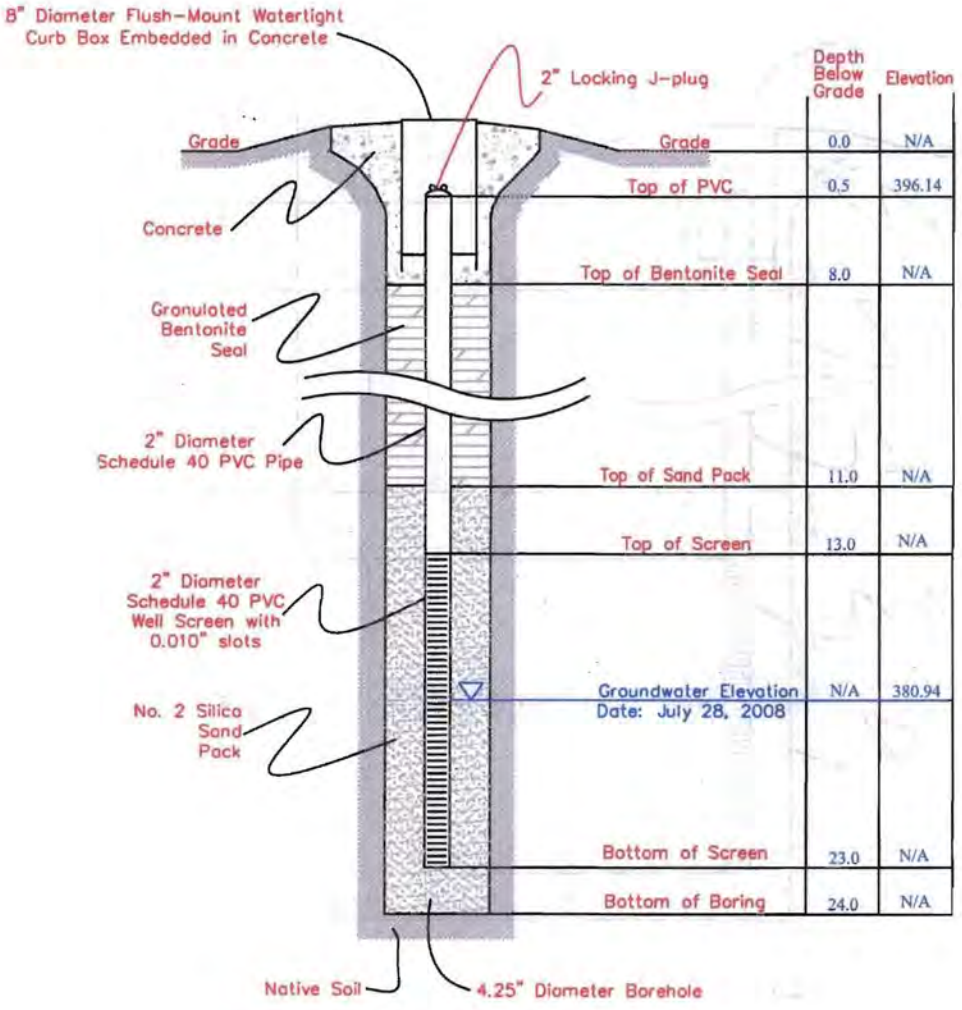
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect Rd. Herkimer, N.Y.

Install Date: July 16, 2008

Monitoring Well No.: MW-12



Drawing Not to Scale

OP-TECH Environmental Services, Inc.

150 Rotteroom Industrial Park Schenectady, NY 12306 (Tel: 518-355-0197/Fax 518-355-3256)

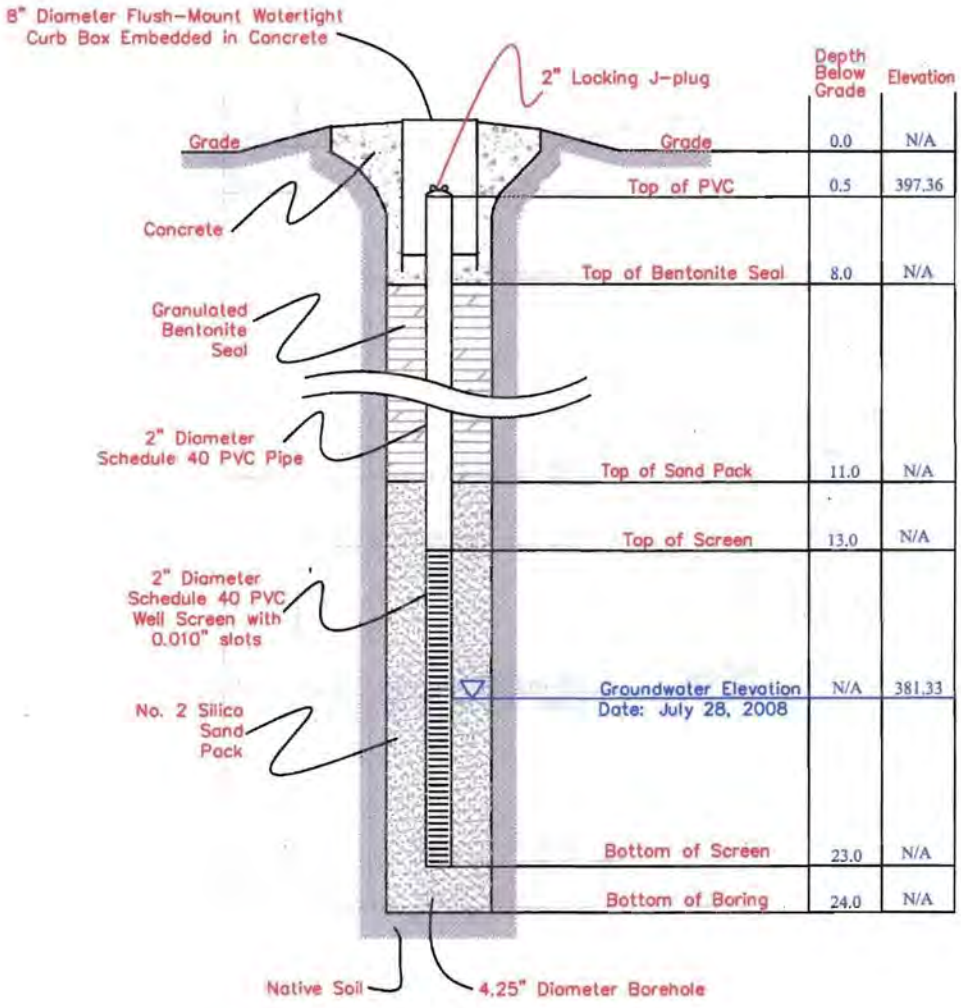
2-Inch Diameter Monitoring Well Detail

Client: NYS DEC Project No. ADCR-0012

Project: H.M. Quackenbush Site
220 N. Prospect Rd. Herkimer, N.Y.

Install Date: July 16, 2008

Monitoring Well No.: MW-13



Drawing Not to Scale

Appendix C

Groundwater Sampling Field Logs

OP-TECH Environmental Services, Inc.

Remedial Monitoring Well Field Sampling Log

Date: July 29 - 30, 2008

Location: H.M. Quackenbush Site | **Sampler (s): Mike O'Brien** | **OTES Job No. ADCR0012**

Well #	*Depth of Well (fbg)*	*Depth to Water from top of PVC (feet)*	*Color*	*Odor/ Sheen*	*Turbidity*	*Temp. oC*	*Dissolved O_2*	*ORP mV*	*pH*	*Calculated Water Removal (gal)*	*Actual Water Removal (gal)*
MW-1	Unknown	Dry	N/A	Y/Y Product	Dry	Dry	Dry	Dry	Dry	Dry	Dry
MW-2	Unknown	14.90	Br/Bk	Y/Y Product	4.96	14.9	1.11	-70	7.7	---	5
MW-3	Unknown	15.65	Bk	Y/Y Product	N/A	N/A	N/A	N/A	N/A	---	5
MW-4	Unknown	15.02	Br	N/N	Dry	Dry	Dry	Dry	Dry	---	0.25 (dry)
MW-5	Unknown	14.43	Br	N/N	5	14	8.02	95	7.8	---	5
MW-6	22.0	22.23	Br	N/N	4.89	14.4	8.89	87	7.4	1.3	4.5
MW-7	23.0	21.16	Br	N/N	5.5	15.2	6.3	96	7.6	1.55	4.5
MW-8	22.0	21.24	Br	N/N	5.11	12.9	3.54	-40	8	1.2	5
MW-9	23.0	15.49	Gr	N/N	4.35	13.3	4.82	86	7.7	2.4	7
MW-10	23.0	13.91	Gr	N/N	19	14.3	1.94	64	7.6	2.9	8
MW-11	23.0	15.90	Br	N/N	7.85	13.7	6.32	100	7.7	2.27	4.5
MW-12	23.0	15.20	Br	N/N	3.21	14.2	2.96	-88	8.1	2.5	4.5
MW-13	23.0	16.03	Br	N/N	24.5	14.4	4.94	-62	7.7	2.23	5
DEC-1	Unknown	16.29	Br	N/N	31.6	14.3	7.29	107	7.4	---	5
DEC-2	Unknown	15.66	Br	N/N	Dry	Dry	Dry	Dry	Dry	---	0.25 (dry)

Appendix D

Community Air Monitoring Plan (CAMP) Field Logs

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/19/2008
Wind Direction: SW to NE
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
10:42 Initial	0	0	0	0.001	0	0
11:56	0	0	0	0	0	0
12:40	0	0	0	0	0	0
1:55	0	0	0	0	0	0
2:41	0	0	0	0	0	0
3:30	0	0	0	0	0	0
4:35	0	0	0	0.001	0.001	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/20/2008
Wind Direction: SW to NE
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
8:30 Initial	0	0	0	0	0	0
9:34	0	0	0	0	0	0
10:40	0	0	0	0	0	0
11:25	0	0	0	0.003	0.002	0.002
12:30	0	0	0	0	0	0
1:30	0	0	0	0	0	0
2:28	0	0	0	0.001	0.001	0
3:41	0	0	0	0	0	0
4:27 Final	0	0	0	0	0	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/24/2008
Wind Direction: SW to NE
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
8:30 Initial	0	0	0	0.004	0	0
9:00	0	0	0	0.005	0.002	0.001
10:00	0	0	0	0.003	0	0
11:11	0	0	0	0.007	0.004	0.002
12:00	0	0	0	0.005	0.001	0
1:14	0	0	0	0.002	0.002	0.001
2:08	0	0	0	0.002	0	0
3:01	0	0	0	0.001	0	0
4:19	0	0	0	0.001	0	0
5:00 Final	0	0	0	0.001	0	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/25/2008
Wind Direction: SE to NW
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
7:58 Initial	0	0	0	0.007	0.004	0.002
8:45	0	0	0	0.001	0.001	0
9:55	0	0	0	0	0	0
11:04	0	0	0	0	0	0
12:00	0	0	0	0.003	0.001	0.001
1:13	0	0	0	0	0	0
2:03	0	0	0	0	0	0
3:00 Final	0	0	0	0	0	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/26/2008
Wind Direction: SE to NW
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
7:58 Initial	0	0	0	0.007	0.004	0.002
8:45	0	0	0	0.001	0.001	0
9:55	0	0	0	0	0	0
11:04	0	0	0	0	0	0
12:00	0	0	0	0.003	0.001	0.001
1:13	0	0	0	0	0	0
2:03	0	0	0	0	0	0
3:00 Final	0	0	0	0	0	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/27/2008
Wind Direction: SE to NW
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
10:00 Initial	0	0	0	0	0	0
10:50	0	0	0	0	0	0
11:59	0	0	0	0.003	0.003	0.003
1:00	0	0	0	0.003	0.003	0.003
2:17	0	0	0	0.001	0.001	0.001

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 6/30/2008
Wind Direction: SE to NW
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
08:25 Initial	0	0	0	0	0	0
9:14	0	0	0	0.001	0.001	0.001
10:19	0	0	0	0	0	0
11:25	0	0	0	0.004	0.002	0.002
12:45	0	0	0	0.002	0.002	0.002
1:36	0	0	0	0	0	0
2:40	0	0	0	0	0	0
3:59	0	0	0	0.001	0.001	0.001
4:41 Final	0	0	0	0	0	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 7/1/2008
Wind Direction: SW to NE
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
08:18 Initial	0	0	0	0	0	0
9:10	0	0	0	0.001	0.001	0.001
10:12	0	0	0	0.001	0	0
11:03	0	0	0	0.001	0.001	0
12:01	0	0	0	0	0	0
1:16	0	0	0	0	0	0
2:09	0	0	0	0	0	0
3:30	0	0	0	0	0	0
4:26 Final	0	0	0	0	0	0

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 7/2/2008
Wind Direction: SW to NE
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
08:21 Initial	0	0	0	0.004	0.002	0.002
9:40	0	0	0	0	0	0
10:34	0	0	0	0	0	0
11:13	0	0	0	0	0	0
12:45	0	0	0	0.002	0.002	0.002
1:32	0	0	0	0.001	0.001	0.001
2:21	0	0	0	0	0	0
3:20	0	0	0	0	0	0
4:36 Final	0	0	0	0.003	0.003	0.003

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 7/15/2008
Wind Direction: E to W
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
08:30 Initial	0	0	0	0	0	0
9:25	0	0	0	0	0	0
11:59	0	0	0	0.003	0.003	0.003
1:00	0	0	0	0.003	0.003	0.003
2:17	0	0	0	0.001	0.001	0.001

OP-TECH Environmental Services, Inc.

CAMP Field Sampling Log

Location: H.M. Quackenbush
220 N. Prospect St., Herkimer, N.Y.
Sampler: J. Naselli

Date: 7/16/2008
Wind Direction: E to W
OTES Job No.: ADCR-0012

Sample Time:	*VOC Monitoring (ppm)*			*Particulate Monitoring (mg/m3)*		
	up wind	work zone	down wind	up wind	work zone	down wind
08:10 Initial	0	0	0	0.001	0.001	0.001
9:08	0	0	0	0.001	0.001	0.001
10:14	0	0	0	0.001	0	0
11:32	0	0	0	0.005	0.001	0.001
12:52	0	0	0	0	0	0
1:16	0	0	0	0	0	0
2:03	0	0	0	0.002	0.001	0.001
3:00	0	0	0	0	0	0
4:02	0	0	0	0	0	0
5:14	0	0	0	0	0	0
5:46 Final	0	0	0	0	0	0

Appendix E

Investigation-Derived Waste Disposal Documentation

ATTENTION SHIPPERS! FREIGHT CHARGES ARE PREPAID ON THIS BILL OF LADING UNLESS MARKED COLLECT.

STRAIGHT BILL OF LADING

ORIGINAL — NOT NEGOTIABLE

Shipper No. ADCR-002

Carrier No. NYD986980753

Page 1 of 1

OP-TECH Environmental Services, Inc

(Name of carrier) (SCAC)

Date 8/14/08

On Collect on Delivery shipments, the letters "COD" must appear before consignee's name or as otherwise provided in Item 430, Sec.1.

TO:
Consignee OP-TECH Environmental Services, Inc

Street 370 State Route 34

City Waverly State NY Zip Code 14892

FROM:
Shipper NYS DEC Remedial Bureau C

Street 220 N. Prospect St.

City Herkimer State NY Zip Code

24 hr. Emergency Contact Tel. No. 800-225-6750

Route

Vehicle Number

No. of Units & Container Type	HM	BASIC DESCRIPTION Proper Shipping Name, Hazard Class or UN or NA Number, Packing Group / UN or NA Number, Proper Shipping Name, Hazard Class, Packing Group	TOTAL QUANTITY (Weight, Volume, Gallons, etc.)	WEIGHT (Subject to Correction)	RATE	CHARGES (For Carrier Use Only)
5 DM		Non DOT Non RCRA Regulated liquid (petroleum contaminated water)	275 G			#72
4 DM		Non DOT Non RCRA Regulated Naturals (petroleum contaminated absorbents + poly)	200 P			#35
3 DM		Non DOT Non RCRA Regulated Solid (petroleum contaminated soil)	900 P			#35

8/20/08

PLACARDS TENDERED: YES ☐ NO ☐

Note — (1) Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, as follows: "The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ per _____"
(2) Where the applicable tariff provisions specify a limitation of the carrier's liability absent a release or a value declaration by the shipper and the shipper does not release the carrier's liability or declare a value, the carrier's liability shall be limited to the extent provided by such provisions. See NMFC Item 172.
(3) Commodities requiring special or additional care or attention in handling or stowing must be so marked and packaged as to ensure safe transportation. See Section 2(a) of Item 360, Bills of Lading, Freight Bills and Statements of Charges and Section 1(a) of the Contract Terms and Conditions for a list of such articles.

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packed, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

_____ Signature

REMIT C.O.D. TO: ADDRESS

COD Amt: $

C.O.D. FEE: PREPAID ☐ COLLECT ☐ $

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

_____ (Signature of Consignor)

TOTAL CHARGES $

FREIGHT CHARGES
FREIGHT PREPAID except when box at right is checked ☐ Check box if charges are to be collect.

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of, said property over all or any portion of said route to destination and as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

SHIPPER NYS DEC

PER [signature] on behalf of

CARRIER OP-TECH Environmental Services, Inc.

PER [signature]

DATE 8/14/08

1

Permanent post-office address of shipper.

OP-TECH Environmental Services, Inc.

Certificate of Acceptance

This is to certify disposal of

Petroleum contaminated Absorbents

On behalf of

NYS DEC Remedial Site

Has been completed in accordance with OP-TECH Environmental Services, Inc. Part 360

Used Oil Transfer, Storage, and Processing Facility

08-20-08

Date

Signature

OP-TECH Environmental Services, Inc.

Certificate of Acceptance

This is to certify disposal of

Petroleum contaminated Soil

On behalf of

NYS DEC Remedial Site

Has been completed in accordance with OP-TECH Environmental Services, Inc. Part 360

Used Oil Transfer, Storage, and Processing Facility

08-20-08

Date

Signature

OP-TECH Environmental Services, Inc.

Acknowledgement of Disposal

This is to certify disposal of

Oily Water

On behalf of

NYS DEC Remedial Site

Has been completed in accordance with OP-TECH Environmental Services, Inc. Part 360
Used Oil Transfer, Storage, and Processing Facility

08-20-08
Date

Signature

Appendix F

Chain-of-Custodies, Laboratory Data and ASP Category B Deliverables (CD Only)

Appendix G

Data Usability Summary Report (DUSR)

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 62
Sampled June 2008

VOLATILE ORGANICS

SS-1	(U0806394-01)	SS-2	(U0806394-02)
SS-3	(U0806394-03)	SS-4	(U0806394-04)
SS-5	(U0806394-05)	SS-6	(U0806394-06)
SS-7	(U0806394-07)	SS-8	(U0806394-08)
SS-9	(U0806394-09)	DUPE	(U0806394-10)

DATA ASSESSMENT

A volatile organics data package containing analytical results for ten soil samples, a trip blank, and a holding blank was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260B, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-24, Rev 2, October 2006 , Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of a complete validation process. Reported data that has been qualified as an estimation has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results that are considered a usable estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19Apr09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained 10 soil samples, a trip blank, and a holding blank that were collected from the H.M. Quachenbush site by OPTECH Environmental on 17Jun08. The samples were delivered to the laboratory on 19Jun08. Between 17Jun08 and 19Jun08 they were refrigerated. The laboratory's Sample Receipt Check List indicates that the samples were received intact and properly chilled.

The analyses that were reported from this group of samples were completed between 21Jun08 and 30Jun08. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified. The qualification criteria is extended to ten times the concentration observed in blanks for common laboratory artifacts. These include acetone, methylene chloride and 2-butanone. Chloroform is also frequently present as a laboratory artifact.

Five method blanks, a trip blank, and a holding blank were analyzed with this group of samples. The chromatography of three of the method blanks contained peaks that appeared to represent carryover from previous samples. Similar artifacts were present in the chromatography of program samples. It is noted that the carryover was not reported as Tentatively Identified Compounds (TIC). It is also noted, that had these TIC's been reported, they would have been removed from sample reports by this reviewer.

Acetone was detected in one method blank, and was also present in SS-3RE and SS-4. Acetone should be interpreted as undetected in this pair of samples. A detection limit equaling the reported concentration should be assumed.

Although not present in blanks, methylene chloride was also detected in SS-2 and SS-4. These concentrations have been qualified as estimations because they may represent laboratory

artifacts. Methylene chloride has not been removed from sample reports because it was not present in the associated blanks.
It is noted that because the method blanks were prepared as aqueous samples, the purge vessel was not opened to the laboratory atmosphere when the blanks were loaded. The vessel was opened to load the soil samples. It is likely that the artifacts of acetone and methylene chloride were introduced when the affected samples were loaded.

MS TUNING
Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence and during every 12-hour period of instrument operation. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

CALIBRATION
Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

Initial instrument calibrations were performed on 19Jun08, 24Jun08 and 29Jun08. Standards of 3, 10, 20, 50, 100 and 200 µg/l were included. The 19Jun08 and 29Jun08 calibrations included a heated purge.

Although each targeted analyte produced the required levels of instrument response during these calibrations, vinyl chloride and bromomethane demonstrated poor linearity on 19Jun08. 1,1,1-Trichloroethane, cis-1,3-dichloropropene, trans-1,3-dichloropropene and bromoform also demonstrated poor linearity on 29Jun08. Although errors might be expected in measurements of these analytes, it may be assumed that they would be detected if present in samples. Because vinyl chloride, bromomethane, 1,1,1-trichloroethane, cis-1,3-dichloropropene, trans-1,3-dichloropropene and bromoform were not detected in this group of samples, data qualifications are not required.

Continuing calibration checks were performed on 21Jun08, 24Jun08, 26Jun08 and 30Jun08, prior to each twelve-hour period of instrument operation that included samples from this program. When compared to the initial calibrations, an unacceptable shift was observed in the response of bromomethane on 21Jun08. The bromomethane (BRMANE) results from associated samples have been qualified as estimations. SS-2, SS-4, SS-5, SS-7, SS-8 and the Field Duplicate were affected.

Unacceptable shifts were also observed in the response of cis-1,3-dichloropropene and trans-1,3-dichloropropene on 30Jun08. The cis-1,3-dichloropropene (c-13-DCPENE) and trans-1,3-dichloropropene (t-13-DCPENE) results from SS-3RE, SS-6RE and SS-9 have been qualified as estimations based on this performance.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Summary Sheets were properly prepared, the correct acceptance criteria applied. When compared to the ASP requirements, the surrogate additions to this group of samples produced acceptable recoveries during the initial analysis of each sample. Elevated recoveries of 1,2-dichloroethane-d4 were observed during the analysis of SS-3RE and DUPERE. These indications of positive bias had no affect on reported results. Targeted analytes were not detected in SS-3RE and the results from the initial analysis of the DUPE should be included in data tables.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, an unacceptable response was reported for the 1,4-dichlorobenzene-d4 additions to every sample except SS-9. A poor response was also observed for the chlorobenzene-d5 additions to SS-3, SS-5, SS-6 and the Field Duplicate. Each of these samples was reanalyzed, as required by ASP protocol. In most cases, the second analysis produced results that were similar to the first. The repeated analyses of SS-3 and SS-6, however, produced an acceptable chlorobenzene-d5 response. The results from SS-3RE and SS-6RE should be included in data tables, as should the results from the initial analysis of the remaining samples. The analytes associated with poor internal standard performance have been qualified as estimations in the affected samples.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate

spiked aliquot provides a measurement of precision.

SS-8 was selected for matrix spiking. The correct analytes were added to two aliquots of this sample. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Five aqueous spiked blanks were also analyzed with this group of samples. Each of these standards also produced acceptable recoveries. It is noted that the spiked blanks were not prepared as solid samples, and were therefore not handled in the same manner as program samples.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although a field split duplicate sample was included in this delivery group, it was not identified.

REPORTED ANALYTES

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations, and CRDL's have been adjusted to reflect sample size and moisture content. Tentatively Identified Compounds (TIC) were reported.

Although not targeted by this program, trichlorofluoromethane (CL3FMANE) was included in the laboratories calibratons. Trichlorofluoromethane was also detected in the Field Duplicate. However, because it was not targeted by this program, trichloromethane was not reported on Form 1. And, because it was included in the calibration, it was not reported as a TIC. Trichlorofluoromethane has been added to Form 1E of the Field Duplicate.

SUMMARY OF QUALIFIED DATA

H.K. Quackenbush Site

Sampled June 2008

		CALIBRATE c-13-DCPENE	CALIBRATE t-13-CPENE	CALIBRATE BRMANE	BLANK ACETONE	BLANK METH CL	INT STD IS3	INT STD IS4	CL3FMANE
SS-1	(U0806394-01)							ALL UJ	
SS-2	(U0806394-02)			6UJ		2J		ALL UJ	
SS-3	(U0806394-03)	7UJ	7UJ		20U			ALL UJ	
SS-4	(U0806394-04)			6UJ	10U	2J		ALL J/UJ	
SS-5	(U0806394-05)			6UJ			ALL UJ	ALL UJ	
SS-6	(U0806394-06)	6UJ	6UJ					ALL UJ	
SS-7	(U0806394-07)			6UJ				ALL UJ	
SS-8	(U0806394-08)			6UJ				ALL UJ	
SS-9	(U0806394-09)	6UJ	6UJ						
DUPE	(U0806394-10)			6UJ			ALL UJ	ALL UJ	1.6

IS3 = toluene, trans-1,3-dichloropropene, 1,1,2-trichloroethane, 2-hexanone, tetrachloroethene, dibromochloromethane, chlorobenzene, ethylbenzene, m,p-xylene, o-xylene

IS4 = Styrene, bromoform, 1,1,2,2-tetrachloroethane, n-propylbenzene, 1,3,5-trimethyl-benzene, t-butylbenzene, sec-butylbenzene, n-butylbenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trimethylbenzene

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 62
Sampled June 2008

SEMIVOLATILE ORGANICS

SS-1	(U0806394-01)	SS-2	(U0806394-02)
SS-3	(U0806394-03)	SS-4	(U0806394-04)
SS-5	(U0806394-05)	SS-6	(U0806394-06)
SS-7	(U0806394-07)	SS-8	(U0806394-08)
SS-9	(U0806394-09)	DUPE	(U0806394-10)

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for ten soil samples was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8270D, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev 3, October 2006, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of the complete validation process. Reported data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results that are considered an estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19 Apr 09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Extractions of aqueous samples must be completed within 5 days of receipt, soils within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained 10 soil samples that were collected from the H.M. Quachenbush site by OPTECH Environmental on 17Jun08. The samples were delivered to the laboratory on 19Jun08. Between 17Jun08 and 19Jun08 they were refrigerated. The laboratory's Sample Receipt Check List indicates that the samples were received intact and properly chilled.

This group of samples was extracted on 24Jun08. The analyses that were reported from this group of samples were completed on 08Jul08 and 09Jul08. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified. The qualification criteria is extended to ten times the concentration observed in blanks for common laboratory artifacts. These include phthalate esters.

One method blank was analyzed with this group of samples. Although this blank produced acceptable chromatography and was free of targeted analyte contamination, SBLK01 contained numerous Tentatively Identified Compounds (TIC). When similar artifacts were found in program samples they have been removed from sample reports.

Although not present in the method blank, bis(2-ethylhexyl)-phthalate was found in the blanks associated with other delivery groups from this program. Bis(2-ethylhexyl)phthalate was also detected in every program sample. The presence of this phthalate is assumed to represent a laboratory artifact. Bis(2-ethylhexyl)phthalate should be interpreted as undetected in this group of samples. A detection limit equaling the reported concentration or PQL, whichever is larger, should be assumed.

Other phthalates were also present in program samples. Dimethyl-phthalate and di-n-octylphthalate were present in SS-4, and di-n-butylphthalate and butylbenzylphthalate were found in SS-6. These

concentrations have been qualified estimations. They have not been removed from sample reports because their presence is not as pervasive as bis(2-ethylhexyl)-phthalate.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence and during every 12-hour period of instrument operation. An Instrument Performance Check Form is present for each DFTPP evaluation. The DFTPP tunes associated with this group of samples demonstrated an acceptable level of instrument performance.

It is noted that SS-8MSD was analyzed outside of the twelve-hour window defined by the preceding DFTPP. This error had no affect on the results reported from program samples. Data qualifications are not required.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration was performed in four analyte groups on 25Jun08, 01Jul08 and 08Jul08. During these calibrations every analyte targeted by this program produced the required levels of instrument response and demonstrated an acceptable degree of linearity.

Continuing calibration verifications were performed on 08Jul08 and 09Jul08, prior to the analysis of program samples. When compared to the initial calibration, an unacceptable shift was observed in the response of benzaldehyde on 08Jul08. The benzaldhyde results from the associated samples, SS-1, SS-2, SS-4, SS-5, SS-6 and SS-7 have been qualified as estimations.

Unacceptable shifts were observed in the response of Atrazine and benzaldehyde on 09Jul08. These analytes have been qualified as estimations in SS-3, SS-8, SS-9 and the Field Duplicate.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Summary Sheets were properly prepared, the correct acceptance criteria applied. With the exception of the additions to SS-1, SS-2 and SS-4 the surrogates spiked to this group of samples produced acceptable recoveries.

SS-1, SS-2 and SS-4 were diluted 1/10 prior to analysis due to the presence of a large petroleum fraction. The low surrogate recoveries from these samples warrant no concern.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of 2. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to the calculated criteria, an unacceptable response was observed for the phenanthrene-d10 additions to SS-5 and SS-7, and the perylene-d12 addition to SS-8. Repeated analyses of these samples produced no improvement. The analytes dependant upon the response of phenanthrene-d10 and perylene-d12 have been qualified as estimations in the affected samples. It is noted that the results from the initial analysis of SS-5, SS-7 and SS-8 should be included in data tables.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to extraction and analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

SS-8 was selected for matrix spiking. The required analytes were added to two portions of this sample. The recoveries reported for these spikes demonstrated acceptable levels of measurement accuracy and precision. It is noted that although both recoveries of pyrene were within the range of acceptance, they differed by 45% RPD. This performance, alone, does not warrant data qualifications.

A spiked blank (LCS) that was extracted and analyzed with this group of samples also produced acceptable recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measure-

ment of precision. Poor precision may be indicative of sample non-homogeneity, method defects or poor laboratory technique. Although field split duplicates were included in this group of samples, they were not identified.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument print-outs. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size and moisture content. The identifications of benz(a)anthracene in SS-3, SS-5, SS-7, SS-8, SS-9 and the Field Duplicate were was not conclusive, based on the mass spectra references included in the raw data. Benz(a)anthracene should be considered undetected in these samples.

A mass spectra was not provided to confirm the presence of benzaldehyde in SS-1, SS-2 and SS-4. These concentrations have been flagged as estimations due to this omission.

Tentatively Identified Compounds (TIC) were reported. When these identifications were not conclusive, based on the library searches included in the raw data, Form 1F has been corrected. Every program sample was affected.

SUMMARY OF QUALIFIED DATA

H.K. Quackenbush Site

Sampled June 2008

		BLANK PHTHALATE	BLANK TICs	BLANK PHTHAL1	BLANK PHTHAL2	CALIBRATE BENZALDEHYDE	CALIBRATE ATRAZINE	INT STD IS4	INT STD IS6
SS-1	(U0806394-01)	7100U				1400J			
SS-2	(U0806394-02)	2700U				570J			
SS-3	(U0806394-03)	1000U	REMOVE			230UJ	230UJ		
SS-4	(U0806394-04)	9100U	REMOVE	2900J/550J		550J			
SS-5	(U0806394-05)	270U	REMOVE			190UJ		ALL J/UJ	
SS-6	(U0806394-06)	2700U	REMOVE		490J/150J	430UJ			
SS-7	(U0806394-07)	210U	REMOVE			210UJ		ALL J/UJ	
SS-8	(U0806394-08)	370U	REMOVE			190UJ	190UJ		ALL J/UJ
SS-9	(U0806394-09)	410U	REMOVE			190UJ	190UJ		
DUPE	(U0806394-10)	190U	REMOVE			190UJ	190UJ		

PHTHAL1 = dimethylphthalate, di-n-octylphthalate

PHTHAL2 = di-n-butylphthalate, butylbenzylphthalate

IS4 = 4,6-dinitro-2-methylphenol, N-nitrosodiphenylamine, 4-bromophenylphenylether, hexachlorobenzene pentachlorophenol, phenanthreene, anthracene, di-n-butylphthalate, carbazole, fluoranthene

IS6 = di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene

SUMMARY OF QUALIFIED DATA

H.K. Quackenbush Site

Sampled June 2008

		SPECTRA ID TIC	SPECTRA ID BENZ(A)ANTHRACENE	MISSING SPECTRA BENZALDEHYDE
SS-1	(U0806394-01)	CORRECT		1400J
SS-2	(U0806394-02)	CORRECT		570J
SS-3	(U0806394-03)	CORRECT	230U	
SS-4	(U0806394-04)	CORRECT		550J
SS-5	(U0806394-05)	CORRECT	190U	
SS-6	(U0806394-06)	CORRECT		
SS-7	(U0806394-07)	CORRECT	210U	
SS-8	(U0806394-08)	CORRECT	190U	
SS-9	(U0806394-09)	CORRECT	190U	
DUPE	(U0806394-10)	CORRECT	190U	

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 62
Sampled June 2008

METALS

SS-1	(U0806394-01)	SS-2	(U0806394-02)
SS-3	(U0806394-03)	SS-4	(U0806394-04)
SS-5	(U0806394-05)	SS-6	(U0806394-06)
SS-7	(U0806394-07)	SS-8	(U0806394-08)
SS-9	(U0806394-09)	DUPE	(U0806394-10)

DATA ASSESSMENT

An inorganics data package containing analytical results for 10 soil samples was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methodologies, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2006, Validation of Metals for the Contract Laboratory Program) was used as a technical reference.

To prepare this Data Usability Summary Report, it was assumed that the laboratories calculations were correct. This assumption is based on the laboratory's ASP certifications. Beyond that assumption, the remainder of the validation process was unchanged.

Data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, and completely usable in its present form. Data providing a usable estimation of the conditions existing at the time of sampling has been flagged "J", "UJ" and "BJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19 Apr 09

James B. Baldwin

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt; cyanide 12 days. The remaining metals must be digested and analyzed within 180 days of receipt.

This sample delivery group contained 10 ~~concrete~~ surface soil samples that were collected from the H.M. Quachenbush site by OPTECH Environmental on 17Jun08. The samples were delivered to the laboratory on 19Jun08. Between 17Jun08 and 19Jun08 they were refrigerated. The laboratory's Sample Receipt Check List indicates that the samples were received intact and properly chilled.

This group of samples was digested on 01Jul08 and analyzed for ICP metals on 01Aug08 and 19Aug08. The ASP holding time limitation for this work was satisfied. Samples for cyanide analysis were distilled on 26Jun08 and analyzed on 27Jun08, within the ASP holding time limitation. The entire group of mercury samples was digested on 02Jul08 and analyzed on 03Jul08. Again, the ASP holding time limitation was satisfied.

The laboratory's internal custody record did not document sample transfers for cyanide determinations. Cyanide results from this group of samples have not been qualified because the technical quality of the results was not impacted. It should be noted, however, that analytical results cannot be considered legally defensible if the custody of the samples cannot be verified between the time of sampling and the time of analysis.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. These checks demonstrated bias in measurements of antimony (112%,89.7%), selenium (111%,111%), silver (112%,111%,112%), magnesium (111%), manganese (115%) and zinc (112%). Results that have been qualified due to this performance have been summarized below.

Antimony	SS1, SS2, SS3, SS4, SS5, SS6, SS7, SS8, SS9, DUPE
Selenium	SS1
Silver	SS1, SS2, SS3, SS4, SS5, SS6, SS7, SS8
Magnesium	SS1, SS2, SS3, SS4, SS5, SS6
Manganese	SS8
Zinc	SS1, SS2, SS3, SS4, SS5, SS6

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were analyzed as required. These checks produced acceptable recoveries of each required analyte.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. A preparation blank was digested and analyzed with each group of samples. Two CCB blanks contained artifacts of lead (6.2,3.2 mg/kg). The lead results from SS-5, SS-7, SS-8, SS-9 and DUPE have been qualified as estimations due to these indications of positive bias.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

Interference Check Standards, ICSA and ICSAB, were reported from the beginning and end of each ICP analysis sequence. These checks produced acceptable analyte recoveries.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

SS-8 was selected for matrix spiking. The recoveries reported for the additions to this sample included a low recovery of antimony (59%) and a high manganese result (130%). The antimony and manganese results from this group of samples have been qualified as estimations based on this performance.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

SS-8 was prepared as a laboratory split duplicate. This pair of samples demonstrated poor precision in measurements of silver. The silver results from this group of samples have been qualified as estimations based on this performance.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

One solid LCS standard was digested and analyzed with this group of samples. The additions to this standard produced unacceptable recoveries of chromium, iron, manganese and vanadium. The chromium, iron, manganese and vanadium results from this group of samples have been qualified as estimations based on this performance.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

The Field Duplicate was prepared as a serial dilution. Of the analytes present in the undiluted aliquot of this sample, at a

concentration exceeding 50 time IDL, the measurements of aluminum, iron, lead, and manganese differed from the diluted sample by more than 10%. The aluminum, iron, lead, and manganese results from this project have been qualified as estimations.

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

		CALIBRATE ANTIMONY	CALIBRATE SELENIUM	CALIBRATE SILVER	CALIBRATE MAGNESIUM	CALIBRATE MANGANESE	CALIBRATE ZINC	BLANKS LEAD
SS-1	(U0806394-01)	8.4BJ	4.8J	34.1J	2310J		11400J	
SS-2	(U0806394-02)	4.6BJ		38.4J	2950J		4600J	
SS-3	(U0806394-03)	9.8BJ		193J	3900J		16300J	
SS-4	(U0806394-04)	27.6J		100J	22400J		862J	
SS-5	(U0806394-05)	UJ		7.8J	8020J		132J	52.2J
SS-6	(U0806394-06)	UJ		5.3J	4740J		399J	
SS-7	(U0806394-07)	UJ		3.8J				51.1J
SS-8	(U0806394-08)	UJ		77.3J		410J		37.7J
SS-9	(U0806394-09)	UJ						37.1J
DUPE	(U0806394-10)	UJ						43.5J

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

		SPIKES ANTIMONY	SPIKES MANGANESE	DUPE SILVER	LCS CHROMIUM	LCS IRON	LCS MANGANESE	LCS VANADIUM	SER DIL ALUMINUM
SS-1	(U0806394-01)	8.4BJ	115J	34.1J	428J	7360J	115J	UJ	2470J
SS-2	(U0806394-02)	4.6BJ	115J	38.4J	663J	11200J	115J	UJ	2570J
SS-3	(U0806394-03)	9.8BJ	186J	193J	7110J	13900J	186J	UJ	2920J
SS-4	(U0806394-04)	27.6J	391J	100J	497J	42100J	391J	13.1J	5540J
SS-5	(U0806394-05)	UJ	391J	7.8J	84.7J	20500J	391J	16.0J	6230J
SS-6	(U0806394-06)	UJ	505J	5.3J	65.6J	15800J	505J	41.7J	6080J
SS-7	(U0806394-07)	UJ	502J	3.8J	36.3J	17600J	502J	17.8J	7080J
SS-8	(U0806394-08)	UJ	410J	77.3J	14.0J	17400J	410J	19.3J	9220J
SS-9	(U0806394-09)	UJ	476J	UJ	12.2J	17800J	476J	18.0J	8230J
DUPE	(U0806394-10)	UJ	406J	UJ	58.2J	21000J	403J	17.1J	6300J

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

		SER DIL IRON	SER DIL LEAD	SER DIL MANGANESE
SS-1	(U0806394-01)	7360J	1280J	115J
SS-2	(U0806394-02)	11200J	685J	115J
SS-3	(U0806394-03)	13900J	1050J	186J
SS-4	(U0806394-04)	42100J	316J	391J
SS-5	(U0806394-05)	20500J	52.2J	391J
SS-6	(U0806394-06)	15800J	314J	505J
SS-7	(U0806394-07)	17600J	51.1J	502J
SS-8	(U0806394-08)	17400J	37.7J	410J
SS-9	(U0806394-09)	17800J	37.1J	476J
DUPE	(U0806394-10)	21000J	43.5J	403J

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 62
Sampled June 2008

PESTICIDES/PCB

SS-1	(U0806394-01)	SS-2	(U0806394-02)
SS-3	(U0806394-03)	SS-4	(U0806394-04)
SS-5	(U0806394-05)	SS-6	(U0806394-06)
SS-7	(U0806394-07)	SS-8	(U0806394-08)
SS-9	(U0806394-09)	DUPE	(U0806394-10)

DATA ASSESSMENT

A Pesticide/PCB data package containing analytical results for ten soil samples was received from Upstate Laboratories, Inc., on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 8081 and 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-6,Rev 8, CLP Organics Data Review and Preliminary Review, Jan. 1992) was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of the complete validation process.

Each sample in this delivery group except SS-4 was diluted 1:25 prior to analysis. This resulted in the dilution of the surrogate additions to each of these samples, and the spikes to the MS/MSD pair, to levels that could not be detected. The results reported from each sample except SS-4 have been qualified as estimations because QC measurements demonstrating measurement accuracy and precision were completely absent.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, and completely usable in its present form. Results providing a usable estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase

confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19 Apr 09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt. Samples must remain chilled to 4°C between the time of collection and the time of analysis. Extractions of aqueous samples must be completed within 5 days of receipt, soils within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained 10 soil samples that were collected from the H.M. Quachenbush site by OPTECH Environmental on 17Jun08. The samples were delivered to the laboratory on 19Jun08. Between 17Jun08 and 19Jun08 they were refrigerated. The laboratory's Sample Receipt Check List indicates that the samples were received intact and properly chilled.

The entire group of samples was extracted on 24Jun08. Analyses were completed on 03Jul08 and 08Jul08. The ASP holding time limitations were satisfied.

It is noted that the Analytical Sequence Forms on pages 1582 and 1583 were dated incorrectly. The run times on these forms, however, did match the raw data.

It is also noted that the run times were incorrect on the Form 1's of SS-5, SS-6 and SS-7. The report forms have been corrected.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified.

One method blank was extracted with this group of samples and analyzed for Pesticides and PCB. This blank demonstrated acceptable chromatography and was free of targeted analyte contamination.

It is noted that the chromatography of this blank was over attenuated due to the presence of large early eluting peaks.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for Pest/PCB was performed on two chromatographic columns, on 19Jun08 and 20Jun08. This calibration included 5 levels of concentration for each single component pesticide, and five representative peaks Toxaphene, AR-1016 and AR-1260. The standards of each of these components demonstrated acceptable levels of response and linearity. The Performance Evaluation Mixture (PEM), Resolution Standards (RES) and each single component standard demonstrated acceptable levels of chromatographic resolution. Single point calibrations were performed for the remaining targeted Aroclors.

Additional calibrations that included five levels of concentration were included for AR-1221, AR-1242 and AR-1254. These were performed on 14Jul08, 21Jul08 and 14Jul08 respectively.

With the exception of SS-4, program samples were analyzed in an analysis sequence that ran on 03Jul08. SS-4 was analyzed on 08Jul08. Both sequences were bracketed by clean instrument blanks, PEM, single component pesticide standards (INDA-M, INDB-M) and standards of AR-1016 and AR-1260. Each of these checks produced chromatographic peaks that eluted at the correct retention times on both columns, that demonstrated an acceptable level of resolution, and produced acceptable levels of analyte recovery. It is noted that the Continuing Calibration Forms for the AR1016 and AR1260 standards terminating the 08Jul08 run indicated an incorrect analysis date and time. The reported recoveries, however, were obtained from the correct data files.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Two surrogates, tetrachloro-m-xylene and decachlorobiphenyl were added to every program sample. Each sample except SS-4, however, was also diluted 1:25. This reduced the surrogate additions to an undetectable level. Surrogate recoveries were not reported.

SS-4 was analyzed following a 1:5 dilution. This sample produced acceptable surrogate recoveries.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to extraction and analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

SS-8 was selected for matrix spiking. Duplicate spikes of six single component pesticides were added to this sample. Each spiked sample, however, was diluted 1:25 following these additions. The dilutions reduced the concentration of each spiked analyte to a non-detectable level. The spiked samples, therefore, provided to indication of measurement accuracy and precision.

A solid spiked blank was also analyzed with this group of samples. The spiked blank produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although field split duplicates were included in this group of samples, they were not identified.

DATA QUALIFICATIONS

H.M. Quackenbush Site

Sampled June 2008

		SURROGATES MS/MSD
SS-1	(U0806394-01)	ALL J/UJ
SS-2	(U0806394-02)	ALL J/UJ
SS-3	(U0806394-03)	ALL UJ
SS-4	(U0806394-04)	
SS-5	(U0806394-05)	ALL UJ
SS-6	(U0806394-06)	ALL UJ
SS-7	(U0806394-07)	ALL UJ
SS-8	(U0806394-08)	ALL UJ
SS-9	(U0806394-09)	ALL UJ
DUPE	(U0806394-10)	ALL UJ

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 63
Sampled June 2008

VOLATILE ORGANICS

SB-1E	(U0806436-005)	SB-2F	(U0806436-011)	SB-3A	(U0806436-012)
DUPE1	(U0806436-017)	SB-3F	(U0806436-018)	SB-4F	(U0806436-024)
SB-5D	(U0806436-028)	SB-6E	(U0806436-034)	SB-7E	(U0806436-039)
		SB-7(13.5-14FBG)	(U0806436-40)		
SB-8E	(U0806436-045)	DUPE2	(U0806436-046)	SB-9E	(U0806436-053)
SB-10D	(U0806436-057)	SB-10E	(U0806436-058)	SB-10F	(U0806436-059)
SB-11E	(U0806436-064)	SB-12D	(U0806436-070)	SB-13E	(U0806436-076)
SB-14E	(U0806436-082)	SB-15E	(U0806436-088)	SB-16E	(U0806436-096)
		SB-17(11.5FBG)	(U0806436-103)		
SB-17E	(U0806436-102)	SB-18E	(U0806436-108)	SB-19E	(U0806436-113)
SB-21E	(U0806436-119)	SB-22E	(U0806436-124)	SB-23F	(U0806436-131)
SB-24E	(U0806436-136)	SB-25E	(U0806436-141)	SB-26E	(U0806436-146)
SB-27E	(U0806436-151)	SB-28E	(U0806436-156)	SB-29D	(U0806436-161)
SB-30E	(U0806436-168)	DUPE8	(U0806436-173)	DUPE9	(U0806436-174)
SB-31D	(U0806436-180)				

DATA ASSESSMENT

A volatile organics data package containing analytical results for thirty-nine soil samples, three trip blanks, and four holding blanks was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260B, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-24, Rev 2, October 2006 , Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of a complete validation process. Reported data that has been qualified as an estimation due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results that are considered a usable estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19April 09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained thirty-nine soil samples, three trip blanks, and four holding blanks that were collected from the H.M. Quackenbush Site between 19Jun08 and 02Jul08. In most cases, the samples were delivered to the laboratory within two days of collection. Although the 20 samples collected on 20Jun08 were held in the field for three days, the custody record indicates that they were refrigerated between 20Jun08 and 21Jun08. Similarly, SB-31D was collected on 02Jul08 but not received by the laboratory until 07Jul08. This sample was refrigerated until the day it was delivered to the laboratory. The laboratory record indicates that, although cooler temperatures were not recorded, each group of samples was properly chilled to 4°C at the time of receipt. Although the five days that SB-31D was held prior to delivery is considered excessive, the total time between sampling and analysis was 9 days. Data qualifications are not required.

Several areas are noted where the custody records for this group of samples were inaccurate or incomplete. The field Chain of Custody indicates that samples SB-1E, SB-2F and SB-3A were collected on 20Jun08. The dates documenting transfers of these samples, however, indicate that the date of collection was 19Jun08. The laboratory's Sample Receipt Check List for samples received on 25Jun08 was not included in the date package. Data has not been qualified due to these lapses in documentation because the technical quality of the results was not impacted. However, it must be noted that analytical results cannot be considered legally defensible if the custody of the samples cannot be traced between the time of collection and the time of analysis.

Several samples were not analyzed within the ASP holding time limitations. The results reported from SB-22EDL, SB-28EDL, SB-30E and DUPE9DL have been qualified as estimations due to this error.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified. The qualification criteria is extended

to ten times the concentration observed in blanks for common laboratory artifacts. These include acetone, methylene chloride and 2-butanone. Chloroform is also frequently present as a laboratory artifact.

Sixteen method blanks, three trip blanks, and four holding blanks were analyzed with this group of samples. The trip and holding blanks were free of targeted analyte contamination. One method blank contained 6µg/l of acetone. Acetone was also present throughout this group of samples, as was methylene chloride. When present in samples, these concentrations have been qualified as estimations because they may represent laboratory artifacts. They have not been removed from sample reports because 22 of the associated blanks were free of acetone and methylene chloride. Acetone concentrations have been qualified in SB-7(13.5-14FBG), SB-7ERE, SB-5D, SB-6ERE, SB-7ERE, SB-8E, SB-9ERE, SB-10E, SB-12D, SB-14E, SB-16E, SB-17, SB-23F, DUPE9 and SB-31D. Methylene chloride has been qualified in SB-3A, SB-5D, SB-8E, SB-9E, SB-10F, SB-12D and SB-31D.

Several Tentatively Identified Compounds (TIC) were also present in blanks. These included hexane, 2,3,4-trimethylpentane, 2,3,3-trimethylpentane, 2,5-dimethylhexane, a doublet of early eluting peaks that were identified as carbon dioxide, and several peaks that represented carryover from previous samples. These TIC have been removed when reported on Form 1E. SB-4F, SB-6ERE, SB-9ERE, DUPE2, SB-5D, SB-7ERE, SB-8E, SB-10F, SB-16E, SB-18E and SB-19E were affected.

It is noted that because the method blanks were prepared as aqueous samples, the purge vessel was not opened to the laboratory atmosphere when the blanks were loaded. The vessel was opened to load the soil samples. It is likely that the artifacts of acetone and methylene chloride were introduced when the affected samples were loaded.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence and during every 12-hour period of instrument operation. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

Initial instrument calibrations were performed on 19Jun08, 24Jun08, 01Jul08 and 03Jul08. Standards of 3, 10, 20, 50, 100 and 200 ng were included. The 19Jun08 and 01Jul08 calibrations incorporated a heated purge. During each calibration most targeted analytes produced the required minimum levels of instrument response and demonstrated an acceptable degree of linearity. On 19Jun08 and 01Jul08 bromomethane standards produced the required levels of response but demonstrated poor linearity. Although errors might be expected in measurements of bromomethane, it may be assumed that this analyte would be detected if present in samples. Because bromomethane was not present in samples, data qualifications are not required.

Continuing calibration checks were performed on 23Jun08, 24Jul08, 25Jun08, 26Jun08, 01Jul08, 02Jul08, 03Jul08, 04Jul08, 07Jul08, 08Jul08, 10Jul08 and 11Jul08, prior to each twelve-hour period of instrument operation that included samples from this program. When compared to the initial calibration, the 23Jun08 check demonstrated unacceptable shifts in the response of vinyl chloride and bromomethane. The vinyl chloride and bromomethane results reported from SB-4F and DUPE2 have been qualified as estimations based on this performance.

Unacceptable shifts were also observed in the response of bromomethane and trans-1,3-dichloropropene during the calibration checks on 04Jul08 and 08Jul08. The bromomethane and trans-1,3-dichloropropene results from SB-11ERE, SB-17E, SB-17, SB-24E, SB-26E and SB-27E have been qualified as estimations due to this performance.

On 07Jul08, an unacceptable shift was observed in the response of vinyl chloride. The vinyl chloride results from SB-25E, SB-28E, SB-29D, DUPE8 and DUPE9 have been qualified as estimations.

The calibration verification on 11Jul08 produced unacceptable shifts in the response of vinyl chloride, bromomethane and trans-1,3-dichloropropene. The vinyl chloride, bromomethane and trans-1,3-dichloropropene results from SB-31D have been qualified as estimations based on this performance.

An unacceptable shift was observed in the response of 4-methyl-2-pentanone on 10Jun08. Trichloroethene also failed to produce the required level of response. These issues, however, had no effect on reported data, trichloroethene and 4-methyl-2-pentanone were not reported from DUPE9DL, the only associated sample.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Summary Sheets were properly prepared, the correct acceptance criteria applied. When compared to the ASP requirements, unacceptable surrogate recoveries were reported from 14 samples. Most of these samples produced one high recovery and two low results. Every affected sample produced at least one low surrogate. Each of these samples was reanalyzed, producing similar results. SB-22E, SB-28E and DUPE9 were reanalyzed as dilutions. Based on this performance, the initial results obtained from SB-4F, SB-6E, DUPE2, SB-5D, SB-7E, SB-8E, SB-9E, SB-10F, SB-11E, SB-12D, SB-22E, SB-28E, SB-29D and DUPE9 have been qualified as estimations.

Although the results obtained from the initial analysis of these samples should be included in data tables based on surrogate performance, the results from SB-6ERE, SB-7ERE, SB-9ERE and SB-11ERE should be substituted. This action is based on internal standard performance which and will be addressed later.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, unacceptable performance was observed in 18 samples. The results from thirteen of these samples have been previously qualified due to poor surrogate standard performance. An additional action at this time is not required.

It is noted that SB-6ERE, SB-7ERE, SB-9ERE and SB-11ERE demonstrated improved internal standard performance. The results from the repeated analyses should be included in data tables. These results remain qualified due to surrogate performance.

SB-15E, SB-22E and SB-31D produced a low response to 1,4-dichlorobenzene-d4. SB-17 and SB-17E produced a low response to all four internal standards. The results reported from SB-17 and SB-17E have been qualified as estimations. Styrene, bromoform, 1,1,2,2-tetrachloroethane, n-propylbenzene, 1,3,5-trimethylbenzene, t-butylbenzene, sec-butylbenzene, n-butylbenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene results have been qualified as estimations from SB-15E, SB-22E and SB-31D.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate

spiked aliquot provides a measurement of precision.

SB-5D and SB-10F were selected for matrix spiking. The correct analytes were added to two portions of each of these samples. The recoveries reported for these additions included unacceptably high results for 16 of the 20 spikes. The positive results reported from this group of samples have been qualified as estimations based on this indication of bias. SB-2F, SB-3A, SB-5D, SB-6E, SB-7E, SB-7, SB-8E, SB-9E, SB-10E, SB-10F, SB-12D, SB-14E, SB-15E, SB-16E, SB-17, SB-18E, SB-19E, SB-21E, SB-22D, SB-23F, SB-24E, SB-26E, SB-27E, SB-28E, SB-29D, SB-30E, DUPE8, DUPE9 and SB-31D were affected.

Sixteen spiked blanks were also analyzed with this group of samples. It is noted that all of these spikes were to an aqueous matrix. The recoveries reported from these spikes included a single high trichloroethene result. The remaining additions were recovered successfully. The single high trichloroethene result, alone, does not require data qualifications.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although field split duplicate samples were included in this delivery group, they were not identified.

REPORTED ANALYTES

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations, and CRDL's have been adjusted to reflect sample size and moisture content.

It is noted that the identifications of several targeted analytes that were reported as present could not be confirmed based on the mass spectra references included in the raw data. These analytes should be interpreted as undetected in the affected samples. The samples and the affected analytes are tabulated below.

SB-22E	sec-butylbenzene, t-butylbenzene, xylene
SB-28E	benzene, toluene, 1,3,5-trimethylbenzene, ethylbenzene
SB-29D	ethylbenzene, xylene
SB-30E	sec-butylbenzene
DUPE8	n-butylbenzene, t-butylbenzene, xylene
DUPE9	toluene, chlorobenzene, xylene
SB-31D	xylene

Tentatively Identified Compounds (TIC) were reported. When necessary, based on the mass spectra library searches included in the raw data, the list of TIC's has been edited to reflect more appropriate identifications. SB-3F, SB-7, SB-9E, SB-10E, SB-17, SB-22E, SB-28E, SB-29D, SB-30E, DUPE9 and SB-31D were affected.

Although not targeted by this program, trichlorofluoromethane (CL3FMANE) was included in the laboratory's calibratons. Trichlorofluoromethane was also detected in SB-5D, SB-8E, SB-9E, SB-12D and DUPE9. However, because it was not targeted by this program, trichloromethane was not reported on Form 1. And, because it was included in the calibration, it was not reported as a TIC. Trichlorofluoromethane has been added to each affected Form 1E.

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	CALIBRATE CAL1	CALIBRATE CAL2	CALIBRATE CAL3	HOLD TIME	BLANK ACETONE	BLANK METH CL	BLANKS TIC
SB-1E (U0806436-005)							REMOVE
SB-2F (U0806436-011)							
SB-3A (U0806436-012)						1J	
DUPE1 (U0806436-017)							
SB-3F (U0806436-018)							
SB-4F (U0806436-024)	ALL UJ						REMOVE
SB-5D (U0806436-028)					260J	240J	REMOVE
SB-6E (U0806436-034)					110J		
SB-7E (U0806436-039)					140J		REMOVE
SB-7 (U0806436-040)					27J		
SB-8E (U0806436-045)					150J	100J	REMOVE
DUPE2 (U0806436-046)	ALL UJ						REMOVE
SB-9E (U0806436-053)					170J	64J	REMOVE
SB-10D(U0806436-057)							
SB-10E(U0806436-058)					27J		
SB-10F(U0806436-059)						49J	REMOVE
SB-11E(U0806436-064)		ALL UJ					
SB-12D(U0806436-070)					160J	62J	
SB-13E(U0806436-076)							
SB-14E(U0806436-082)					8J		

CAL1 = vinyl chloride, bromomethane
CAL2 = bromomethane, trans-1,3-dichloropropene
CAL3 = vinyl chloride

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	CALIBRATE CAL1	CALIBRATE CAL2	CALIBRATE CAL3	HOLD TIME	BLANK ACETONE	BLANK METH CL	BLANKS TIC
SB-15E(U0806436-088)							
SB-16E(U0806436-096)					16J		REMOVE
SB-17 (U0806436-103)		ALL UJ			160J		
SB-17E(U0806436-102)		ALL UJ					
SB-18E(U0806436-108)							REMOVE
SB-19E(U0806436-113)							REMOVE
SB-21E(U0806436-119)							
SB-22E(U0806436-124)							
SG-22EDL				ALL J/UJ			
SB-23F(U0806436-131)					11J		
SB-24E(U0806436-136)		ALL UJ					
SB-25E(U0806436-141)			28UJ				
SB-26E(U0806436-146)		ALL UJ					
SB-27E(U0806436-151)		ALL UJ					
SB-28E(U0806436-156)			27UJ				
SB-28EDL				ALL J/UJ			
SB-29D(U0806436-161)			28UJ				
SB-30E(U0806436-168)				ALL J/UJ			
DUPE8 (U0806436-173)			6UJ				
DUPE9 (U0806436-174)			29UJ		140J		
DUPE9DL				ALL J/UJ			
SB-31D(U0806436-180)		ALL UJ	54UJ		130J	100J	

CAL1 = vinyl chloride, bromomethane
CAL2 = bromomethane, trans-1,3-dichloropropene
CAL3 = vinyl chloride

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	SURROGATES	INT STDS	INT STD IS4	SPIKES POSITIVES	CL3FMANE	SPECTRA ID TIC	SPECTRA ID XYLENE
SB-1E (U0806436-005)							
SB-2F (U0806436-011)				ALL J			
SB-3A (U0806436-012)				ALL J			
DUPE1 (U0806436-017)							
SB-3F (U0806436-018)						CORRECT	
SB-4F (U0806436-024)	ALL UJ						
SB-5D (U0806436-028)	ALL J/UJ			ALL J	7.5		
SB-6E (U0806436-034)	ALL J/UJ			ALL J			
SB-7E (U0806436-039)	ALL J/UJ			ALL J			
SB-7 (U0806436-040)				ALL J		CORRECT	
SB-8E (U0806436-045)	ALL J/UJ			ALL J	2.2		
DUPE2 (U0806436-046)	ALL UJ						
SB-9E (U0806436-053)	ALL J/UJ			ALL J	1.8	CORRECT	
SB-10D(U0806436-057)							
SB-10E(U0806436-058)				ALL J		CORRECT	
SB-10F(U0806436-059)	ALL J/UJ			ALL J			
SB-11E(U0806436-064)	ALL UJ						
SB-12D(U0806436-070)	ALL J/UJ			ALL J	3.1		
SB-13E(U0806436-076)							
SB-14E(U0806436-082)				ALL J			

IS = Styrene, bromoform, 1,1,2,2-tetrachloroethane, n-propylbenzene, 1,3,5-trimethyl-benzene, t-butylbenzene, sec-butylbenzene, n-butylbenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	SURROGATES	INT STDS	INT STD IS4	SPIKES POSITIVES	CL3FMANE	SPECTRA ID TIC	SPECTRA ID XYLENE
SB-15E(U0806436-088)			ALL UJ	ALL J			
SB-16E(U0806436-096)				ALL J			
SB-17 (U0806436-103)		ALL J/UJ		ALL J		CORRECT	
SB-17E(U0806436-102)		ALL UJ					
SB-18E(U0806436-108)				ALL J			
SB-19E(U0806436-113)				ALL J			
SB-21E(U0806436-119)				ALL J			
SB-22E(U0806436-124)	ALL J/UJ		ALL J/UJ	ALL J		CORRECT	27U
SB-23F(U0806436-131)				ALL J			
SB-24E(U0806436-136)				ALL J			
SB-25E(U0806436-141)							
SB-26E(U0806436-146)				ALL J			
SB-27E(U0806436-151)				ALL J			
SB-28E(U0806436-156)	ALL J/UJ			ALL J		CORRECT	
SB-29D(U0806436-161)	ALL J/UJ			ALL J		CORRECT	28U
SB-30E(U0806436-168)				ALL J		CORRECT	
DUPE8 (U0806436-173)				ALL J			6U
DUPE9 (U0806436-174)	ALL J/UJ			ALL J	1.6	CORRECT	29U
SB-31D(U0806436-180)			ALL J/UJ	ALL J		CORRECT	54U

IS = Styrene, bromoform, 1,1,2,2-tetrachloroethane, n-propylbenzene, 1,3,5-trimethyl-benzene, t-butylbenzene, sec-butylbenzene, n-butylbenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

SB-1E (U0806436-005)
SB-2F (U0806436-011)
SB-3A (U0806436-012)
DUPE1 (U0806436-017)
SB-3F (U0806436-018)
SB-4F (U0806436-024)
SB-5D (U0806436-028)
SB-6E (U0806436-034)
SB-7E (U0806436-039)
SB-7 (U0806436-040)
SB-8E (U0806436-045)
DUPE2 (U0806436-046)
SB-9E (U0806436-053)
SB-10D(U0806436-057)
SB-10E(U0806436-058)
SB-10F(U0806436-059)
SB-11E(U0806436-064)
SB-12D(U0806436-070)
SB-13E(U0806436-076)
SB-14E(U0806436-082)

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	SPECTRA ID BENZENE	SPECTRA ID TOLUENE	SPECTRA ID ETHYLBENZ	SPECTRA ID T-BUTYLBENZ	SPECTRA ID SEC-BUTYLBENZ	SPECTRA ID N-BUTYLBENZ
SB-15E(U0806436-088)						
SB-16E(U0806436-096)						
SB-17 (U0806436-103)						
SB-17E(U0806436-102)						
SB-18E(U0806436-108)						
SB-19E(U0806436-113)						
SB-21E(U0806436-119)						
SB-22E(U0806436-124)				27U	27U	
SB-23F(U0806436-131)						
SB-24E(U0806436-136)						
SB-25E(U0806436-141)						
SB-26E(U0806436-146)						
SB-27E(U0806436-151)						
SB-28E(U0806436-156)	27U	27U	27U			
SB-29D(U0806436-161)			28U			
SB-30E(U0806436-168)					540U	
DUPE8 (U0806436-173)				6U		6U
DUPE9 (U0806436-174)		29U				
SB-31D(U0806436-180)						

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

SB-1E (U0806436-005)
SB-2F (U0806436-011)
SB-3A (U0806436-012)
DUPE1 (U0806436-017)
SB-3F (U0806436-018)
SB-4F (U0806436-024)
SB-5D (U0806436-028)
SB-6E (U0806436-034)
SB-7E (U0806436-039)
SB-7 (U0806436-040)
SB-8E (U0806436-045)
DUPE2 (U0806436-046)
SB-9E (U0806436-053)
SB-10D(U0806436-057)
SB-10E(U0806436-058)
SB-10F(U0806436-059)
SB-11E(U0806436-064)
SB-12D(U0806436-070)
SB-13E(U0806436-076)
SB-14E(U0806436-082)

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	SPERCTRA ID 135-TRIMETHYLBENZENE	SPECTRA ID CHLOREOBENZENE
SB-15E(U0806436-088)		
SB-16E(U0806436-096)		
SB-17 (U0806436-103)		
SB-17E(U0806436-102)		
SB-18E(U0806436-108)		
SB-19E(U0806436-113)		
SB-21E(U0806436-119)		
SB-22E(U0806436-124)		
SB-23F(U0806436-131)		
SB-24E(U0806436-136)		
SB-25E(U0806436-141)		
SB-26E(U0806436-146)		
SB-27E(U0806436-151)		
SB-28E(U0806436-156)	27U	
SB-29D(U0806436-161)		
SB-30E(U0806436-168)		
DUPE8 (U0806436-173)		
DUPE9 (U0806436-174)		29U
SB-31D(U0806436-180)		

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 63
Sampled June 2008

SEMIVOLATILE ORGANICS

SB-1E (U0806436-005)	SB-2F (U0806436-011)	SB-3A (U0806436-012)
DUPE1 (U0806436-017)	SB-3F (U0806436-018)	SB-4F (U0806436-024)
SB-5D (U0806436-028)	SB-6E (U0806436-034)	SB-7E (U0806436-039)
SB-9E (U0806436-053)	SB-10D (U0806436-057)	SB-10F (U0806436-059)
SB-11E (U0806436-064)	SB-12D (U0806436-070)	SB-13E (U0806436-076)
SB-14E (U0806436-082)	SB-15E (U0806436-088)	SB-16E (U0806436-096)
SB-17E (U0806436-102)	SB-18E (U0806436-108)	SB-19E (U0806436-113)
SB-21E (U0806436-119)	SB-22E (U0806436-124)	SB-23F (U0806436-131)
SB-24E (U0806436-136)	SB-25E (U0806436-141)	SB-26E (U0806436-146)
SB-27E (U0806436-151)	SB-28E (U0806436-156)	SB-29D (U0806436-161)
SB-30E (U0806436-168)	SB-31D (U0806436-180)	

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for thirty-two soil samples was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8270D, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev 3, October 2006, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of the complete validation process. Reported data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results that are considered an estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19 April 09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Extractions of aqueous samples must be completed within 5 days of receipt, soils within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained 32 soil samples that were collected from the H.M. Quackenbush Site between 19Jun08 and 02Jul08. In most cases, the samples were delivered to the laboratory within two days of collection. Although the 19 samples collected on 20Jun08 were held in the field for three days, the custody record indicates that they were refrigerated between 20Jun08 and 21Jun08. Similarly, SB-31D was collected on 02Jul08 but not received by the laboratory until 07Jul08. This sample was refrigerated until the day it was delivered to the laboratory. The laboratory record indicates that, although cooler temperatures were not recorded, each group of samples was properly chilled to 4°C at the time of receipt. Although the five days that SB-31D was held prior to delivery is considered excessive, the total time between sampling and extraction was 10 days. Data qualifications are not required.

Several areas are noted where the custody records for this group of samples were inaccurate or incomplete. The field Chain of Custody indicates that samples SB-1E, SB-2F and SB-3A were collected on 20Jun08. The dates documenting transfers of these samples, however, indicate that the date of collection was 19Jun08. The laboratory's Sample Receipt Check List for samples received on 25Jun08 was not included in the data package, and the laboratory's internal custody chains were incomplete. Data has not been qualified due to these lapses in documentation because the technical quality of the results was not impacted. However, it must be noted that analytical results cannot be considered legally defensible if the custody of the samples cannot be traced between the time of collection and the time of analysis.

Numerous samples were held, in the laboratory, beyond the ASP holding time limitations. The affected samples were held for 60 to 63 days between extraction and analysis. This exceeded the allowed holding time by 20 to 23 days. The results reported from SB-7E, SB-8E, DUP2, SB-9E, SB-10D, SB-10F, SB-11E, SB-12D, SB-13E, SB-14E, SB-15E, SB-16E, SB-17E, SB-18E, SB-19E, SB-21E, SB-22E, SB-23F, SB-24E, SB-25E, SB-26E, SB-27E, SB-28E, SB-29D, SB-30E and SB-31D have been qualified as estimations due to this error.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks

are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified. The qualification criteria is extended to ten times the concentration observed in blanks for common laboratory artifacts. These include phthalate esters.

Three method blanks were analyzed with this group of samples. Although these blanks produced acceptable chromatography, SBLK01 contained a trace of bis(2-ethylhexyl)phthalate. A similar artifact was observed throughout this group of samples. When present, the phthalate artifact should be interpreted as undetected. Each method blank also contained several Tentatively Identified Compounds. These have also been removed from the affected sample reports.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence and during every 12-hour period of instrument operation. An Instrument Performance Check Form is present for each DFTPP evaluation. The DFTPP tunes associated with this group of samples included a low response to z/m=442 on 13Aug08 and a high response for z/m=275 on 27Aug08. There was no evidence that these issues had any effect on reported data. The associated samples have been left unqualified.

The analyses of SB-21E on 27Aug08 and SB-21ERE on 29Aug08 were started beyond the 12-hour window defined by the preceding DFTPP check. The results from these samples have been qualified as estimations.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

Due to the size of the analyte list, the initial instrument calibration was performed in four analyte groups. The calibration for most of the Target Compound List (TCL) analytes was performed on 15Aug08. The calibration for 3,3'-dichlorobenzidine was performed on 25Jun08. The calibration for Atrazine, benzaldehyde, biphenyl and Caprolactam was completed on 01Jul08. During the 15Aug08 calibration 2-methylphenol produced an unacceptably low response. The 2-methylphenol results from this group of samples have been qualified as estimations based on this performance.

Continuing calibration verifications were performed on 09Jul08,

26Aug08, 27Aug08, 28Aug08 and 29Aug08, prior to the analysis of program samples. When compared to the initial calibration, unacceptable shifts were observed in the response of fluoranthene, Atrazine and benzaldehyde on 09Jul08. The fluoranthene, Atrazine and benzaldehyde results from SB-1E, SB-2F, SB-3A, DUPE1, SB-3F, SB-4F, SB-5D and SB-6E have been qualified as estimations due to poor calibration performance.

During the check on 26Aug08, unacceptable shifts were observed in the response of bis(2-chloroethoxy)methane, Atrazine, benzaldehyde and Caprolactam. These analytes have been qualified as estimations in DUPE2 and SB-10F.

Unacceptable shifts were observed in the response of 3-nitroanaline, 2,4-dinitrophenol, 2,4-dinitrotoluene, 4-nitrophenol, 4-nitroanaline, carbazole, fluoranthene, pyrene, di-n-octylphthalate, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene, Atrazine, benzaldehyde and biphenyl on 27Aug08. 2-Methylphenol also failed to produce the required minimum level of response on 27Aug08. The 2-methylphenol, 3-nitroanaline, 2,4-dinitrophenol, 2,4-dinitro toluene, 4-nitrophenol, 4-nitroanaline, carbazole, fluoranthene, pyrene, di-n-octylphthalate, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)-perylene, Atrazine, benzaldehyde and biphenyl results from SB-11E, SB-12D, and SB-16E have been qualified as estimations based on this performance.

On 28Aug08, bis(2-chloroethoxy)methane failed to produce the required minimum level of response. Unacceptable shifts were also observed in the response of 2,4-dinitrotoluene, 4-nitrophenol, 4-nitroanaline, Carbazole, fluoranthene, pyrene, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, benzaldehyde and Caprolactam. These analytes have been qualified as estimations in associated samples. SB-22E, SB-23F, SB-24E, SB-25E, SB-26E, SB-27E, SB-28E, SB-29D, SB-30E and SB-31D were affected.

Unacceptable shifts were observed in the response of 2,4-dinitrotoluene, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, atrazine, benzaldehyde and caprolactam on 29Aug08. The 2,4-dinitrotoluene, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, atrazine, benzaldehyde and Caprolactam results from SB-7ERE, SB-8ERE, SB-9ERE, SB-10DRE, SB-13ERE, SB-14ERE, SB-15ERE, SB-17RE, SB-18ERE, SB-19ERE and SB-21ERE have been qualified as estimations based on this performance.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Summary Sheets were properly prepared, the correct acceptance criteria applied. Of the surrogates added to this group of samples, the additions to SB-3A produced unacceptably high recoveries. The positive analyte results reported from this sample have been qualified as estimations due to this indication of bias.

A high recovery of terphenyl-d14 was also reported from SB-5D. This indication of positive bias warrants no concern. Targeted analytes were not detected in this sample.

The surrogate additions to SB-22E, SB-28E, SB-29D, SB-30E and SB-31D were completely unrecovered. Each of these samples, however, was diluted 1:100 prior to analysis. This reduced the surrogates to an undetectable concentration. Data qualifications are not required.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of 2. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to the calculated criteria, several internal standard additions demonstrated unacceptable performance. The samples and internal standards exhibiting unacceptable performance are tabulated below.

SB-1E	IS1	IS2	IS3	IS4		
SB-2F	IS1	IS2	IS3	IS4		
SB-3A					IS5	IS6
DUPE1	IS1	IS2	IS3	IS4		
SB-3F		IS2	IS3	IS4		
SB-4F	IS1	IS2	IS3	IS4		
SB-5D				IS4		
SB-6E	IS1	IS2	IS3	IS4		
DUPE2					IS5	
SB-10F					IS5	IS6
SB-16E	IS1	IS2	IS3			IS6
SB-27E		IS2	IS3			

The analytes associated with each of these internal standards have been qualified as estimations in the affected samples.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to extraction and analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a

measurement of precision.

SB-5D and SB-10F were selected for matrix spiking. The required analytes were added to two portions of each of these samples. The recoveries reported for these spikes demonstrated acceptable levels of measurement accuracy and precision.

Three spiked blanks (LCS) were also extracted and analyzed with this group of samples. Although these standards produced high recoveries 4-nitrophenol and 2,4-dinitrotoluene, this performance, alone, does not require data qualifications.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects or poor laboratory technique.

Although field split duplicates were included in this group of samples, they were not identified.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size and moisture content.

It is noted that mass spectra references were not provided to verify the identifications of benzaldehyde in SB-3A, SB-5D and SB-6E. Benzaldehyde should be interpreted as undetected in these samples.

The identification of butylbenzylphthalate in SB-3A could not be verified, based on the mass spectra reference included in the raw data. The phthalate should be considered undetected in this sample.

Tentatively Identified Compounds (TIC) were reported. When these identifications were not conclusive, based on the library searches included in the raw data, Form 1F has been corrected. Every sample except SB-27E was affected.

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	HOLD TIME	BLANKS PHTHALATE	BLANK TIC	CALIBRATE 2-METHYLPHENOL	CALIBRATE CAL1	CALIBRATE CAL2	CALIBRATE CAL3	CALIBRATE CAL4
SB-1E (U0806436-005)		180U	REJECT	UJ	ALL UJ			
SB-2F (U0806436-011)		190U	REJECT	UJ	ALL UJ			
SB-3A (U0806436-012)		1200U		UJ	ALL J/UJ			
DUPE1 (U0806436-017)		200U	REJECT	UJ	ALL UJ			
SB-3F (U0806436-018)		190U	REJECT	UJ	ALL UJ			
SB-4F (U0806436-024)		230U	REJECT	UJ	ALL UJ			
SB-5D (U0806436-028)		180U	REJECT	UJ	ALL UJ			
SB-6E (U0806436-034)		220U	REJECT	UJ	ALL UJ			
SB-7E (U0806436-039)	ALL UJ	230UJ	REJECT	UJ				
SB-8E (U0806436-045)	ALL UJ	230UJ	REJECT	UJ				
DUPE2 (U0806436-046)	ALL UJ	220UJ	REJECT	UJ		ALL UJ		
SB-9E (U0806436-053)	ALL UJ	280UJ	REJECT	UJ				
SB-10D(U0806436-057)	ALL UJ	190UJ	REJECT	UJ				
SB-10F(U0806436-059)	ALL UJ	220UJ	REJECT	UJ		ALL UJ		
SB-11E(U0806436-064)	ALL UJ		REJECT	UJ			ALL UJ	
SB-12D(U0806436-070)	ALL UJ		REJECT	UJ			ALL UJ	
SB-13E(U0806436-076)	ALL UJ		REJECT	UJ				
SB-14E(U0806436-082)	ALL UJ	180UJ	REJECT	UJ				

CAL1 = fluoranthene, atrazine, benzaldehyde
CAL2 = bis(2-chloroethoxy)methane, atrazine, benzaldehyde, caprolactam
CAL3 = 3-nitroanaline, 2,4-dinitrophenol, 2,4-dinitrotoluene, 4-nitrophenol, 4-nitroanaline, carbazole, fluoranthene, pyrene, di-n-octylphthalate, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene, atrazine, benzaldehyde, biphenyl
CAL4 = 2,4-dinitrotoluene, 4-nitrophenol, 4-nitroanaline, Carbazole, fluoranthene, pyrene, butylbenzyl-phthalate, bis(2-ethylhexyl)phthalate, benzaldehyde, caprolactam, bis(2-chloroethoxy)methane

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	HOLD TIME	BLANKS PHTHALATE	BLANK TIC	CALIBRATE 2-METHYLPHENOL	CALIBRATE CAL1	CALIBRATE CAL2	CALIBRATE CAL3	CALIREATE CAL4
SB-15E(U0806436-088)	ALL UJ	190UJ	REJECT	UJ				
SB-16E(U0806436-096)	ALL UJ		REJECT	UJ			ALL UJ	
SB-17E(U0806436-102)	ALL UJ	180UJ	REJECT	UJ				
SB-18E(U0806436-108)	ALL UJ		REJECT	UJ				
SB-19E(U0806436-113)	ALL UJ		REJECT	UJ				
SB-21E(U0806436-119)	ALL UJ	180UJ	REJECT	UJ				
SB-22E(U0806436-124)	ALL J/UJ			UJ				ALL UJ
SB-23F(U0806436-131)	ALL UJ		REJECT	UJ				ALL UJ
SB-24E(U0806436-136)	ALL UJ		REJECT	UJ				ALL UJ
SB-25E(U0806436-141)	ALL UJ		REJECT	UJ				ALL UJ
SB-26E(U0806436-146)	ALL UJ		REJECT	UJ				ALL UJ
SB-27E(U0806436-151)	ALL UJ	190UJ	REJECT	UJ				ALL UJ
SB-28E(U0806436-156)	ALL J/UJ			UJ				ALL UJ
SB-29D(U0806436-161)	ALL UJ			UJ				ALL UJ
SB-30E(U0806436-168)	ALL J/UJ			UJ				ALL UJ
SB-31D(U0806436-180)	ALL UJ			UJ				ALL UJ

CAL1 = fluoranthene, atrazine, benzaldehyde
CAL2 = bis(2-chloroethoxy)methane, atrazine, benzaldehyde, caprolactam
CAL3 = 3-nitroanaline, 2,4-dinitrophenol, 2,4-dinitrotoluene, 4-nitrophenol, 4-nitroanaline, carbazole, fluoranthene, pyrene, di-n-octylphthalate, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(g,h,i)perylene, atrazine, benzaldehyde, biphenyl
CAL4 = 2,4-dinitrotoluene, 4-nitrophenol, 4-nitroanaline, Carbazole, fluoranthene, pyrene, butyl benzyl-phthalate, bis(2-ethylhexyl)phthalate, benzaldehyde, caprolactam, bis(2-chloroethoxy)methane

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	CALIBRATE CAL5	SURROGATES	INT STD IS1	INT STD IS2	INT STD IS3	INT STD IS4	INT STD IS5	INT STD IS6	MISSING SPECTRA BENZALDEHYDE
SB-1E (U0806436-005)			ALL UJ	ALL UJ	ALL UJ	ALL UJ			
SB-2F (U0806436-011)			ALL UJ	ALL UJ	ALL UJ	ALL UJ			
SB-3A (U0806436-012)		ALL POS J					ALL J/UJ	ALL UJ	190U
DUPE1 (U0806436-017)			ALL UJ	ALL UJ	ALL UJ	ALL UJ			
SB-3F (U0806436-018)				ALL UJ	ALL UJ	ALL UJ			
SB-4F (U0806436-024)			ALL UJ	ALL UJ	ALL UJ	ALL UJ			
SB-5D (U0806436-028)						ALL UJ			180U
SB-6E (U0806436-034)			ALL UJ	ALL UJ	ALL UJ	ALL UJ			220U
SB-7E (U0806436-039)	ALL UJ								
SB-8E (U0806436-045)	ALL UJ								
DUPE2 (U0806436-046)							ALL UJ		
SB-9E (U0806436-053)	ALL UJ								
SB-10D(U0806436-057)	ALL UJ								
SB-10F(U0806436-059)							ALL UJ	ALL UJ	
SB-11E(U0806436-064)									
SB-12D(U0806436-070)									
SB-13E(U0806436-076)	ALL UJ								
SB-14E(U0806436-082)	ALL UJ								

CAL5 = 2,4-dinitrotoluene, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, atrazine, benzaldehyde, caprolactam

IS1 = benzaldehyde, bis(2-chloroethyl)ether, phenol, 2-chlorophenol, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, bis(2-chloroisopropyl)ether, 2-methylphenol, hexachloroethane, N-nitrosodi-n-propylamine, 3+4-methylphenol

IS2 = acetophenone, caprolactam, biphenyl, nitrobenzene, isophorone, 2-nitrophenol, 2,4-dimethylphenol, bis(2-chloroethoxy)methane, 2,4-dichlorophenol, 1,2,4-trichlorobenzene, naphthalene, 4-chloroaniline, hexachlorobutadiene, 4-chloro-3-methylphenol, 2-methylnaphthalene

IS3 = 1,2,4,5-tetrachlorobenzene, caprolactam, hexachlorocyclopentadiene, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, 2-chloronaphthalene, 2-nitroaniline, acenaphthylene, dimethylphthalate, 2,6-dinitrotoluene, acenaphthene, 3-nitroaniline, 2,4-dinitrotoluene, dibenzofuran, 2,4-dinitrotoluene, 4-nitrophenol, fluorene, 4-chlorophenylphenylether, diethylphthalate, 4-nitroaniline

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

IS4 = 4,6-dinitro-2-methylphenol, N-nitrosodiphenylamine, 4-bromophenylphenylether, hexachlorobenzene, pentachlorophenol phenanthreene, anthracene, di-n-butylphthalate, carbazole, fluoranthene

IS5 = 3,3'-dichlorobenzidine, pyrene, butylbenzylphthalate, benz(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate

IS6 = di-n-octylphthalate, benzo(b)fluoranthene, acetophenone, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene, benzo(g,h,i)perylene

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	CALIBRATE CAL5	SURROGATES	INT STD IS1	INT STD IS2	INT STD IS3	INT STD IS4	INT STD IS5	INT STD IS6	MISSING SPECTRA BENZALDEHYDE
SB-15E(U0806436-088)	ALL UJ								
SB-16E(U0806436-096)			ALL UJ	ALL UJ	ALL UJ			ALL UJ	
SB-17E(U0806436-102)	ALL UJ								
SB-18E(U0806436-108)	ALL UJ								
SB-19E(U0806436-113)	ALL UJ								
SB-21E(U0806436-119)	ALL UJ								
SB-22E(U0806436-124)									
SB-23F(U0806436-131)									
SB-24E(U0806436-136)									
SB-25E(U0806436-141)									
SB-26E(U0806436-146)									
SB-27E(U0806436-151)				ALL UJ	ALL UJ				
SB-28E(U0806436-156)									
SB-29D(U0806436-161)									
SB-30E(U0806436-168)									
SB-31D(U0806436-180)									

CAL5 = 2,4-dinitrotoluene, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, atrazine, benzaldehyde, caprolactam

IS1 = benzaldehyde, bis(2-chloroethyl)ether, phenol, 2-chlorophenol, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlor benzene, bis(2-chloroisopropyl)ether, 2-methylphenol, hexachloroethane, N-nitrosodi-n-propylamine, 3+4-methylphenol

IS2 = acetophenone, caprolactam, biphenyl, nitrobenzene, isophorone, 2-nitrophenol, 2,4-dimethylphenol, bis(2-chloroethoxy)methane, 2,4-dichlorophenol, 1,2,4-trichlorobenzene, naphthalene, 4-chloroaniline, hexachlorobutadiene, 4-chloro-3-methylphenol, 2-methylnaphthalene

IS3 = 1,2,4,5-tetrachlorobenzene, caprolactam, hexachlorocyclopentadiene, 2,4,6-trichlorophenol, 2,4,5-trichlorophenol, 2-chloronaphthalene, 2-nitroaniline, acenaphthylene, dimethylphthalate, 2,6-dinitrotoluene, acenaphthene, 3-nitroanilir 2,4-dinitrotoluene, dibenzofuran, 2,4-dinitrotoluene, 4-nitrophenol, fluorene, 4-chlorophenylphenylether, diethylphthalate, 4-nitroaniline

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

IS4 = 4,6-dinitro-2-methylphenol, N-nitrosodiphenylamine, 4-bromophenylphenylether, hexachlorobenzene, pentachlorophenol phenanthreene, anthracene, di-n-butylphthalate, carbazole, fluoranthene

IS5 = 3,3'-dichlorobenzidine, pyrene, butylbenzylphthalate, benz(a)anthracene, chrysene, bis(2-ethylhexyl)phthalate

IS6 = di-n-octylphthalate, benzo(b)fluoranthene, acetophenone, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene, benzo(g,h,i)perylene

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	SPECTRA ID TIC	SPECTRA ID BUTYLBENZYLPHTHALATE	DFTPP CHECK
SB-1E (U0806436-005)	EDIT		
SB-2F (U0806436-011)	EDIT		
SB-3A (U0806436-012)	EDIT	190U	
DUPE1 (U0806436-017)	EDIT		
SB-3F (U0806436-018)	EDIT		
SB-4F (U0806436-024)	EDIT		
SB-5D (U0806436-028)	EDIT		
SB-6E (U0806436-034)	EDIT		
SB-7E (U0806436-039)	EDIT		
SB-8E (U0806436-045)	EDIT		
DUPE2 (U0806436-046)	EDIT		
SB-9E (U0806436-053)	EDIT		
SB-10D(U0806436-057)	EDIT		
SB-10F(U0806436-059)	EDIT		
SB-11E(U0806436-064)	EDIT		
SB-12D(U0806436-070)	EDIT		
SB-13E(U0806436-076)	EDIT		
SB-14E(U0806436-082)	EDIT		

SUMMARY OF QUALIFIED DATA

H.M. QUACKENBUSH SITE

SAMPLED: June 2008

	SPECTRA ID TIC	SPECTRA ID BUTYLBENZYLPHTHALATE	DFTPPP CHECK
SB-15E(U0806436-088)	EDIT		
SB-16E(U0806436-096)	EDIT		
SB-17E(U0806436-102)	EDIT		
SB-18E(U0806436-108)	EDIT		
SB-19E(U0806436-113)	EDIT		
SB-21E(U0806436-119)	EDIT		ALL UJ
SB-22E(U0806436-124)	EDIT		
SB-23F(U0806436-131)	EDIT		
SB-24E(U0806436-136)	EDIT		
SB-25E(U0806436-141)	EDIT		
SB-26E(U0806436-146)	EDIT		
SB-27E(U0806436-151)			
SB-28E(U0806436-156)	EDIT		
SB-29D(U0806436-161)	EDIT		
SB-30E(U0806436-168)	EDIT		
SB-31D(U0806436-180)	EDIT		

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 63
Sampled June 2008

METALS

SB-1A thru SB-31E

METALS

SB-1A	(U0806436-001)	SB-1B	(U0806436-002	SB-1C	(U0806436-003)
SB-1D	(U0806436-004)	SB-1E	(U0806436-005)	SB-2A	(U0806436-006)
SB-2B	(U0806436-007)	SB-2C	(U0806436-008)	SB-2D	(U0806436-009)
SB-2E	(U0806436-010)	SB-2F	(U0806436-011)	SB-3A	(U0806436-012)
SB-3B	(U0806436-013)	SB-3C	(U0806436-014)	SB-3D	(U0806436-015)
SB-3E	(U0806436-016)	DUPE1	(U0806436-017)	SB-3F	(U0806436-018)
SB-4A	(U0806436-019)	SB-4B	(U0806436-020)	SB-4C	(U0806436-021)
SB-4D	(U0806436-022)	SB-4E	(U0806436-023)	SB-4F	(U0806436-024)
SB-5A	(U0806436-025)	SB-5B	(U0806436-026)	SB-5C	(U0806436-027)
SB-5D	(U0806436-028)	SB-5E	(U0806436-029)	SB-6A	(U0806436-030)
SB-6B	(U0806436-031)	SB-6C	(U0806436-032)	SB-6D	(U0806436-033)
SB-6E	(U0806436-034)	SB-7A	(U0806436-035)	SB-7B	(U0806436-036)
SB-7C	(U0806436-037)	SB-7D	(U0806436-038)	SB-7E	(U0806436-039)
SB-7FBG	(U0806436-040)	SB-8A	(U0806436-041)	SB-8B	(U0806436-042)
SB-8C	(U0806436-043)	SB-8D	(U0806436-044)	SB-8E	(U0806436-045)
SB-9A	(U0806436-049)	SB-9B	(U0806436-050)	SB-9C	(U0806436-051)
SB-9D	(U0806436-052)	SB-9E	(U0806436-053)	SB-10A	(U0806436-054)
SB-10B	(U0806436-055)	SB-10C	(U0806436-056)	SB-10D	(U0806436-057)
SB-10E	(U0806436-058)	SB-10F	(U0806436-059)	SB-11A	(U0806436-060)
SB-11B	(U0806436-061)	SB-11C	(U0806436-062)	SB-11D	(U0806436-063)
SB-11E	(U0806436-064)	DUPE3	(U0806436-065)	DUPE4	(U0806436-066)
SB-12A	(U0806436-067)	SB-12B	(U0806436-068)	SB-12C	(U0806436-069)
SB-12D	(U0806436-070)	SB-12E	(U0806436-071)	SB-13A	(U0806436-072)
SB-13B	(U0806436-073)	SB-13C	(U0806436-074)	SB-13D	(U0806436-075)
SB-13E	(U0806436-076)	SB-13F	(U0806436-077)	SB-14A	(U0806436-078)
SB-14B	(U0806436-079)	SB-14C	(U0806436-080)	SB-14D	(U0806436-081)
SB-14E	(U0806436-082)	SB-14F	(U0806436-083)	SB-15A	(U0806436-084)
SB-15B	(U0806436-085)	SB-15C	(U0806436-086)	SB-15D	(U0806436-087)
SB-15E	(U0806436-088)	SB-15F	(U0806436-089)	SB-16A	(U0806436-092)
SB-16B	(U0806436-093)	SB-16C	(U0806436-094)	SB-16D	(U0806436-095)
SB-16E	(U0806436-096)	SB-16F	(U0806436-097)	SB-17A	(U0806436-098)
SB-17B	(U0806436-099)	SB-17C	(U0806436-100)	SB-17D	(U0806436-101)
SB-17E	(U0806436-102)	SB17FBG	(U0806436-103)	SB-18A	(U0806436-104)
SB-18B	(U0806436-105)	SB-18C	(U0806436-106)	SB-18D	(U0806436-107)
SB-18E	(U0806436-108)	SB-19A	(U0806436-109)	SB-19B	(U0806436-110)
SB-19C	(U0806436-111)	SB-19D	(U0806436-112)	SB-19E	(U0806436-113)
SB-20A	(U0806436-114)	SB-21A	(U0806436-115)	SB-21B	(U0806436-116)
SB-21C	(U0806436-117)	SB-21D	(U0806436-118)	SB-21E	(U0806436-119)
SB-22A	(U0806436-120)	SB-22B	(U0806436-121)	SB-22C	(U0806436-122)
SB-22D	(U0806436-123)	SB-22E	(U0806436-124)	SB-22F	(U0806436-125)
SB-23A	(U0806436-126)	SB-23B	(U0806436-127)	SB-23C	(U0806436-128)
SB-23D	(U0806436-129)	SB-23E	(U0806436-130)	SB-23F	(U0806436-131)
SB-24A	(U0806436-132)	SB-24B	(U0806436-133)	SB-24C	(U0806436-134)
SB-24D	(U0806436-135)	SB-24E	(U0806436-136)	SB-25A	(U0806436-137)
SB-25B	(U0806436-138)	SB-25C	(U0806436-139)	SB-25D	(U0806436-140)

SB-25E (U0806436-141)	SB-26A (U0806436-142)	SB-26B (U0806436-143)
SB-26C (U0806436-144)	SB-26D (U0806436-145)	SB-26E (U0806436-146)
SB-27A (U0806436-147)	SB-27B (U0806436-148)	SB-27C (U0806436-149)
SB-27D (U0806436-150)	SB-27E (U0806436-151)	SB-28A (U0806436-152)
SB-28B (U0806436-153)	SB-28C (U0806436-154)	SB-28D (U0806436-155)
SB-28E (U0806436-156)	SB-28F (U0806436-157)	SB-29A (U0806436-158)
SB-29B (U0806436-159)	SB-29C (U0806436-160)	SB-29D (U0806436-161)
SB-29E (U0806436-162)	SB-29F (U0806436-163)	SB-30A (U0806436-164)
SB-30B (U0806436-165)	SB-30C (U0806436-166)	SB-30D (U0806436-167)
SB-30E (U0806436-168)	SB-30F (U0806436-169)	DUPE5 (U0806436-170)
DUPE6 (U0806436-171)	DUPE7 (U0806436-172)	DUPE8 (U0806436-173)
DUPE9 (U0806436-174)	SB-31A (U0806436-177)	SB-31B (U0806436-178)
SB-31C (U0806436-179)	SB-31D (U0806436-180)	SB-31E (U0806436-181)

DATA ASSESSMENT

An inorganics data package containing analytical results for 173 soil samples was received from Upstate Laboratories,. Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methodologies, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2006, Validation of Metals for the Contract Laboratory Program) was used as a technical reference.

To prepare this Data Usability Summary Report, it was assumed that the laboratories calculations were correct. This assumption is based on the laboratory's ASP certifications. Beyond that assumption, the remainder of the validation process was unchanged.

Due to the size of this project, the QC associated with this group of samples has been evaluated on a digestion group basis. This group of samples is too large to evaluate every sample based on every matrix spike, duplicate pair, and serial dilution. By this approach, reported data has only been evaluated based on the QC samples it was digested and analyzed with.

Data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, and completely usable in its present form. Data providing a usable estimation of the conditions existing at the time of sampling has been flagged "J", "UJ" and "BJ". Data that is felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19 Apr 09

James B. Baldwin

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt; cyanide 12 days. The remaining metals must be digested and analyzed within 180 days of receipt.

This sample delivery group contained 173 soil samples that were collected from the H.M. Quachenbush site between 19Jun08 and 02Jul08. In most cases, the samples were delivered to the laboratory within two days of collection. The 41 samples collected on 20Jun08 were not received by the laboratory for three days. The custody record for these samples indicates that they were refrigerated between 20Jun08 and 21Jun08. Similarly, the five samples collected on 02Jul08 were not received by the laboratory until 07Jul08. These samples were refrigerated until the day they were delivered. The laboratory record indicates that, although cooler temperatures were not recorded, each group of samples was properly chilled to 4°C at the time of receipt. Although the five days that SB-31A, SB-31B, SB-31C, SB-31D and SB-31E were held prior to delivery is considered excessive, the total time between sampling and analysis is not a concern.

Several areas are noted where the custody records for this group of samples were inaccurate or incomplete. The field Chain of Custody indicates that samples SB-1A thru SB-3E were collected on 20Jun08. The dates documenting transfers of these samples, however, indicate that the date of collection was 19Jun08. The laboratory's Sample Receipt Check List for samples received on 25Jun08 was not included in the date package, and the laboratory's internal custody chains were incomplete. Data has not been qualified due to these lapses in documentation because the technical quality of the results is not impacted. However, it must be noted that analytical that results cannot be considered legally defensible if the samples cannot be traced between the time of collection and the time of analysis.

Numerous samples were held, in the laboratory, beyond the ASP holding time limitation prior to analysis for mercury and cyanide. The affected samples are tabulated below.

Mercury

SB-13C, SB-13D, SB-13E, SB-13F, SB-14A, SB-14B, SB-14C, SB-14D
SB-14E, SB-14F, SB-15A, SB-15B, SB-15C, SB-15D, SB-15E, SB-15F
SB-16A, SB-16B, SB-16C, SB-16D, SB-16E, SB-16F, SB-17A, SB-17B
SB-17C, SB-17D, SB-17E, SB-18A, SB-18B, SB-18C, SB-18D, SB-18E
SB-19A, SB-19B, SB-19C, SB-19D, SB-19E, SB-20A, SB-21A, SB-21B
SB-21C, SB-21D, SB-21E, SB-22A, SB-22B, SB-22C, SB-22D, SB-22E

SB-22F, SB-23A, SB-23B, SB-23C, SB-23D, SB-23E, SB-23F, SB-24A SB-24B, SB-24C, SB-24D, SB-24E, SB-25A, SB-25B, SB-25C, SB-25D SB-25E, SB-26A, SB-26B, SB-26C, SB-26D, SB-26E, SB-27A, SB-27B SB-27C, SB-27D, SB-27E, SB-28A, SB-28B, SB-28C, SB-28D, SB-28E SB-28F, SB-29A, SB-29B, SB-29C, SB-29D, SB-29E, SB-29F, SB-30A SB-30B, SB-30C, SB-30D, SB-30E, SB-30F, DUPE5, DUPE6, DUPE7, DUPE9

Cyanide
SB-26A, SB-26B, SB-26C, SB-26D, SB-26E, SB-27A, SB-27B, SB-27C, SB-27D, SB-27E, SB-28A, SB-28B, SB-28C, SB-28D, SB-28E, SB-28F, SB-29A, SB-29B, SB-29C, SB-29D, SB-29E, SB-29F, SB-30A, SB-30B, SB-30C, SB-30D, SB-30E, SB-30F, DUPE5, DUPE6, DUPE7, DUPE9

The cyanide and mercury results from these samples have been qualified as estimations.

CALIBRATIONS
Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. These checks demonstrated a bias in the measurements of several targeted analytes. The ranges of unacceptable calibration results and the associated data qualifications have been tabulated below.

Silver (115%-118%)
SB-1A, SB-2C, SB-5E, SB-8B, SB-22D, SB22E, SB-23B, SB-14A, SB-14C, SB-15E,SB-16A, SB-16B, SB-16D, SB-16E, SB-17E, SB-21A, SB-26E, SB-27A, SB-27C, SB-27D, SB-27E, SB-28A, SB-28C, SB-29A, SB-29E, SB-29F, SB-30E, DUP7, SB-31B, SB-31C

Antimony (77%-89.6%)
SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E SB-22A, SB-22B, SB-C, SB-22D, SB-22E, SB-22F, SB-23A, SB-22B, SB-22C, SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A, SB-18B, SB-18C

Arsenic (76%-116%)
SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A,

SB-18B, SB-18C, SB-22D, SB-22E, SB-23A, SB-23B, SB-23C, SB-24A, SB-25B, SB-26A

Calcium (76%)
SB-16F, SB-17A, SB-17B, SB-17C, SB-17E, SB-18A, SB-18C

Lead (77%)
SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A SB-18B, SB-18C

Selenium (79%-131%)
SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A SB-18B, SB-18C, SB-23A, SB-13C, SB-13D

Thallium (76%)
SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A SB-18B, SB-18C

Zinc (118%-126%)
SB-21E, SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A SB-23B, SB-23C, SB-23D, SB-23E, SB-23F, SB-24A, SB-24B, SB-24C SB-24D, SB-24E, SB-25A, SB-25B, SB-25C, SB-25D, SB-25E, SB-26A SB-26B, SB-26C, SB-26D, SB-26E, SB-27A, SB-27B, SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-13C, SB-13D

Mercury (72.3%)
DUPE7, SB-31A

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)
To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were analyzed as required. These checks produced unacceptable recoveries of zinc (164%,166%), arsenic (67%), selenium (58%,134%,139%,26%,181%,-2.5%,50%,144%) and mercury (39%,169%). Data that has been qualified due to poor CRDL performance is tabulated below,

Arsenic
SB-7C, SB-7D, SB-7E, SB-8A, SB-8B, SB-8C, SB-8D, SB-8E, DUPE2

Selenium
SB-1A, SB-1B, SB-1C, SB-1D, SB-1E, SB-2A, SB-2B, SB-2C, SB-2D

SB-23E, SB-23F, SB-24A, SB-24B, SB-24C, SB-24D, SB-24E, SB-25A, SB-25B, 25C, SB-25D, SB-25E, SB-26A, SB-26B, SB-26C, SB-26D, SB-26E, SB-27A, SB-27B

Zinc
SB-3E, DUPE1, SB-3F, SB-4A, SB-4B, SB-4C, SB-4D, SB-4E, SB-4F, SB-5A, SB-5B, SB-5C, SB-5D, SB-5E, SB-6A, SB-23D, SB-23E, SB-23F, SB-24A, SB-24B, SB-24C, SB-24D, SB-24E, SB-25A, SB-25B, 25C, SB-25D, SB-25E, SB-26A, SB-26B, SB-26C, SB-26D, SB-26E, SB-27A, SB-27B, SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E, SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A, SB-23B, SB-23C, SB-23D

Mercury
SB-14A, SB-14B, SB-14C, SB-14D, SB-14E, SB-14F, SB-15A, SB-15B, SB-16B, SB-16C, SB-16D, SB-16E, SB-17A, SB-17B, SB-17C, SB-18A, SB-19A, SB-19B, SB-21A, SB-21B

The following results have been rejected.

Selenium
SB-18C, SB-18D, SB-18E, SB-19A, SB-19B, SB-19C, SB-19D, SB-19E, SB-20A, SB-21A, SB-21B, SB-30C, SB-30D, SB-30E, SB-30F, DUPE5, DUPE6, DUPE7, DUPE9, SB-31A, SB-31B, SB-31C, SB-31D, SB-31E

Mercury
SB-13C, SB-13D, SB-13E, SB-13F, SB-15C, SB-15D, SB-15E, SB-15F, SB-16F, SB-17D, SB-17E, SB-18B, SB-18C, SB-18D, SB-18E, SB-19C, SB-19D, SB-19E, SB-20A

BLANKS
Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. A preparation blank was digested and analyzed with each group of samples. Several blanks associated with this project were contaminated with selenium (7.1,14.5,17.0,6.0 mg/kg) and lead (3.7,3.1 mg/kg). The positive results associated with these blanks have been rejected. The selenium result from SB-16D, and

the lead results from SB-25D, SB-25E, SB-26B, SB-26C, SB-26D, SB-27A and SB-27B are affected.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

Interference check standards, ICSA and ICSAB, were reported from the beginning and end of each ICP analysis sequence. Several of these checks demonstrated a positive bias in measurements of silver (125%,125%,122%,124%,123%,126%,127%,131%,125%,121%,126%, 126%,124%,127%,124%,125%,125%,125%,130%,131%) and copper (123%, 126%,123%,124%). A negative bias was observed in measurements of barium (13%,13.5%). The positive silver results from SB-14C, SB-16E, SB-24C, SB-24E, SB-27A, SB-27E, SB-28C, SB-29E, SB-29F, SB-30E and SB-31B, and the positive copper results from SB-17D, SB-18B, SB-19C, SB-19D, SB-19E, SB-21B, SB-23D, SB-24B, SB-24C, SB-24E, SB-25E, SB-26B, SB-27A, SB-27E, SB-28B, SB-28C, SB-29D, SB-29E, SB-29F, SB-30C, SB-30E, DUPE9, SB-31B and SB-31E have been qualified as estimations based on this performance. The barium results from SB-13C, SB-13D, SB-14C, SB-14D, SB-15A, SB-15B, SB-15C and SB-15D have been rejected.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

SB-10F, SB-13D, SB-17C, SB-22B, SB-23A, SB-26C, SB-2D, SB-5D and SB-6D were selected for matrix spiking. The results reported for these additions included unacceptable recoveries of chromium, zinc, cyanide, manganese, cadmium, copper, nickel, silver, arsenic, barium, antimony and mercury. This performance, and the data qualified due to it, is summarized below.

SB-10F Chromium (73%), Zinc (66%)

SB-9A, SB-9B, SB-9C, SB-9D, SB-9E, SB-10A, SB-10B, SB-10C, SB-10D SB-10E, SB-10F, SB-11A, SB-11B, SB-11C, SB-11D, SB-11E, SB-12A, SB-12B

SB-17C Manganese (66%), Cyanide (73%)

SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A,

SB-18B, SB-18C, SB-18D, SB-18E, SB-19A, SB-19B, SB-19C, SB-19D, SB-19E, SB-20A, SB-21A, SB-21B

SB-22B Cadmium (7.0%), Chromium (-33%), Copper (65%), Cyanide (128%), Manganese (41%), Nickel (49%), Silver (163%)
SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A, SB-23B SB-23C

SB-23A Arsenic (65%), Barium (63%), Copper (18%), Zinc ((59%) Manganese (23%), Nickel (163%), Silver (130%)
SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A, SB-23B SB-23C

SB-26C Manganese (382%)
SB-23D, SB-23E, SB-23F, SB-24A, SB-24B, SB-24C, SB-24D, SB-24E SB-25A, SB-25B, SB-25C, SB-25D, SB-25E, SB-26A, SB-26B, SB-26C SB-26D, SB-26E, SB-27A, SB-27B

SB-2D Silver (131%)
SB-1A, SB-2C

SB-5D Antimony (44%)
SB-3E, DUPE1, SB-3F, SB-4A, SB-4B, SB-4C, SB-4D, SB-4E, SB-4F SB-5A, SB-5B, SB-5C, SB-5D, SB-5E, SB-6A

SB-6D Antimony (42%), Silver (64%)
SB-6B, SB-6C, SB-6D, SB-6E, SB-7A, SB-7B, SB-7C, SB-7D, SB-7E SB-8A, SB-8B, SB-8C, SB-8D, SB-8E, DUPE2

SB-10F Mercury (3.9%)
SB-9A, SB-9B, SB-9C, SB-9D, SB-9E, SB-10A, SB-10B, SB-10C, SB-10D, SB-10E, SB-10F, SB-11A, SB-11B, SB-11C, SB-11D, SB-11E, DUPE3, DUPE4, SB-12A, SB-12B

SB-17C Mercury (38%)
SB-17A, SB-17B, SB-17C, SB-18A, SB-19A, SB-19B, SB-21A, SB-21B

The laboratory prepared the required number of spiked samples for a project of 173 samples. However, a spiked sample was not prepared in each batch of digested samples. The data reported from SB-1A to SB-3D, SB-27C to SB-30E, and SB-30F to SB-31E has been qualified as an estimation because these samples were not digested and analyzed with a matrix spiked sample.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

SB-02D, SB-05D, SB-10F, SB-13D, SB-17C, SB-22B, SB-23A and SB-26C were prepared as laboratory split duplicates. Several of the metals reported from these pairs of samples demonstrated poor measurement precision. Data associated with this performance has been qualified as an estimation.

SB-02D (As, Ca, Pb, Mg, Se, Zn)
SB-1A, SB-1B, SB-1C, SB-1D, SB-1E, SB-2A, SB-2B, SB-2C, SB-2D
SB-2E, SB-2F, SB-3A, SB-3B, SB-3C, SB-3D

SB-05D (Ag)
SB-3E, DUPE1, SB-3F, SB-4A, SB-4B, SB-4C, SB-4D, SB-4E, SB-4F
SB-5A, SB-5B, SB-5C, SB-5D, SB-5E, SB-6A

SB-10F (Al, As, Ba, Ca, Cr, Co, Cu, Fe, Pb, Mg. Mn, Ni, K, V, Zn)
SB-9A, SB-9B, SB-9C, SB-9D, SB-9E, SB-10A, SB-10B, SB-10C, SB-10D, SB-10E, SB-10F, SB-11A, SB-11B, SB-11C, SB-11D, SB-11E, DUPE3, DUPE4, SB-12A, SB-12B

SB-13D (Cu, Fe, Pb, Mg, Mn, Ni, Tl, Zn)
SB-13C, SB-13D, SB-13E, SB-13F, SB-14A, SB-14B, SB-14C, SB-14D
SB-14E, SB-14F, SB-15A, SB-15B, SB-15C, SB-15D, SB-15E, SB-15F
SB-16A, SB-16B, SB-16C, SB-16D

SB-17C (Mn, Hg, Ni, Zn)
SB-16E, SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A, SB-18B, SB-18C, SB-18D, SB-18E, SB-19A, SB-19B, SB-19C, SB-19D, SB-19E, SB-20A, SB-21A, SB-21B

SB-22B (Al, Cd, Cu, Cr, Fe, Pb, Mg, Ag, Tl)
SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E
SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A, SB-23B
SB-23C

SB-23A (Al, As, Ba, Cd, Cr, Cu, Fe, Pb, Mn, Hg, Tl, V)
SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E
SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A, SB-23B
SB-23C

SB-26C (Cr, Pb, Mg, Mn, Ni)
SB-23D, SB-23E, SB-23F, SB-24A, SB-24B, SB-24C, SB-24D, SB-24E
SB-25A, SB-25B, SB-25C, SB-25D, SB-25E, SB-26A, SB-26B, SB-26C
SB-26D, SB-26E, SB-27A, SB-27B

The laboratory prepared the required number of duplicate samples for a project of 173 samples. However, duplicates were not prepared in each batch of digested samples. The data reported from SB-06B to DUPE2, SB-27C to SB-30E, and SB-30F to SB-31E has been qualified as an estimation because these samples were not digested and analyzed with a pair of duplicate samples.

LABORATORY CONTROL STANDARD
Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

Eighteen solid LCS standards were digested and analyzed with this group of samples. Each of these standards produced an acceptable recovery of each targeted analyte.

SERIAL DILUTION SAMPLE
Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

SB-3D, SB-6A, DUPE2, SB-12B, SB-16D, SB-21B and SB-23C were prepared as serial dilutions. Of the analytes present in the undiluted samples, at a concentration exceeding 50 time IDL, measurements of manganese, iron, aluminum, calcium, lead, selenium and zinc in the diluted aliquots differed from the original sample by more than 10%. Data that has been qualified due to this performance is summarized below.

SB-3D (Mn)
SB-1A, SB-1B, SB-1C, SB-1D, SB-1E, SB-2A, SB-2B, SB-2C, SB-2D
SB-2E, SB-2F, SB-3A, SB-3B, SB-3C, SB-3D

SB-6A (Fe, Mn)
SB-3E, DUPE1, SB-3F, SB-4A, SB-4B, SB-4C, SB-4D, SB-4E, SB-4F
SB-5A, SB-5B, SB-5C, SB-5D, SB-5E, SB-6A

DUPE2 (Al, Ca, Fe, Mn)
SB-6B, SB-6C, SB-6D, SB-6E, SB-7A, SB-7B, SB-7C, SB-7D, SB-7E, SB-8A, SB-8B, SB-8C, SB-8D, SB-8E, DUPE2

SB-12B (Al, Ca, Fe, Pb, Mn)
SB-9A, SB-9B, SB-9C, SB-9D, SB-9E, SB-10A, SB-10B, SB-10C, SB-10D SB-10E, SB-10F, SB-11A, SB-11B, SB-11C, SB-11D, SB-11E, DUPE3, DUPE4, SB-12A, SB-12B

SB-16D (Al, Pb, Mn, Se, Zn)
SB-13C, SB-13D, SB-13E, SB-13F, SB-14A, SB-14B, SB-14C, SB-14D SB-14E, SB-14F, SB-15A, SB-15B, SB-15C, SB-15D, SB-15E, SB-15F SB-16B, SB-16C, SB-16D

SB-21B (Mn)
SB-16F, SB-17A, SB-17B, SB-17C, SB-17D, SB-17E, SB-18A, SB-18B, SB-18C, SB-18D, SB-18E, SB-19A, SB-19B, SB-19C, SB-19D, SB-19E, SB-20A, SB-21A, SB-21B

SB-23C (Fe, Pb, Mn, Zn)
SB-12C, SB-12D, SB-12E, SB-13A, SB-13B, SB-21C, SB-21D, SB-21E SB-22A, SB-22B, SB-22C, SB-22D, SB-22E, SB-22F, SB-23A, SB-23B SB-23C

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE SILVER	CALIBRATE ANTIMONY	CALIBRATE ARSENIC	CALIBRATE CALCIUM	CALIBRATE LEAD	CALIBRATE SELENIUM	CALIBRATE THALLIUM	CALIBRATE ZINC
U0806436-001 SB01A	2.3J							
U0806436-002 SB01B								
U0806436-003 SB01C								
U0806436-004 SB01D								
U0806436-005 SB01E								
U0806436-006 SB02A								
U0806436-007 SB02B								
U0806436-008 SB02C	3.1J							
U0806436-009 SB02D								
U0806436-010 SB02E								
U0806436-011 SB02F								
U0806436-012 SB03A								
U0806436-013 SB03B								
U0806436-014 SB03C								
U0806436-015 SB03D								
U0806436-016 SB03E								
U0806436-017 DUP1								
U0806436-018 SB03F								
U0806436-019 SB04A								
U0806436-020 SB04B								
U0806436-021 SB04C								
U0806436-022 SB04D								
U0806436-023 SB04E								
U0806436-024 SB04F								
U0806436-025 SB05A								
U0806436-026 SB05B								
U0806436-027 SB05C								
U0806436-028 SB05D								
U0806436-029 SB05E	22.7J							
U0806436-030 SB06A								

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	CALIBRATE MERCURY	CRDL SELENIUM	CRDL ZINC	CDRL ARSENIC	CRDL MERCURY	BLANK SELENIUM	BLANKS LEAD	ICS SILVER	ICS BARIUM	ICS COPPER.
U0806436-001 SB01A		UJ								
U0806436-002 SB01B		4.2J								
U0806436-003 SB01C		1.4J								
U0806436-004 SB01D		2.9J								
U0806436-005 SB01E		1.5J								
U0806436-006 SB02A		UJ								
U0806436-007 SB02B		UJ								
U0806436-008 SB02C		3.0J						3.1J		
U0806436-009 SB02D		4.3J								
U0806436-010 SB02E										
U0806436-011 SB02F										
U0806436-012 SB03A										
U0806436-013 SB03B										
U0806436-014 SB03C										
U0806436-015 SB03D										
U0806436-016 SB03E			36.3J							
U0806436-017 DUP1			68.1J							
U0806436-018 SB03F			29.2J							
U0806436-019 SB04A			54.8J							
U0806436-020 SB04B			74.4J							
U0806436-021 SB04C			62.0J							
U0806436-022 SB04D			56.8J							
U0806436-023 SB04E			80.7J							
U0806436-024 SB04F			127J							
U0806436-025 SB05A			50.1J							
U0806436-026 SB05B			11.5J							
U0806436-027 SB05C			28.5J							
U0806436-028 SB05D			58.4J							
U0806436-029 SB05E			77.2J							
U0806436-030 SB06A			53.5J							

DATA QUALIFICATIONS

H.K Quackenbush Site

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	DUPES SILVER	SPIKE ANTIMONY	MISSING SPIKE	DUPES ARSENIC	DUPES CALCIUM	DUPES LEAD	DUPES MANGESIUM	DUPES SELENIUM	DUPES ZINC
U0806436-001 SB01A			ALL J/UJ	4.2J	28100J	71.4J	4600J	UJ	71.7J
U0806436-002 SB01B			ALL J/UJ	2.2J	140000J	3.9J	35700J	4.2J	26.2J
U0806436-003 SB01C			ALL J/UJ	UJ	143000J	15.4J	15600J	1.4J	37.5J
U0806436-004 SB01D			ALL J/UJ	UJ	116000J	1.6J	12600J	2.9J	28.0J
U0806436-005 SB01E			ALL J/UJ	UJ	69100J	4.5J	10300J	1.5J	30.0J
U0806436-006 SB02A			ALL J/UJ	5.2J	11900J	65.8J	2960J	UJ	74.7J
U0806436-007 SB02B			ALL J/UJ	6.8J	6440J	13.8J	2990J	UJ	63.7J
U0806436-008 SB02C			ALL J/UJ	UJ	181000J	UJ	13600J	3.0J	17.5J
U0806436-009 SB02D			ALL J/UJ	UJ	144000J	1.7J	33500J	4.3J	25.4J
U0806436-010 SB02E			ALL J/UJ	2.6J	113000J	6.0J	16600J	2.2J	31.5J
U0806436-011 SB02F			ALL J/UJ	UJ	146000J	3.8J	12700J	UJ	27.6J
U0806436-012 SB03A			ALL J/UJ	5.4J	8420J	45.7J	1840J	UJ	66.7J
U0806436-013 SB03B			ALL J/UJ	5.9J	8990J	41.9J	2380J	UJ	43.0J
U0806436-014 SB03C			ALL J/UJ	UJ	28000J	3.9J	2550J	UJ	24.5J
U0806436-015 SB03D			ALL J/UJ	UJ	161000J	1.0J	9190J	UJ	33.0J
U0806436-016 SB03E	UJ	UJ							
U0806436-017 DUP1	UJ	UJ							
U0806436-018 SB03F	UJ	UJ							
U0806436-019 SB04A	UJ	UJ							
U0806436-020 SB04B	UJ	UJ							
U0806436-021 SB04C	UJ	UJ							
U0806436-022 SB04D	UJ	UJ							
U0806436-023 SB04E	UJ	UJ							
U0806436-024 SB04F	UJ	UJ							
U0806436-025 SB05A	UJ	UJ							
U0806436-026 SB05B	UJ	UJ							
U0806436-027 SB05C	UJ	UJ							
U0806436-028 SB05D	UJ	UJ							
U0806436-029 SB05E	22.7J	UJ							
U0806436-030 SB06A	UJ	UJ							

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	SER DILUTE MANGANESE	SER DILUTE IRON	SPIKES SILVER
U0806436-001 SB01A	1030J		2.3J
U0806436-002 SB01B	806J		
U0806436-003 SB01C	644J		
U0806436-004 SB01D	348J		
U0806436-005 SB01E	404J		
U0806436-006 SB02A	361J		
U0806436-007 SB02B	518J		
U0806436-008 SB02C	627J		3.1J
U0806436-009 SB02D	502J		
U0806436-010 SB02E	605J		
U0806436-011 SB02F	486J		
U0806436-012 SB03A	769J		
U0806436-013 SB03B	776J		
U0806436-014 SB03C	224J		
U0806436-015 SB03D	522J		
U0806436-016 SB03E	318J	9270J	
U0806436-017 DUP1	310J	9790J	
U0806436-018 SB03F	313J	9240J	
U0806436-019 SB04A	530J	21900J	
U0806436-020 SB04B	701J	23500J	
U0806436-021 SB04C	422J	14400J	
U0806436-022 SB04D	435J	19900J	
U0806436-023 SB04E	491J	32700J	
U0806436-024 SB04F	870J	51000J	
U0806436-025 SB05A	683J	23900J	
U0806436-026 SB05B	562J	12800J	
U0806436-027 SB05C	229J	8720J	
U0806436-028 SB05D	455J	22200J	
U0806436-029 SB05E	517J	30600J	
U0806436-030 SB06A	1010J	20400J	

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE SILVER	CALIBRATE ANTIMONY	CALIBRATE ARSENIC	CALIBRATE CALCIUM	CALIBRATE LEAD	CALIBRATE SELENIUM	CALIBRATE THALLIUM	CALIBRATE ZINC
U0806436-031 SB06B								
U0806436-032 SB06C								
U0806436-033 SB06D								
U0806436-034 SB06E								
U0806436-035 SB07A								
U0806436-036 SB07B								
U0806436-037 SB07C								
U0806436-038 SB07D								
U0806436-039 SB07E								
U0806436-041 SB08A								
U0806436-042 SB08B	2.8J							
U0806436-043 SB08C								
U0806436-044 SB08D								
U0806436-045 SB08E								
U0806436-046 DUP2								
U0806436-049 SB09A								
U0806436-050 SB09B								
U0806436-051 SB09C								
U0806436-052 SB09D								
U0806436-053 SB09E								
U0806436-054 SB10A								
U0806436-055 SB10B								
U0806436-056 SB10C								
U0806436-057 SB10D								
U0806436-058 SB10E								
U0806436-059 SB10F								
U0806436-060 SB11A								
U0806436-061 SB11B								
U0806436-062 SB11C								
U0806436-063 SB11D								
U0806436-064 SB11E								
U0806436-067 SB12A								
U0806436-068 SB12B								

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE MERCURY	CRDL SELENIUM	CRDL ZINC	CDRL ARSENIC	CRDL MERCURY	BLANK SELENIUM	BLANKS LEAD	ICS SILVER	ICS BARIUM	ICS COPPER.
U0806436-031 SB06B										
U0806436-032 SB06C										
U0806436-033 SB06D										
U0806436-034 SB06E										
U0806436-035 SB07A										
U0806436-036 SB07B										
U0806436-037 SB07C				2.5J						
U0806436-038 SB07D				4.2J						
U0806436-039 SB07E				4.5J						
U0806436-041 SB08A				4.2J						
U0806436-042 SB08B				3.2J						
U0806436-043 SB08C				UJ						
U0806436-044 SB08D				UJ						
U0806436-045 SB08E				4.0J						
U0806436-046 DUP2				3.5J						
U0806436-049 SB09A										
U0806436-050 SB09B										
U0806436-051 SB09C										
U0806436-052 SB09D										
U0806436-053 SB09E										
U0806436-054 SB10A										
U0806436-055 SB10B										
U0806436-056 SB10C										
U0806436-057 SB10D										
U0806436-058 SB10E										
U0806436-059 SB10F										
U0806436-060 SB11A										
U0806436-061 SB11B										
U0806436-062 SB11C										
U0806436-063 SB11D										
U0806436-064 SB11E										
U0806436-067 SB12A										
U0806436-068 SB12B										

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	SPIKE ANTIMONY	SPIKE SILVER	SPIKE CHROMIUM	SPIKE MERCURY	SPIKE ZINC	DUPE DUPE1	MISSING DUPES	SER DIL SD1	SER DIL LEAD
U0806436-031 SB06B	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-032 SB06C	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-033 SB06D	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-034 SB06E	UJ	UJ					ALL J/UJ	ALL J	
U0806436-035 SB07A	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-036 SB07B	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-037 SB07C	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-038 SB07D	UJ	UJ					ALL J/UJ	ALL J	
U0806436-039 SB07E	UJ	UJ					ALL J/UJ	ALL J	
U0806436-041 SB08A	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-042 SB08B	UJ	2.8J					ALL J/UJ/BJ	ALL J	
U0806436-043 SB08C	UJ	UJ					ALL J/UJ/BJ	ALL J	
U0806436-044 SB08D	UJ	UJ					ALL J/UJ	ALL J	
U0806436-045 SB08E	UJ	UJ					ALL J/UJ	ALL J	
U0806436-046 DUP2	UJ	UJ					ALL J/UJ	ALL J	
U0806436-049 SB09A			12.7J	REJECT	69.9J	ALL J/UJ/BJ		ALL J	93.2J
U0806436-050 SB09B			12.5J	REJECT	62.7J	ALL J/UJ/BJ		ALL J	27.3J
U0806436-051 SB09C			6.9J	REJECT	28.3J	ALL J/UJ/BJ		ALL J	2.8J
U0806436-052 SB09D			5.1J	REJECT	21.9J	ALL J/UJ/BJ		ALL J	4.2J
U0806436-053 SB09E			23.5J	REJECT	79.5J	ALL J/UJ/BJ		ALL J	7.6J
U0806436-054 SB10A			9.8J	REJECT	46.6J	ALL J/UJ/BJ		ALL J	45.8J
U0806436-055 SB10B			9.5J	REJECT	52.1J	ALL J/UJ/BJ		ALL J	5.1J
U0806436-056 SB10C			12.7J	REJECT	373J	ALL J/UJ/BJ		ALL J	4.6J
U0806436-057 SB10D			17.0J	REJECT	61.5J	ALL J/UJ/BJ		ALL J	8.2J
U0806436-058 SB10E			24.0J	REJECT	79.7J	ALL J/UJ/BJ		ALL J	8.1J
U0806436-059 SB10F			37.1J	REJECT	117J	ALL J/UJ/BJ		ALL J	15.1J
U0806436-060 SB11A			13.2J	REJECT	122J	ALL J/UJ/BJ		ALL J	436J
U0806436-061 SB11B			8.9J	REJECT	42.1J	ALL J/UJ/BJ		ALL J	5.5J
U0806436-062 SB11C			6.0J	REJECT	29.3J	ALL J/UJ/BJ		ALL J	2.3J
U0806436-063 SB11D			16.5J	REJECT	68.5J	ALL J/UJ/BJ		ALL J	9.0J
U0806436-064 SB11E			21.8J	REJECT	75.6J	ALL J/UJ/BJ		ALL J	7.7J
U0806436-067 SB12A			10.2J	REJECT	79.1J	ALL J/UJ/BJ		ALL J	88J
U0806436-068 SB12B			10.6J	REJECT	59.3J	ALL J/UJ/BJ		ALL J	69.4J

DUPE1 = Al, As, Ba, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, V, Zn
SERD1 = Al, Ca, Fe, Mn

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE SILVER	CALIBRATE ANTIMONY	CALIBRATE ARSENIC	CALIBRATE CALCIUM	CALIBRATE LEAD	CALIBRATE SELENIUM	CALIBRATE THALLIUM	CALIBRATE ZINC
U0806436-074 SB13C								16.7J
U0806436-075 SB13D								17.7J
U0806436-076 SB13E								
U0806436-077 SB13F								
U0806436-078 SB14A	44.5J							
U0806436-079 SB14B								
U0806436-080 SB14C	2.9J							
U0806436-081 SB14D								
U0806436-082 SB14E								
U0806436-083 SB14F								
U0806436-084 SB15A								
U0806436-085 SB15B								
U0806436-086 SB15C								
U0806436-087 SB15D								
U0806436-088 SB15E	17.3J							
U0806436-089 SB15F								
U0806436-092 SB16A	28.5J							
U0806436-093 SB16B	8.9J							
U0806436-094 SB16C								
U0806436-095 SB16D	9.1J							
U0806436-096 SB16E	21.0J	UJ	UJ		UJ	UJ	22.9J	
U0806436-097 SB16F		UJ	UJ	116000J	2.2J	UJ	12.6J	
U0806436-098 SB17A		UJ	3.3J	58600J	10.1J	UJ	9.6J	
U0806436-099 SB17B		UJ	UJ	72400J	0.95J	UJ	11.8J	
U0806436-100 SB17C		UJ	UJ	47800J	2.3J	UJ	9.7J	
U0806436-101 SB17D		UJ	UJ		1.2J	UJ	15.3J	
U0806436-102 SB17E	12.3J	UJ	2.5J	62200J	1.7J	UJ	9.5J	
U0806436-104 SB18A		UJ	4.2J	86000J	9.5J	UJ	12.6J	
U0806436-105 SB18B		UJ	UJ		UJ	UJ	21.5J	
U0806436-106 SB18C		UJ	3.6J	70700J	4.0J	UJ	10.8J	
U0806436-107 SB18D								
U0806436-108 SB18E								

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE MERCURY	CRDL SELENIUM	CRDL ZINC	CDRL ARSENIC	CRDL MERCURY	BLANK SELENIUM	BLANKS LEAD	ICS SILVER	ICS BARIUM	ICS COPPER.
U0806436-074 SB13C					REJECT				REJECT	
U0806436-075 SB13D					REJECT				REJECT	
U0806436-076 SB13E					REJECT					
U0806436-077 SB13F					REJECT					
U0806436-078 SB14A					0.05J					
U0806436-079 SB14B					0.18J					
U0806436-080 SB14C					0.13J			2.9J	REJECT	
U0806436-081 SB14D					0.14J				REJECT	
U0806436-082 SB14E					0.12J					
U0806436-083 SB14F					0.12J					
U0806436-084 SB15A					0.41J				REJECT	
U0806436-085 SB15B					0.13J				REJECT	
U0806436-086 SB15C					REJECT				REJECT	
U0806436-087 SB15D					REJECT				REJECT	
U0806436-088 SB15E					REJECT					
U0806436-089 SB15F					REJECT					
U0806436-092 SB16A										
U0806436-093 SB16B					0.11J					
U0806436-094 SB16C					0.21J					
U0806436-095 SB16D					0.14J	REJECT				
U0806436-096 SB16E					0.14J			21.0J		53.5J
U0806436-097 SB16F					REJECT					26.7J
U0806436-098 SB17A					0.11J					
U0806436-099 SB17B					0.15J					
U0806436-100 SB17C					0.12J					
U0806436-101 SB17D					REJECT					26.6J
U0806436-102 SB17E					REJECT					
U0806436-104 SB18A					0.12J					
U0806436-105 SB18B					REJECT					2.4BJ
U0806436-106 SB18C		REJECT			REJECT					
U0806436-107 SB18D		REJECT			REJECT					
U0806436-108 SB18E		REJECT			REJECT					10.7J

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	SPIKE CYANIDE	SPIKE MANGANESE	SPIKE MERCURY	DUPES DUPE1	DUPES DUPE2	SER DIL SD2	SER DIL MANGANESE	HOLD TIME MERCURY
U0806436-074 SB13C				ALL J		ALL J/UJ		
U0806436-075 SB13D				ALL J		ALL J/UJ		
U0806436-076 SB13E				ALL J/BJ		ALL J/UJ/BJ		
U0806436-077 SB13F				ALL J		ALL J/UJ		
U0806436-078 SB14A				ALL J/UJ		ALL J/UJ		0.05J
U0806436-079 SB14B				ALL J/UJ/BJ		ALL J/UJ		0.18J
U0806436-080 SB14C				ALL J/UJ		ALL J/UJ		0.13J
U0806436-081 SB14D				ALL J		ALL J/UJ		0.14J
U0806436-082 SB14E				ALL J		ALL J/UJ		0.12J
U0806436-083 SB14F				ALL J/UJ		ALL J/UJ		0.12J
U0806436-084 SB15A				ALL J		ALL J/UJ		0.41J
U0806436-085 SB15B				ALL J		ALL J/UJ		0.13J
U0806436-086 SB15C				ALL J		ALL J/UJ		
U0806436-087 SB15D				ALL J		ALL J/UJ		
U0806436-088 SB15E				ALL J/UJ		ALL J/UJ		
U0806436-089 SB15F				ALL J/UJ		ALL J/UJ		
U0806436-092 SB16A				ALL J		ALL J/UJ		0.52J
U0806436-093 SB16B				ALL J/UJ		ALL J/UJ		0.11J
U0806436-094 SB16C				ALL J/UJ		ALL J/UJ		0.21J
U0806436-095 SB16D				ALL J/UJ		ALL J		0.14J
U0806436-096 SB16E	115J	285J			ALL J		285J	0.14J
U0806436-097 SB16F	UJ	534J			ALL J		534J	
U0806436-098 SB17A	UJ	523J	0.11J		ALL J		523J	0.11J
U0806436-099 SB17B	UJ	140J	0.15J		ALL J/UJ		140J	0.15J
U0806436-100 SB17C	14.2J	247J	0.12J		ALL J		247J	0.12J
U0806436-101 SB17D	UJ	403J			ALL J		403J	
U0806436-102 SB17E	UJ	1050J			ALL J		1050J	
U0806436-104 SB18A	UJ	339J	0.12J		ALL J		339J	0.12J
U0806436-105 SB18B	UJ	177J			ALL J/UJ		177J	
U0806436-106 SB18C	UJ	487J			ALL J/UJ		487J	
U0806436-107 SB18D	UJ	214J			ALL J/UJ		214J	
U0806436-108 SB18E	UJ	305J			ALL J/BJ		305J	

DUPE1 = Cu, Fe, Pb, Mg, Mn, Ni, Tl, Zn
DUPE2 = Mn, Hg, Ni, Zn
SD2 = Al, Pb, Mn, Se, Zn

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE SILVER	CALIBRATE ANTIMONY	CALIBRATE ARSENIC	CALIBRATE CALCIUM	CALIBRATE LEAD	CALIBRATE SELENIUM	CALIBRATE THALLIUM	CALIBRATE ZINC
U0806436-109 SB19A								
U0806436-110 SB19B								
U0806436-111 SB19C								
U0806436-112 SB19D								
U0806436-113 SB19E								
U0806436-114 SB20A								
U0806436-115 SB21A	3.1J							
U0806436-116 SB21B								
U0806436-069 SB12C		UJ						
U0806436-070 SB12D		UJ						
U0806436-071 SB12E		UJ						91.2J
U0806436-072 SB13A		UJ						185J
U0806436-073 SB13B		UJ						30.8J
U0806436-117 SB21C		UJ						16.7J
U0806436-118 SB21D		UJ						17.7J
U0806436-119 SB21E		UJ						50.6J
U0806436-120 SB22A		3.8BJ						3710J
U0806436-121 SB22B		UJ						640J
U0806436-122 SB22C		UJ						43.6J
U0806436-123 SB22D	3.5J	UJ						66.1J
U0806436-124 SB22E	70.7J	UJ	4.0J					44.8J
U0806436-125 SB22F		UJ	2.8J					30.3J
U0806436-126 SB23A		9.3BJ	248J			7.5J		117J
U0806436-127 SB23B	2.5J	UJ	15.5J					115J
U0806436-128 SB23C		UJ	7.0J					1710J

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE MERCURY	CRDL SELENIUM	CRDL ZINC	CDRL ARSENIC	CRDL MERCURY	BLANK SELENIUM	BLANKS LEAD	ICS SILVER	ICS BARIUM	ICS COPPER.
U0806436-109 SB19A		REJECT			0.15J					
U0806436-110 SB19B		REJECT			0.11J					
U0806436-111 SB19C		REJECT			REJECT					14.2J
U0806436-112 SB19D		REJECT			REJECT					10.7J
U0806436-113 SB19E		REJECT			REJECT					16.1J
U0806436-114 SB20A		REJECT			REJECT					
U0806436-115 SB21A		REJECT			0.19J					
U0806436-116 SB21B		REJECT			0.14J					7.5J
U0806436-069 SB12C			32.2J							
U0806436-070 SB12D			76.1J							
U0806436-071 SB12E			91.2J							
U0806436-072 SB13A			185J							
U0806436-073 SB13B			30.8J							
U0806436-117 SB21C			34.8J							
U0806436-118 SB21D			19.0J							
U0806436-119 SB21E			50.6J							
U0806436-120 SB22A			3710J							
U0806436-121 SB22B			640J							
U0806436-122 SB22C			43.6J							
U0806436-123 SB22D			66.1J							
U0806436-124 SB22E			44.8J							
U0806436-125 SB22F			30.3J					3.6J		
U0806436-126 SB23A			117J							
U0806436-127 SB23B			115J							
U0806436-128 SB23C			1710J							

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	SPIKE CADMIUM	SPIKE CHROMIUM	SPIKE COPPER	SPIKE CYANIDE	SPIKE MANGANESE	SPIKE NICKEL	SPIKE SILVER	SPIKE MERCURY	SPIKE ARSENIC	SPIKE ZINC.
U0806436-109 SB19A				UJ	349J			0.15J		
U0806436-110 SB19B				UJ	328J			0.11J		
U0806436-111 SB19C				UJ	581J					
U0806436-112 SB19D				UJ	345J					
U0806436-113 SB19E				UJ	849J					
U0806436-114 SB20A				UJ	321J					
U0806436-115 SB21A				UJ	81.2J			0.19J		
U0806436-116 SB21B				UJ	451J			0.14J		
U0806436-069 SB12C	REJECT	REJECT	12.0J		362J	8.3J			UJ	32.2J
U0806436-070 SB12D	REJECT	REJECT	23.3J		596J	26.7J			2.8J	76.1J
U0806436-071 SB12E	REJECT	REJECT	25.8J		549J	28.0J			4.3J	91.2J
U0806436-072 SB13A	REJECT	REJECT	47.4J		493J	33.7J			8.8J	185J
U0806436-073 SB13B	REJECT	REJECT	13.7J		470J	10.5J			UJ	30.8J
U0806436-117 SB21C	REJECT	REJECT	19.7J		377J	14.0J			UJ	34.8J
U0806436-118 SB21D	REJECT	REJECT	6.4J		265J	UJ			UJ	19.0J
U0806436-119 SB21E	REJECT	REJECT	15.4J		363J	39.4J			UJ	50.6J
U0806436-120 SB22A	REJECT	REJECT	106J	2.0J	474J	91.0J			28.9J	3710J
U0806436-121 SB22B	REJECT	REJECT	43.6J	19.3J	331J	129J			UJ	640J
U0806436-122 SB22C	REJECT	REJECT	20.3J		266J	112J			UJ	43.6J
U0806436-123 SB22D	REJECT	REJECT	271J	4.3J	600J	801J	3.5J		4.0J	66.1J
U0806436-124 SB22E	REJECT	REJECT	158J	6.1J	276J	402J	70.7J		2.8J	44.8J
U0806436-125 SB22F	REJECT	REJECT	18.5J		464J	92.3J	3.6J		UJ	30.3J
U0806436-126 SB23A	REJECT	REJECT	140J		136J	UJ			248J	117J
U0806436-127 SB23B	REJECT	REJECT	91.2J	1.2J	477J	38.9J	2.5J		15.5J	115J
U0806436-128 SB23C	REJECT	REJECT	105J	6.1J	2380J	113J			7.0J	1710J

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	SPIKE BARIUM	DUPES DUPE2	DUPES DUPE3	SER DIL MANGANESE	SER DIL SD3	HOLD TIME MERCURY
U0806436-109 SB19A		ALL J		349J		0.15J
U0806436-110 SB19B		ALL J		328J		0.11J
U0806436-111 SB19C		ALL J		581J		
U0806436-112 SB19D		ALL J		345J		
U0806436-113 SB19E		ALL J		849J		
U0806436-114 SB20A		ALL J		321J		
U0806436-115 SB21A		ALL J		81.2J		0.19J
U0806436-116 SB21B		ALL J		451J		0.14J
U0806436-069 SB12C	19.8BJ		ALL J/UJ/BJ		ALL J	
U0806436-070 SB12D	128J		ALL J/UJ		ALL J	
U0806436-071 SB12E	150J		ALL J/UJ		ALL J	
U0806436-072 SB13A	104J		ALL J/UJ		ALL J	
U0806436-073 SB13B	26.2BJ		ALL J/UJ/BJ		ALL J	
U0806436-117 SB21C	18.7BJ		ALL J/UJ/BJ		ALL J	
U0806436-118 SB21D	16.1BJ		ALL J/UJ/BJ		ALL J	0.052J
U0806436-119 SB21E	31.5BJ		ALL J/UJ/BJ		ALL J	0.057J
U0806436-120 SB22A	102J		ALL J/UJ		ALL J	0.53J
U0806436-121 SB22B	22.2BJ		ALL J/UJ/BJ		ALL J	0.068J
U0806436-122 SB22C	390J		ALL J/UJ/BJ		ALL J/UJ	UJ
U0806436-123 SB22D	47.4J		ALL J/UJ		ALL J	UJ
U0806436-124 SB22E	24.1BJ		ALL J/UJ/BJ		ALL J	UJ
U0806436-125 SB22F	28.7BJ		ALL J/UJ/BJ		ALL J/UJ	UJ
U0806436-126 SB23A	443J		ALL J/UJ/BJ		ALL J	2.3J
U0806436-127 SB23B	24.4BJ		ALL J/UJ/BJ		ALL J	0.057J
U0806436-128 SB23C	60.7J		ALL J/UJ/BJ		ALL J	UJ

DUPE2 = Mn, Hg, Ni, Zn

DUPE3 = Al, As, Ba, Cd, Cr, Cu, Fe, Pb, Mg, Ag, Mn, Hg, Tl, V

SD3 = Fe, Pb, Mn, Zn

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE SILVER	CALIBRATE ANTIMONY	CALIBRATE ARSENIC	CALIBRATE CALCIUM	CALIBRATE LEAD	CALIBRATE SELENIUM	CALIBRATE THALLIUM	CALIBRATE ZINC
U0806436-129 SB23D								306J
U0806436-130 SB23E								308J
U0806436-131 SB23F								434J
U0806436-132 SB24A			8.2J					98.8J
U0806436-133 SB24B								19.4J
U0806436-134 SB24C								12.2J
U0806436-135 SB24D								626J
U0806436-136 SB24E								361J
U0806436-137 SB25A								79.0J
U0806436-138 SB25B			5.6J					12.3J
U0806436-139 SB25C								18.1J
U0806436-140 SB25D								356J
U0806436-141 SB25E								498J
U0806436-142 SB26A			13.9J					94.0J
U0806436-143 SB26B								24.3J
U0806436-144 SB26C								31.8J
U0806436-145 SB26D								227J
U0806436-146 SB26E	2.6J							5190J
U0806436-147 SB27A	3.3J							4960J
U0806436-148 SB27B								416J
U0806436-149 SB27C	3.6J							
U0806436-150 SB27D	2.9J							
U0806436-151 SB27E	4.8J							
U0806436-152 SB28A	3.9J							
U0806436-153 SB28B								
U0806436-154 SB28C	2.2J							
U0806436-155 SB28D								
U0806436-156 SB28E								
U0806436-157 SB28F								
U0806436-158 SB29A	6.6J							
U0806436-159 SB29B								
U0806436-160 SB29C								

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE MERCURY	CRDL SELENIUM	CRDL ZINC	CDRL ARSENIC	CRDL MERCURY	BLANK SELENIUM	BLANKS LEAD	ICS SILVER	ICS BARIUM	ICS COPPER.
U0806436-129 SB23D			306J							61.6J
U0806436-130 SB23E		UJ	308J							
U0806436-131 SB23F		UJ	434J							
U0806436-132 SB24A		UJ	98.8J							
U0806436-133 SB24B		UJ	19.4J							7.3J
U0806436-134 SB24C		UJ	12.2J					2.4J		6.0J
U0806436-135 SB24D		UJ	626J							
U0806436-136 SB24E		UJ	361J					3.4J		21.2J
U0806436-137 SB25A		UJ	79.0J							
U0806436-138 SB25B		UJ	12.3J							
U0806436-139 SB25C		UJ	18.1J							
U0806436-140 SB25D		UJ	356J				REJECT			
U0806436-141 SB25E		UJ	498J				REJECT			66.0J
U0806436-142 SB26A		UJ	94.0J							
U0806436-143 SB26B		UJ	24.3J				REJECT			14.3J
U0806436-144 SB26C		UJ	31.8J				REJECT			
U0806436-145 SB26D		UJ	227J				REJECT			
U0806436-146 SB26E		UJ	5190J							
U0806436-147 SB27A		UJ	4960J				REJECT	3.3J		69.2J
U0806436-148 SB27B		UJ	416J				REJECT			
U0806436-149 SB27C										
U0806436-150 SB27D										
U0806436-151 SB27E								4.8J		159J
U0806436-152 SB28A										
U0806436-153 SB28B										9.7J
U0806436-154 SB28C								3.2J		4.5BJ
U0806436-155 SB28D										
U0806436-156 SB28E										
U0806436-157 SB28F										
U0806436-158 SB29A										
U0806436-159 SB29B										
U0806436-160 SB29C										

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	SPIKE MANGANESE	MISSING SPIKE	DUPES DUPE1	MISSING DUPE	MISSING SER DILUTE	HOLD TIME MERCURY	HOLD TIME CYANIDE
U0806436-129 SB23D	283J		ALL J		ALL POS J/BJ	UJ	
U0806436-130 SB23E	163J		ALL J		ALL POS J	UJ	
U0806436-131 SB23F	243J		ALL J		ALL POS J/BJ	0.14J	
U0806436-132 SB24A	577J		ALL J		ALL POS J/BJ	0.15J	
U0806436-133 SB24B	342J		ALL J/UJ		ALL POS J/BJ	UJ	
U0806436-134 SB24C	351J		ALL J/UJ		ALL POS J/BJ	UJ	
U0806436-135 SB24D	498J		ALL J		ALL POS J/BJ	UJ	
U0806436-136 SB24E	205J		ALL J		ALL POS J/BJ	UJ	
U0806436-137 SB25A	260J		ALL J		ALL POS J/BJ	0.14J	
U0806436-138 SB25B	347J		ALL J/BJ		ALL POS J/BJ	UJ	
U0806436-139 SB25C	290J		ALL J/UJ		ALL POS J/BJ	UJ	
U0806436-140 SB25D	265J		ALL J		ALL POS J/BJ	UJ	
U0806436-141 SB25E	286J		ALL J		ALL POS J/BJ	UJ	
U0806436-142 SB26A	329J		ALL J		ALL POS J/BJ	0.13J	UJ
U0806436-143 SB26B	394J		ALL J		ALL POS J/BJ	UJ	UJ
U0806436-144 SB26C	279J		ALL J/BJ		ALL POS J/BJ	UJ	UJ
U0806436-145 SB26D	1130J		ALL J		ALL POS J/BJ	UJ	UJ
U0806436-146 SB26E	318J		ALL J		ALL POS J/BJ	UJ	12.9J
U0806436-147 SB27A	632J		ALL J		ALL POS J/BJ	19.4J	11.1J
U0806436-148 SB27B	673J		ALL J		ALL POS J/BJ	17.8J	1.3J
U0806436-149 SB27C		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	4.0J	4.1J
U0806436-150 SB27D		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	2.9J	48.6J
U0806436-151 SB27E		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	19.8J	31.1J
U0806436-152 SB28A		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	0.95J	3.6J
U0806436-153 SB28B		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	UJ	UJ
U0806436-154 SB28C		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	UJ	UJ
U0806436-155 SB28D		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	0.55J	UJ
U0806436-156 SB28E		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	UJ	1.1BJ
U0806436-157 SB28F		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	0.32J	0.32J
U0806436-158 SB29A		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	0.26J	3.6J
U0806436-159 SB29B		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	0.088J	UJ
U0806436-160 SB29C		ALL J/UJ		ALL J/UJ/BJ	ALL POS J/BJ	0.13J	UJ

DUPE1 = Cr, Pb, Mg, Mn, Ni

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE SILVER	CALIBRATE ANTIMONY	CALIBRATE ARSENIC	CALIBRATE CALCIUM	CALIBRATE LEAD	CALIBRATE SELENIUM	CALIBRATE THALLIUM	CALIBRATE ZINC
U0806436-161 SB29D								
U0806436-162 SB29E	4.0J							
U0806436-163 SB29F	3.0J							
U0806436-164 SB30A								
U0806436-165 SB30B								
U0806436-166 SB30C								
U0806436-167 SB30D								
U0806436-168 SB30E	3.7J							
U0806436-169 SB30F								
U0806436-170 DUP5								
U0806436-171 DUP6								
U0806436-172 DUP7	50.3J							
U0806436-174 DUP9								
U0806436-177 SB31A								
U0806436-178 SB31B	2.5J							
U0806436-179 SB31C	3.0J							
U0806436-180 SB31D								
U0806436-181 SB31E								

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

	CALIBRATE MERCURY	CRDL SELENIUM	CRDL ZINC	CDRL ARSENIC	CRDL MERCURY	BLANK SELENIUM	BLANKS LEAD	ICS SILVER	ICS BARIUM	ICS COPPER.
U0806436-161 SB29D										11.6J
U0806436-162 SB29E								4.0J		22.9J
U0806436-163 SB29F								3.0J		20.8J
U0806436-164 SB30A										
U0806436-165 SB30B										
U0806436-166 SB30C		REJECT								6.0J
U0806436-167 SB30D		REJECT								
U0806436-168 SB30E		REJECT						3.7J		9.9J
U0806436-169 SB30F		REJECT								
U0806436-170 DUP5		REJECT								
U0806436-171 DUP6		REJECT								
U0806436-172 DUP7	1.9J	REJECT								
U0806436-174 DUP9		REJECT								21.5J
U0806436-177 SB31A	4.6J	REJECT								
U0806436-178 SB31B		REJECT						2.5J		64.5J
U0806436-179 SB31C		REJECT								
U0806436-180 SB31D		REJECT								
U0806436-181 SB31E		REJECT								7.2J

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Soil Samples
SDG: DEC 63
Sampled June 2008

PESTICIDES/PCB

SB-1E	(U0806436-005)	SB-2F	(U0806436-011)	DUPE1	(U0806436-017)
SB-3F	(U0806436-018)	SB-4F	(U0806436-024)	SB-5D	(U0806436-028)
SB-6E	(U0806436-034)	SB-7E	(U0806436-039)	SB-8E	(U0806436-045)
DUPE2	(U0806436-046)	SB-9E	(U0806436-053)	SB-10F	(U0806436-059)
SB-11E	(U0806436-064)	SB-12D	(U0806436-070)	SB-13E	(U0806436-076)
SB-14E	(U0806436-082)	SB-15E	(U0806436-088)	SB-16E	(U0806436-096)
SB-17E	(U0806436-102)	SB-18E	(U0806436-108)	SB-19E	(U0806436-113)
SB-21E	(U0806436-119)	SB-22E	(U0806436-124)	SB-23F	(U0806436-131)
SB-24E	(U0806436-136)	SB-25E	(U0806436-141)	SB-26E	(U0806436-146)
SB-27E	(U0806436-151)	SB-28E	(U0806436-156)	SB-29D	(U0806436-161)
SB-30E	(U0806436-168)	SB-31D	(U0806436-180)		

DATA ASSESSMENT

A Pesticide/PCB data package containing analytical results for thirty-two soil samples was received from Upstate Laboratories, Inc., on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 8081 and 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-6,Rev 8, CLP Organics Data Review and Preliminary Review, Jan. 1992) was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of a complete validation process. Reported data that has been qualified as an estimation due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

This group of samples was diluted 1:25 prior to analysis. This resulted in the dilution of the surrogate additions to each sample, and the spikes to both MS/MSD pairs. The resulting concentrations were reduced to levels that could not be detected. The results reported from this group of samples have been qualified as estimations because QC measurements demonstrating measurement accuracy and precision were completely absent.

The method blank associated with the extraction and analysis of SB-2F, DUPE1, SB-3F, SB-4F, SB-5D, SB-6E, SB-7E, SB-8E, DUPE2, SB-9E, SB-10F, SB-11E and SB-12D produced unacceptably low surrogate recoveries. The blank was later reanalyzed, producing acceptable recoveries. The results reported from the associated samples have been qualified as estimations because the samples were not reanalyzed with the blank.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, and completely usable in its present form. Results providing a usable estimation of the conditions being measured have been flagged "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 19Apr09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt. Samples must remain chilled to 4°C between the time of collection and the time of analysis. Extractions of aqueous samples must be completed within 5 days of receipt, soils within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained 32 soil samples that were collected from the H.M. Quackenbush Site between 19Jun08 and 02Jul08. In most cases, the samples were delivered to the laboratory within two days of collection. Although the 17 samples collected on 20Jun08 were held in the field for three days, the custody record indicates that they were refrigerated between 20Jun08 and 21Jun08. Similarly, SB-31D was collected on 02Jul08 but not received by the laboratory until 07Jul08. This sample was refrigerated until the day it was delivered to the laboratory. The laboratory record indicates that, although cooler temperatures were not recorded, each group of samples was properly chilled to 4°C at the time of receipt. Although the five days that SB-31D was held prior to delivery is considered excessive, the total time between sampling and extraction was 11 days. Data qualifications are not required.

Several areas are noted where the custody records for this group of samples were inaccurate or incomplete. The field Chain of Custody indicates that samples SB-1E and SB-2F were collected on 20Jun08. The dates documenting transfers of these samples, however, indicate that the date of collection was 19Jun08. The laboratory's Sample Receipt Check List for samples received on 25Jun08 was not included in the date package, and the laboratory's internal custody chain did not include SB-31D. Data has not been qualified due to these lapses in documentation because the technical quality of the reported results was not impacted. However, it must be noted that analytical results cannot be considered legally defensible if the custody of the samples cannot be traced between the time of collection and the time of analysis.

It is noted that SB-23F was identified incorrectly as SB-23E on Form 1. The sample was identified correctly by Lab ID (806436-131). The identification on Form 1 has been corrected.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified.

Three method blanks were extracted with this group of samples and analyzed for Pesticides and PCB. Each of these blanks demonstrated acceptable chromatography and was free of targeted analyte contamination.

It is noted that MB-14298 was analyzed on 08Jul08, and again on 09Jul08. The initial analysis of this blank produced surrogate recoveries that ranged between 0% and 11% on both chromatographic columns. The repeated analysis of MB-14298 produced acceptable surrogate performance. The samples associated with the initial analysis of this blank were not reanalyzed. Because the surrogates were diluted out of these samples, it cannot be determined if these samples were exposed to the same conditions that caused poor surrogate performance in the blank. The Pest/PCB results reported from SB-2F, DUPE1, SB-3F, SB-4F, SB-5D, SB-6E, SB-7E, SB-8E, DUPE2, SB-9E, SB-10F, SB-11E and SB-12D have been qualified as estimations based on this observation.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for Pest/PCB was performed on 19Jun08 and 20Jun08. This calibration included 5 levels of concentration for each single component pesticide, and five representative peaks of Toxaphene, AR-1016 and AR-1260. The standards of each of these components demonstrated acceptable levels of response and linearity. The Performance Evaluation Mixture (PEM), Resolution Standards (RES) and each single component standard demonstrated acceptable levels of chromatographic resolution. Single point calibrations were performed for the remaining targeted Aroclors.

Program samples were analyzed in analysis sequences that were initiated on 08Jul08, 09Jul08 and 21Jul08. Each of these sequences were bracketed by clean instrument blanks, PEM, single component pesticide standards (INDA-M, INDB-M) and standards of

AR-1016 and AR-1260. Each of these checks produced chromatographic peaks that eluted at the correct retention times, that demonstrated an acceptable level of resolution, and produced acceptable levels of analyte recovery. The PEM also produced acceptable levels of DDT and Endrin breakdown. Acceptable calibration performance was demonstrated.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Two surrogates, tetrachloro-m-xylene and decachlorobiphenyl were added to every program sample. Each sample, however, was also diluted 1:25. This reduced the surrogate additions to an undetectable level. Because an initial undiluted analysis of each sample was not provided, and because the reason for these dilutions was not immediately obvious, the PEST/PCB results from this project have been qualified as estimations.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to extraction and analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

SB-5D and SB-10F were selected for matrix spiking. Duplicate spikes of six single component pesticides were added to each of these samples. Each spiked sample, however, was diluted 1:25 following these additions. The dilutions reduced the concentration of each spiked analyte to a non-detectable level. The spiked samples, therefore, provided no indication of measurement accuracy or precision.

Three spiked blanks were also analyzed with this group of samples. Each spiked blank produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although field split duplicates were included in this group of samples, they were not identified.

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Aqueous Samples
SDG: DEC 69
Sampled July 2008

VOLATILE ORGANICS

MW-2	(U0808008-01)	MW-3	(U0808008-02)
MW-4	(U0808008-03)	MW-6	(U0808008-04)
MW-7	(U0808008-05)	MW-8	(U0808008-06)
MW-9	(U0808008-07)	MW-10	(U0808008-08)
MW-11	(U0808008-09)	MW-12	(U0808008-10)
MW-13	(U0808008-11)	DEC-1	(U0808008-12)
DEC-2	(U0808008-13)	MW-5	(U0808008-14)
DUPE	(U0808008-15)		

DATA ASSESSMENT

A volatile organics data package containing analytical results for fifteen aqueous samples, a trip blank, and a holding blank was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Method 8260B, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-24, Rev 2, October 2006 , Validating Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8260B was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of a complete validation process. Reported data that has been qualified as an estimation due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results that are considered a usable estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19Apr09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Acid preserved VOA samples must be analyzed within 12 days of VTSR, unpreserved samples within 5 days. The holding time for soils is 12 days.

This sample delivery group contained 15 aqueous samples, a trip blank, and a holding blank that were collected from the H.M. Quachenbush site by OPTECH Environmental on 30Jul08. They were delivered to the laboratory on 31Jul08. The Sample Receipt Check List indicated that the samples were received intact and properly chilled. A check at the time of analysis indicated that each sample except MW-2 and MW-13 had been properly stabilized. MW-2 and MW-13 produced a pH=3. The results from this pair of samples have been qualified as estimations because they were not analyzed within the holding time allowed for unpreserved samples. The analysis of the remaining samples from this project was completed within the ASP holding time limitation.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified. The qualification criteria is extended to ten times the concentration observed in blanks for common laboratory artifacts. These include acetone, methylene chloride and 2-butanone. Chloroform is also frequently present as a laboratory artifact.

Three method blanks, a trip blank, and a holding blank were analyzed with this group of samples. Each of these blanks demonstrated acceptable chromatography and was free of targeted analytes and laboratory artifacts.

It is noted that acetone was detected in MW-9. Because this analyte is frequently present as a laboratory artifact, this concentration has been qualified as an estimation. It has not been removed from Form 1 because acetone was not detected in the associated blanks.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of BFB was analyzed prior to each analytical sequence and during every 12-hour period of instrument operation. An Instrument Performance Check Form is present for each BFB evaluation. The BFB tunes associated with this group of samples satisfied the program acceptance criteria.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration check standards verify instrument stability.

The initial instrument calibration was performed on 10Aug08. Standards of 3, 10, 20, 50, 100 and 200 µg/l were included. During this calibration each targeted analyte produced the required minimum levels of instrument response and demonstrated an acceptable degree of linearity.

Continuing calibration checks were performed on 10Aug08 and 11Aug08, prior to each twelve-hour period of instrument operation that included samples from this program. When compared to the initial calibration, these checks demonstrated an acceptable level of instrument stability.

One exception is noted. During the 20:45 check on 11Aug08 trichloroethene failed to produce the required minimum level of instrument response. The trichloroethene (TCE) results from MW-12, MW-13, DEC-1, DEC-2, MW-5 and the Field Duplicate have been qualified as estimations due to this performance.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Summary Sheets were properly prepared, the correct acceptance criteria applied. When compared to the ASP requirements, each surrogate addition to this group of samples produced an acceptable recovery.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of two. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to these limits, acceptable internal standard performance was observed.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

MW-5 was selected for matrix spiking. The correct analytes were added to two aliquots of each of this sample. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

Three aqueous spiked blanks were also analyzed with this group of samples. Each of these standards also produced acceptable recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although a field split duplicate sample was included in this delivery group, it was not identified.

REPORTED ANALYTES

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations, and CRDL's have been adjusted to reflect sample size.

Tentatively Identified Compounds (TIC) were reported. When necessary, based on the mass spectra library searches included in the raw data, the list of TIC's has been edited to reflect more appropriate identifications. MW-3 and MW-4 were affected.

It is noted that DEC-2 was diluted 1/20 prior to analysis. A reason for this addition was not apparent.

SUMMARY OF QUALIFIED DATA

H.M. Quackenbush Site

Sampled July 2008

	PRESERVE	CALIBRATE TCE	SPECTRA ID TIC	BLANK ACETONE
MW-2 (U0808008-01)	ALL J/UJ			
MW-3 (U0808008-02)			EDIT	
MW-4 (U0808008-02)			EDIT	
MW-6 (U0808008-04)				
MW-7 (U0808008-05)				
MW-8 (U0808008-06)				
MW-9 (U0808008-07)				12J
MW-10 (U0808008-08)				
MW-11 (U0808008-09)				
MW-12 (U0808008-10)		2J		
MW-13 (U0808008-11)	ALL J/UJ	4J		
DEC-1 (U0808008-12)		UJ		
DEC-2 (U0808008-13)		UJ		
MW-5 (U0808008-14)		UJ		
DUPE (U0808008-15)		UJ		

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Aqueous Samples
SDG: DEC 69
Sampled July 2008

SEMIVOLATILE ORGANICS

MW-2	(U0808008-01)	MW-3	(U0808008-02)
MW-6	(U0808008-04)	MW-7	(U0808008-05)
MW-8	(U0808008-06)	MW-9	(U0808008-07)
MW-10	(U0808008-08)	MW-11	(U0808008-09)
MW-12	(U0808008-10)	MW-13	(U0808008-11)
DEC-1	(U0808008-12)	MW-5	(U0808008-14)
DUPE	(U0808008-15)		

DATA ASSESSMENT

A semivolatile organics data package containing analytical results for thirteen aqueous samples was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Method '8270D, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOP HW-22, Rev 3, October 2006, Validating Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry SW-846 Method 8270D was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of the complete validation process.

Reported data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible and completely usable in its present form. Results that are considered an estimation of the conditions being measured have been flagged "J" or "UJ". Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed all QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly. DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B Baldwin Date: 19Apr09
James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt (VTSR). Samples must remain chilled to 4°C between the time of collection and the time of analysis. Extractions of aqueous samples must be completed within 5 days of receipt, soils within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained 13 aqueous samples that were collected from the H.M. Quachenbush site by OPTECH Environmental on 30Jul08. They were delivered to the laboratory on 31Jul08. The Sample Receipt Check List indicated that the samples were received intact and properly chilled. The entire group of samples was extracted on 02Aug08. Analyses were completed on 02Sep08 and 03Sep08. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified. The qualification criteria is extended to ten times the concentration observed in blanks for common laboratory artifacts. These include phthalate esters.

One method blank was analyzed with this group of samples. Although this blank produced acceptable chromatography, SBLK01 contained a trace of bis(2-ethylhexyl)phthalate. A similar artifact was observed throughout this group of samples. When present, the phthalate artifact should be interpreted as undetected. The method blank also contained several Tentatively identified compounds. These have also been removed from the affected sample reports.

Although not present in the blank, di-n-butylphthalate was detected in MW-9 and MW-13. This phthalate has been flagged as an estimation because it is likely that it also represents a laboratory artifact. It has not been removed from the affected reports because it was not present in the blank.

MS TUNING

Mass spectrometer tuning and performance criteria are established to ensure sufficient mass resolution and sensitivity to accurately detect and identify targeted analytes. Verification is accomplished using a certified standard.

An Instrument Performance Check Standard of DFTPP was analyzed prior to each analytical sequence and during every 12-hour period of instrument operation. An Instrument Performance Check Form is present for each DFTPP evaluation. The DFTPP tunes associated with this group of samples included an elevated response to z/m=442 on 02Sep08 and 03Sep08. There is no evidence that these issues had any effect on reported data. The associated samples have been left unqualified.

A very high response was also reported for z/m=68 on 02Sep08. In this case, however, it appears that the response of the wrong mass fragment was reported. Again, because there was no evidence of an impact to reported data, data qualifications are not indicated.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration was performed on 15Aug08. During this calibration 2-methylphenol and bis(2-chloroethoxy)methane failed to produced the required minimum levels of instrument response. The 2-methylphenol and bis(2-chloroethoxy)methane results from this group of samples have been qualified as estimations based on this performance. A separate calibration for 3,3'-dichlorobenzidine was performed on 25Jun08. This calibration was completed successfully.

Continuing calibration verifications were performed on 02Sep08 and 03Sep08, prior to the analysis of program samples. When compared to the initial calibration, an unacceptable shift was observed in the response of 4-nitroaniline on 02Sep08. The 4-nitroaniline results from the associated samples, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, DEC-1 and MW-5, have been qualified as estimations.

Unacceptable shifts were observed in the response of bis(2-chloroethyl)ether, 2,4-dinitrotoluene, 4-nitroaniline and fluoranthene on 03Sep08. These analytes have been qualified as estimations in MW-2, MW-3, the Field Duplicate and the repeated analyses of MW-7 and MW-10.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Surrogate Summary Sheets were properly prepared, the correct acceptance criteria applied. With the exception of the additions to MW-2 and MW-3, no more than one acid and one base/neutral surrogate produced an unacceptable recovery in a sample of this program. Two base/neutral surrogates produced unacceptably low recoveries in MW-2 and MW-3. The base/neutral fractions of this pair of samples have been qualified as estimations due to this performance.

INTERNAL STANDARDS

Internal standards are added to each sample, blank and standard just prior to injection. Analyte concentrations are calculated relative to the response of a specific internal standard. Internal standard performance criteria ensure that GC/MS sensitivity and response are stable during the analysis of each sample. The area of internal standard peaks may not vary by more than a factor of 2. When compared to the preceding calibration check, retention times may not vary by more than 30 seconds.

The laboratory correctly calculated control limits for internal standard response and retention times. When compared to the calculated criteria, an unacceptable response was observed for the perylene-d12 additions to MW-7, MW-10 and the Field Duplicate. MW-7 and MW-10 were reanalyzed, producing a similar result. The analytes dependant upon the response of perylene-d12 have been qualified as estimations in the three affected samples. It is noted that the results from the initial analysis of MW-7 and MW-10 should be included in data tables.

MATRIX SPIKES

Matrix spiking refers to the addition of known analyte concentrations to a sample, prior to extraction and analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

MW-5 was selected for matrix spiking. The required analytes were added to two portions of this sample. The recoveries reported for these spikes demonstrated acceptable levels of measurement accuracy and precision. It is noted that recoveries of 112% were reported for both additions of 2,4-dinitrotoluene. Although above the range of acceptance, this performance does not warrant data qualifications.

Two spiked blanks (LCS) were also extracted and analyzed with this group of samples. Although these standards produced high recoveries 4-nitrophenol (104%,101%) and 2,4-dinitrotoluene (106%,108%), this performance, alone, does not require data qualifications.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced

by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects or poor laboratory technique.

Although field split duplicates were included in this group of samples, they were not identified.

SAMPLE INFORMATION

Formal reports were provided for each sample. The data package also included total ion chromatograms and raw instrument printouts. Reference mass spectra were provided to confirm the identification of each analyte that was detected in this group of samples. Reported concentrations have been adjusted to reflect sample size.

Tentatively Identified Compounds (TIC) were reported. When these identifications were not conclusive, based on the library searches included in the raw data, Form 1F has been corrected. MW-2 and MW-3 were affected.

SUMMARY OF QUALIFIED DATA

H.K. Quackenbush Site

Sampled July 2008

	BLANK PHTHALATE	BLANK TICs	BLANK DI-N-BUTYLPHTHALATE	CALIBRATE CAL1	CALIBRATE CAL2	CALIBRATE CAL3	SURROGATE B/N FRACTION
MW-2 (U0808008-01)	20U			ALL UJ		ALL UJ	ALL UJ
MW-3 (U0808008-02)				ALL UJ		ALL UJ	ALL UJ
MW-6 (U0808008-04)		REMOVE		ALL UJ	UJ		
MW-7 (U0808008-05)	10U			ALL UJ	UJ		
MW-8 (U0808008-06)				ALL UJ	UJ		
MW-9 (U0808008-07)	40U		11J	ALL UJ	UJ		
MW-10 (U0808008-08)	10U			ALL UJ	UJ		
MW-11 (U0808008-09)				ALL UJ	UJ		
MW-12 (U0808008-10)	10U	REMOVE		ALL UJ	UJ		
MW-13 (U0808008-11)	10U		1J	ALL UJ	UJ		
DEC-1 (U0808008-12)				ALL UJ	UJ		
MW-5 (U0808008-14)		REMOVE		ALL UJ	UJ		
DUPE (U0808008-15)		REMOVE		ALL UJ		ALL UJ	

CAL1 = 2-methylphenol, bis(2-chloroethoxy)methane
CAL2 = 4-nitroaniline
CAL3 = bis(2-chloroethyl)ether, 2,4-dinitrotoluene, 4-nitroaniline, fluoranthene

SUMMARY OF QUALIFIED DATA

H.K. Quackenbush Site

Sampled July 2008

		INT STD IS6	SPECTRA ID TIC
MW-2	(U0808008-01)		CORRECT
MW-3	(U0808008-02)		CORRECT
MW-4	(U0808008-02)		
MW-6	(U0808008-04)		
MW-7	(U0808008-05)	ALL UJ	
MW-8	(U0808008-06)		
MW-9	(U0808008-07)		
MW-10	(U0808008-08)	ALL UJ	
MW-11	(U0808008-09)		
MW-12	(U0808008-10)		
MW-13	(U0808008-11)		
DEC-1	(U0808008-12)		
DEC-2	(U0808008-13)		
MW-5	(U0808008-14)		
DUPE	(U0808008-15)	ALL UJ	

IS6 = di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene dibenz(a,h)anthracene, benzo(g,h,i)perylene

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Aqueous Samples
SDG: DEC 69
Sampled July 2008

METALS

MW-2	(U0808008-01)	MW-3	(U0808008-02)
MW-6	(U0808008-04)	MW-7	(U0808008-05)
MW-8	(U0808008-06)	MW-9	(U0808008-07)
MW-10	(U0808008-08)	MW-11	(U0808008-09)
MW-12	(U0808008-10)	MW-13	(U0808008-11)
DEC-1	(U0808008-12)	MW-5	(U0808008-14)
DUPE	(U0808008-15)		

DATA ASSESSMENT

An inorganics data package containing analytical results for 13 aqueous samples was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methodologies, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2006, Validation of Metals for the Contract Laboratory Program) was used as a technical reference.

To prepare this Data Usability Summary Report, it was assumed that the laboratories calculations were correct. This assumption is based on the laboratory's ASP certifications. Beyond that assumption, the remainder of the validation process was unchanged.

Data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, and completely usable in its present form. Data providing a usable estimation of the conditions existing at the time of sampling has been flagged "J", "UJ" and "BJ". Data that is felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19Apr09

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt; cyanide 12 days. The remaining metals must be digested and analyzed within 180 days of receipt.

This sample delivery group contained 13 aqueous samples that were collected from the H.M. Quachenbush site by OPTECH Environmental on 30Jul08. They were delivered to the laboratory on 31Jul08. The samples were received intact and properly chilled. The Sample Receipt Check List indicated that the samples were properly preserved at the time of receipt.

A notation on the Field Custody Record indicated that the samples were to be filtered in the laboratory prior to analysis. The record also indicates that the metal samples were acid preserved in the field. It should be noted that this handling would not provide a measurement of dissolved metals. The results would be positively biased by any metals that were leached from the particulate matter that was later filtered from the samples. It is also noted that there is no documentation in the laboratory record that indicates that the samples were filtered.

This group of samples was digested for ICP metals, mercury and cyanide on 28Aug08, 03Sep08 and 11Aug08, respectively. These determinations were completed on 11Sep08, 04Sep08 and 13Aug08. The determinations of mercury and cyanide were not completed within the ASP holding time limitations. Mercury and cyanide results have been qualified as estimations.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. These checks demonstrated a positive bias in measurements of antimony (110.6%), arsenic (110.4%), cadmium (110.2%), lead (111.4%), selenium (113.4%), silver (129.6%,123.8%) and zinc (112.7%,

112.1%). The positive results that have been qualified due to this performance are summarized below.

Antimony	MW-12
Cadmium	MW-11, MW-12, MW-13, MW-5
Lead	MW-3, MW-7, MW-12
Silver	MW-2, MW-3, MW-13
Zinc	MW-2, MW-3, MW-6, MW-7, MW-9, MW-10, MW-11, MW-12 MW-13, DEC-1, MW-5

Arsenic and selenium were not detected in this group of samples.

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were analyzed as required. These checks produced unacceptable recoveries of arsenic (132.2%), selenium (56.0%) and zinc (142.8%). The positive bias indicated in measurements of arsenic warrants no concern. Arsenic was not detected in this group of samples. The negative selenium results and positive zinc results from this project have been qualified as estimations based on this performance.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. A preparation blank was digested and analyzed with each group of samples. Two CCB blanks contained antimony artifacts of 77.2 and 83.2 µg/l. The antimony concentration from MW-12, the only positive sample, must be considered unreliable due to this indication of bias. The antimony result from MW-12 should not be included in data tables.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element

correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

Interference Check Standards, ICSA and ICSAB, were reported from the beginning and end of each ICP analysis sequence. These checks revealed a positive bias in measurements of silver (125%, 133%). The positive silver results reported from MW-2, MW-3 and MW-13 have been qualified as estimations because these samples also contained interfering levels of calcium.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

MW-5 was selected for matrix spiking. The recoveries reported for the additions to this sample included a high result for silver. The silver concentrations from MW-2, MW-3 and MW-13 have been qualified as estimations based on this indication of positive bias.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

MW-5 was prepared as a laboratory split duplicate. This pair of samples demonstrated poor precision in measurements of aluminum. The aluminum results from this group of samples have been qualified as estimations based on this performance.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

One aqueous LCS standard was digested and analyzed with this group of samples. This standard produced a high recovery of silver. Positive silver results have been qualified as estimations. The remaining targeted analytes were recovered successfully.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

The Field Dupe was prepared as a serial dilution. Of the analytes present in the undiluted aliquot of this sample, at a concentration exceeding 50 time IDL, only the measurements of calcium and sodium differed from the diluted sample by more than 10%. The calcium and sodium results from this project have been qualified as estimations.

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled July 2008

		HOLD TIME MERCURY	HOLD TIME CYANIDE	CALIBRATE ANTIMONY	CALIBRATE CADMIUM	CALIBRATE LEAD	CALIBRATE SILVER	CALIBRATE ZINC	CRDL ZINC
MW-2	(U0808008-01)	UJ	UJ				142J	48.1J	48.1J
MW-3	(U0808008-02)	UJ	UJ			3.5J	12.9J	79.8J	79.8J
MW-6	(U0808008-04)	UJ	UJ					15.4BJ	15.4BJ
MW-7	(U0808008-05)	UJ	UJ			3.7J		21.8J	21.8J
MW-8	(U0808008-06)	UJ	UJ						
MW-9	(U0808008-07)	1.4J						21.2J	21.2J
MW-10	(U0808008-08)	UJ	UJ					17.2BJ	17.2BJ
MW-11	(U0808008-09)	UJ	UJ		9.0J			28.8J	28.8J
MW-12	(U0808008-10)	1.5J	22.9J	35.7BJ	5.7J	3.2J		157J	157J
MW-13	(U0808008-11)	0.85J	1290J		1030J		98.1J	4740J	4740J
DEC-1	(U0808008-12)	UJ	UJ					10.2BJ	10.2BJ
MW-5	(U0808008-14)	UJ	UJ		24.0J			723J	723J
DUPE	(U0808008-15)	UJ	UJ						

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled July 2008

		CRDL SELENIUM	BLANKS ANTIMONY	ICS SILVER	SPIKES SILVER	LCS SILVER	DUPES ALUMINUM	SER DIL CALCIUM	SER DIL SODIUM
MW-2	(U0808008-01)	UJ		142J	142J	142J	1540J	916000J	128000J
MW-3	(U0808008-02)	UJ		12.9J	12.9J	12.9J	788J	969000J	242000J
MW-6	(U0808008-04)	UJ					157BJ	94100J	132000J
MW-7	(U0808008-05)	UJ					1110J	133000J	164000J
MW-8	(U0808008-06)	UJ					215J	95600J	191000J
MW-9	(U0808008-07)	UJ					338J	749000J	33800J
MW-10	(U0808008-08)	UJ					289J	67700J	40900J
MW-11	(U0808008-09)	UJ					882J	129000J	211000J
MW-12	(U0808008-10)	UJ	REJECT				1440J	143000J	212000J
MW-13	(U0808008-11)	UJ		98.1J	98.1J	98.1J	261J	803000J	114000J
DEC-1	(U0808008-12)	UJ					619J	140000J	164000J
MW-5	(U0808008-14)	UJ					UJ	88300J	157000J
DUPE	(U0808008-15)	UJ					UJ	89200J	189000J

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Aqueous Samples
SDG: DEC 69
Sampled July 2008

PESTICIDES/PCB

MW-2	(U0808008-01)	MW-3	(U0808008-02)
MW-6	(U0808008-04)	MW-7	(U0808008-05)
MW-8	(U0808008-06)	MW-10	(U0808008-08)
MW-11	(U0808008-09)	MW-12	(U0808008-10)
MW-13	(U0808008-11)	DEC-1	(U0808008-12)
MW-5	(U0808008-14)	DUPE	(U0808008-15)

DATA ASSESSMENT

A Pesticide/PCB data package containing analytical results for twelve aqueous samples was received from Upstate Laboratories, Inc., on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methods 8081 and 8082, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-6,Rev 8, CLP Organics Data Review and Preliminary Review, Jan. 1992) was used as a technical reference.

This Data Usability Summary Report is based on the assumption that because the laboratory is ASP certified, its calculations are correct. Beyond this assumption, the reported data has been subjected to all of the rigor of the complete validation process.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, completely usable, and without qualifications in its present form. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error. Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19Apr09

James B. Baldwin

SAMPLE HISTORY

Analyte concentrations can deteriorate with time due to chemical instability, bacterial degradation or volatility. Samples that are not properly preserved or are not analyzed within established holding times may no longer be considered representative. Holding times are calculated from the Verified Time of Sample Receipt. Samples must remain chilled to 4°C between the time of collection and the time of analysis. Extractions of aqueous samples must be completed within 5 days of receipt, soils within 12 days. Analyses must be completed within 40 days of extraction.

This sample delivery group contained 12 aqueous samples that were collected from the H.M. Quachenbush site by OPTECH Environmental on 30Jul08. They were delivered to the laboratory on 31Jul08. The Sample Receipt Check List indicates that the samples were received intact and properly chilled. The entire group of samples was extracted on 03Aug08. Analyses were completed on 22Aug08. The ASP holding time limitations were satisfied.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Method blanks are analyzed to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank. Any sample concentration less than 5 times the level determined in a blank must be qualified.

One method blank was extracted with this group of samples and analyzed for Pesticides and PCB. This blank demonstrated acceptable chromatography and was free of targeted analyte contamination.

CALIBRATION

Requirements for instrument calibration are established to ensure that laboratory equipment is capable of producing accurate, quantitative data. Initial calibrations demonstrate a range through which measurements may be made. Continuing calibration standards verify instrument stability.

The initial instrument calibration for Pest/PCB was performed on two chromatographic columns, on 19Jun08 and 20Jun08. This calibration included 5 levels of concentration for each single component pesticide, and five representative peaks of Toxaphene, AR-1016 and AR-1260. The standards of each of these components demonstrated acceptable levels of response and linearity. The Performance Evaluation Mixture (PEM), Resolution Standards (RES) and each single component standard demonstrated acceptable levels

of chromatographic resolution. Single point calibrations were performed for the remaining targeted Aroclors.

Additional calibrations that included five levels of concentration were included for AR-1221, AR-1242 and AR-1254. These were performed on 14Jul08, 21Jul08 and 14Jul08 respectively.

Program samples were processed in an analysis sequence that ran on 21Aug08 and 22Aug08. This sequence was bracketed by clean instrument blanks, PEM, single component pesticide standards (INDA-M, INDB-M) and standards of AR-1016 and AR-1260. Each of these checks produced chromatographic peaks that eluted at the correct retention times on both columns, that demonstrated an acceptable level of resolution, and produced acceptable levels of analyte recovery. It is noted that the Aroclor recoveries were only reported from the DB-35MS column, and this information was provided in duplicate. Results from the DB-XLB column were absent. Data has not been qualified due to this error because negative results were obtained from each program sample on both analytical columns.

It is also noted that the PEM that initiated the analytical sequence produced an unacceptable level of Endrin breakdown (21%). Although this indicates that the laboratory's instrumentation is in need of maintenance, data has not been qualified. Neither Endrin nor it's breakdown products were present in this group of samples.

SURROGATES

Each sample, blank and standard is spiked with surrogate compounds prior to analysis. The structures of surrogates are similar to analytes of interest, but they are not normally found in environmental samples. Surrogate recoveries are monitored to evaluate overall laboratory performance and the efficiency of laboratory technique.

Two surrogates, tetrachloro-m-xylene and decachlorobiphenyl were added to every program sample. Each of these additions produced an acceptable recovery.

MATRIX SPIKES / MATRIX SPIKE DUPLICATES / MATRIX SPIKED BLANKS

Matrix spiking refers to the addition of known analyte concentrations to a sample prior to extraction and analysis. Analyte recoveries provide an indication of laboratory accuracy. The analysis of a duplicate spiked aliquot provides a measurement of precision.

MW-5 was selected for matrix spiking. Two aliquots of this sample were spiked with six single component pesticides. The recoveries reported for these additions demonstrated acceptable levels of measurement accuracy and precision.

An aqueous spiked blank was also analyzed with this group of samples. The spiked blank also produced acceptable analyte recoveries.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by the analysis of this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

Although field split duplicates were included in this group of samples, they were not identified.

DATA QUALIFICATIONS

H.M. Quackenbush Site

Sampled July 2008

MW-2 (U0808008-01)
MW-3 (U0808008-02)
MW-6 (U0808008-04)
MW-7 (U0808008-05)
MW-8 (U0808008-06)
MW-10 (U0808008-08)
MW-11 (U0808008-09)
MW-12 (U0808008-10)
MW-13 (U0808008-11)
DEC-1 (U0808008-12)
MW-5 (U0808008-14)
DUPE (U0808008-15)

DATA USABILITY SUMMARY REPORT

for

UPSTATE LABORATORIES, INC.

6034 Corporate Drive

East Syracuse, NY 13057

H.M. QUACKENBUSH SITE
Concrete Samples
SDG: DEC 64
Sampled June 2008

METALS

CF-1	(U0806509-01)	CF-2	(U0806509-02)
CF-3	(U0806509-03)	CF-4	(U0806509-04)
CF-5	(U0806509-05)	CF-6	(U0806509-06)
CF-7	(U0806509-07)	CF-8	(U0806509-08)
CF-9	(U0806509-09)	CF-10	(U0806509-10)
CF-11	(U0806509-11)	CF-12	(U0806509-12)
CF-13	(U0806509-13)	CF-14	(U0806509-14)
CF-15	(U0806509-15)	DUP10	(U0806509-16)

DATA ASSESSMENT

An inorganics data package containing analytical results for 16 concrete samples was received from Upstate Laboratories, Inc. on 03Mar09. The ASP deliverables package included formal reports, raw data, the necessary QC, and supporting information. The samples, taken from the H.M. Quackenbush Site, were identified by Chain of Custody documents and traceable through the work of Upstate Laboratories, Inc., the laboratory contracted for analysis. Analyses, performed according to SW-846 Methodologies, addressed Target Compound List analytes. Laboratory data was evaluated according to the quality assurance / quality control requirements of the New York State Department of Environmental Conservation's Analytical Services Protocol, September 1989, Rev. 07/2005. When the required protocol was not followed, the current EPA Region II Functional Guidelines (SOW HW-2, Rev. 13, Sep. 2006, Validation of Metals for the Contract Laboratory Program) was used as a technical reference.

To prepare this Data Usability Summary Report, it was assumed that the laboratory's calculations were correct. This assumption is based on the laboratory's ASP certifications. Beyond that assumption, the remainder of the validation process was unchanged.

Data that has been qualified due to poor QC performance has been flagged on Form 1. Qualifications have also been tabulated at the end of this report.

CORRECTNESS AND USABILITY

Reported data should be considered technically defensible, and completely usable in its present form. Data providing a usable estimation of the conditions existing at the time of sampling has been flagged "J", "UJ" and "BJ". Data that is felt to be unreliable has been identified with a single red line and flagged "R". Rejected data should not be included in data tables. Estimated data should be used with caution. A detailed discussion of the review process follows.

Two facts should be considered by all data users. No compound concentration, even if it has passed strict QC testing, can be guaranteed to be accurate. Strict QC serves to increase confidence in data, but any value potentially contains error.

Secondly, DATAVAL, Inc. guarantees the quality of this data assessment. However, DATAVAL, Inc. does not warrant any interpretation or utilization of this data by a third party.

Reviewer's signature: James B. Baldwin Date: 19Apr09

SAMPLE HISTORY

Sample holding times are calculated between the Verified Time of Sample Receipt (VTSR) and the time of analysis. Mercury samples must be analyzed within 26 days of receipt; cyanide 12 days. The remaining metals must be digested and analyzed within 180 days of receipt.

This sample delivery group contained 16 concrete samples that were collected from the H.M. Quachenbush site by OPTECH Environmental between 23Jun08 and 25Jun08. The samples were delivered to the laboratory on 25Jun08. The Sample Receipt Check List indicates that they were received intact and properly chilled.

This group of samples was digested on 22Jul08 and analyzed for ICP metals on 01Aug08 and 19Aug08. The ASP holding time limitation for this work was satisfied. Samples for cyanide analysis were distilled on 07Jul08 and 09Jul09. Cyanide determinations were completed on 10Jul08. The cyanide results from CF-15 and DUPE10 have been qualified as estimations because they were held two days beyond the 12 day limitation prior to distillation. The entire group of mercury samples was held beyond the 26 day limitation prior to analysis. Mercury results have also been qualified as estimations.

The laboratory's internal custody record did not include CF-15 and DUPE10. The results from these samples have not been qualified because the technical quality of the results was not impacted. It should be noted, however, that the results from this pair of samples cannot be considered legally defensible because the custody of these samples cannot be verified between the time of sampling and the time of analysis.

CALIBRATIONS

Calibration curves are constructed, using certified materials, to define the linear range of each analytical instrument. Beyond this range, measurements cannot be made with confidence. The calibration curve is immediately tested by analyzing an initial calibration verification standard (ICV). Continuing verifications (CCV) must bracket each group of up to ten samples. ICV and CCV recoveries must meet established criteria.

Each instrument calibration was immediately verified by the analysis of an ICV standard. Continuing calibration checks were made following each group of 10 samples. These checks demonstrated a positive bias in measurements of antimony (120%,123%), zinc (122%, 127%,126%) and mercury (122%). The antimony results from CF-12, CF-13 and CF-15; zinc result from

CF-15, and the mercury results from CF-1, CF-2, CF-3 and CF-4 have been qualified as estimations based on this performance.

CONTRACT REQUIED DETECTION LIMIT STANARDS (CRDL)

To verify instrument linearity near CRDL, an ICP standard at a concentration of twice CRDL (CRI) is analyzed at the beginning and end of each analytical sequence. A standard equaling CRDL (CRA) must be included in each atomic adsorption sequence. CRDL standards must produce recoveries between 70% and 130%.

CRDL standards were analyzed as required. These checks produced unacceptable recoveries of manganese (67%) and zinc (132%). The zinc concentration from CF-15 and the manganese results from this project have been qualified as estimations due to these indications of bias.

BLANKS

Blanks are analyzed to evaluate various sources of sample contamination. Field blanks monitor sampling activities. Preparation blanks are carried through the digestion process with each group of samples to evaluate general laboratory technique. Calibration blanks are run periodically to verify instrument integrity. Samples are considered compromised by conditions causing contamination in any blank.

An initial blank (ICB) was analyzed following the calibration in each analytical sequence. Additional blanks were analyzed after every ten samples (CCB) and at the end of each sequence. A preparation blank was digested and analyzed with each group of samples. One CCB blank contained artifacts of cadmium, chromium and copper. Data that has been qualified based on this observation is summarized below.

Cadmium	CF-6, CF-7, CF-11
Chromium	CF-9, CF-11, CF-14, DUPE10
Copper	CF-10, CF-13, CR-15

The cadmium result from DUPE10 has been rejected.

INTERFERENCE CHECK SAMPLE (ICS)

ICS standards are analyzed at the beginning and end of each ICP analysis sequence to verify background and inter-element correction factors. The recoveries of specified analytes are measured in the presence of interfering concentrations of aluminum, calcium, magnesium and iron.

Interference Check Standards, ICSA and ICSAB, were reported from the beginning and end of each ICP analysis sequence. These

checks revealed a positive bias in measurements of silver (126%, 122%) and zinc (121%). This performance, however, warrants no concern. The silver recoveries were not associated with samples from this program, and the only sample associated with the zinc result, CF-15, did not contain significant concentrations of interfering metals.

PREDIGESTION SPIKE

The recovery of spike concentrations added to samples prior to digestion and analysis demonstrates measurement bias caused by sample matrix effects. Predigestion spikes must be recovered within control limits of 75% - 125%.

CF-4 was selected for matrix spiking. The recoveries reported for the additions to this sample included a low result for silver (25%). The silver concentrations from this project have been qualified as estimations based on this indication of negative bias.

DUPLICATES

Two aliquots of the same sample are processed separately through all aspects of sample preparation and analysis. Results produced by this pair of samples are compared as a measurement of precision. Poor precision may be indicative of sample non-homogeneity, method defects, or poor laboratory technique.

CF-4 was prepared as a laboratory split duplicate. This pair of samples demonstrated poor precision in measurements of thallium. The thallium results from this group of samples have been qualified as estimations based on this performance.

LABORATORY CONTROL STANDARD

Laboratory control samples are prepared by adding analytes to clean sand or reagent water. Analyte concentrations are then determined without interferences caused by sample matrix effects.

One solid LCS standard was digested and analyzed with this group of samples. The additions to this standard were recovered successfully.

SERIAL DILUTION SAMPLE

Possible matrix effects are verified by the process of serial dilutions. Samples are diluted 1:5 to reduce matrix contributions that might bias measurements. The original sample result, and the corrected concentration of the diluted sample are compared. Sample data is qualified if the original

concentrations are not recovered within 10%. Analytes with initial concentrations below 50 times IDL are not considered.

Field Duplicate 10 was prepared as a serial dilution. Of the analytes present in the undiluted aliquot of this sample, at a concentration exceeding 50 time IDL, the measurements of calcium, chromium, copper and zinc differed from the diluted sample by more than 10%. The calcium, chromium, copper and zinc results from this project have been qualified as estimations.

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

		HOLD TIME MERCURY	HOLD TIME CYANIDE	CALIBRATE ANTIMONY	CALIBRATE MERCURY	CALIBRATE ZINC	CRDL ZINC	CRDL MANGANESE	BLANK CADMIUM
CF-1	(U0806509-01)	0.079J			0.079J			241J	
CF-2	(U0806509-02)	0.16J			0.16J			132J	
CF-3	(U0806509-03)	0.081J			0.081J			137J	
CF-4	(U0806509-04)	0.15J			0.15J			155J	
CF-5	(U0806509-05)	0.18J						209J	
CF-6	(U0806509-06)	1.5J						193J	14.2J
CF-7	(U0806509-07)	3.8J						110J	18.1J
CF-8	(U0806509-08)	0.83J						164J	
CF-9	(U0806509-09)	0.093J						317J	
CF-10	(U0806509-10)	1.3J						97.7J	
CF-11	(U0806509-11)	0.27J						186J	47.0J
CF-12	(U0806509-12)	0.55J		5.7BJ				339J	
CF-13	(U0806509-13)	0.19J		26.5J				153J	
CF-14	(U0806509-14)	1.3J						65.7J	
CF-15	(U0806509-15)	0.11J	53.8J	10.6BJ		9220J	9220J	73.6J	
DUP10	(U0806509-16)	0.23J	UJ					116J	REJECT

DATA QUALIFICATIONS

H.K Quackenbush Site

Sampled June 2008

		BLANK CHROMIUM	BLANK COPPER	SPIKES SILVER	DUPES THALLIUM	SER DIL CALCIUM	SER DIL CHROMIUM	SER DIL COPPER	SER DIL ZINC
CF-1	(U0806509-01)			7.6J	11.2J	193000J	61.7J	109J	218J
CF-2	(U0806509-02)			4.4J	9.2J	132000J	70.4J	87.0J	125J
CF-3	(U0806509-03)			5.2J	8.9J	173000J	68.7J	77.9J	431J
CF-4	(U0806509-04)			5.7J	8.1J	148000J	59.5J	284J	314J
CF-5	(U0806509-05)			18.8J	8.0J	90500J	2080J	1510J	1090J
CF-6	(U0806509-06)			65.5J	13.2J	92400J	11600J	3870J	918J
CF-7	(U0806509-07)			91.9J	7.9J	88700J	798J	15300J	2630J
CF-8	(U0806509-08)			16.6J	7.1J	82900J	718J	850J	745J
CF-9	(U0806509-09)	118J		UJ	9.8J	178000J	118J	388J	637J
CF-10	(U0806509-10)		135J	UJ	7.6J	99400J	839J	135J	210J
CF-11	(U0806509-11)	211J		4.8J	9.7J	133000J	211J	3120J	4680J
CF-12	(U0806509-12)			10.1J	11.2J	151000J	1520J	877J	24700J
CF-13	(U0806509-13)		89.5J	70.5J	15.5J	174000J	11600J	89.5J	10200J
CF-14	(U0806509-14)	153J		12.4J	7.7J	55600J	153J	16100J	866J
CF-15	(U0806509-15)		222J	5.6J	15.7J	161000J	2520J	222J	9220J
DUP10	(U0806509-16)	104J		7.4J	9.2J	144000J	104J	1280J	188J

Adirondack Environmental Services, Inc.
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November 13, 2008

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Attn: Mr. Joe Naselli

Dear Mr. Naselli:

Adirondack Environmental Services, Inc. has completed the data validation / usability review for the data packages for H.M. Quackenbush project. Upstate Laboratories in East Syracuse, New York analyzed the samples in these data package in August 2008. There was one SDG submitted for review with Upstate Laboratories SDG: DEC 69. This project included Volatile Organics, Semi-Volatile Organics, Pesticides/PCB and Metals data. This data has been reviewed by the Quality Assurance Manager for data completeness and adherence to the specified methodology. The data was reviewed to the requirements given in NYSDEC ASP 7/2005 revision. The following report has the findings for the SDG submitted for review.

If you should have any questions regarding this review, please feel free to contact me.

Sincerely,

Christopher Hess
Quality Assurance Manager

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Data Validation / Usability Report for

H.M. Quackenbush

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Prepared for: Mr. Joe Naselli

Prepared by: Christopher Hess
Quality Assurance Manager
Adirondack Environmental Services, Inc.

Date Prepared: November 13, 2008

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SDG: DEC 69 – Water samples

General Findings:

- The SDG name should be based on the samples received. The SDG name is based on the laboratory project identification number.
- No case number assigned to this project.
- There are extra forms not required included in the data summary package.

Volatile Organics:

- ***No Method Detection Limits (MDL's) are given in the data package for Volatile Organics.***
- The samples are not arranged in alpha-numeric sequence as specified by NYSDEC ASP.
- The samples were quantitated from the initial calibration curve as required.
- The Form 5 from 8/10/08 shows that the Continuing Calibration Verification (CCV) was analyzed after the 12 hour time period. The CCV was analyzed on 8/11/08 at 7:59 am, which is more than three hours past the 12 hour time frame.
- Samples MW-2, MW-13 and Trip Blank had a pH of greater than 2. These samples were analyzed after the allowed 7 day hold time.
- The reported list of compounds is very short. This list appears to be the very old Target Compound List from NYSDEC ASP revision 10/95. Compared to the NYSDEC ASP 7/2005 revision there are 17 compounds missing. (The NYSDEC ASP 6/2000 revision also has 15 compounds missing from the TCL list).
- The raw data for the samples and calibration analyzed are out of sequence. The chromatograms for the standards should be before the quantitation page for the corresponding standards.
- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Semi-Volatile Organics:

- ***No Method Detection Limits (MDL's) are given in the data package for Semi-Volatile Organics.***
- The samples are not arranged in alpha-numeric sequence as specified by NYSDEC ASP.
- The samples were quantitated from the initial calibration curve as required.
- Samples MW-2 and MW-3 are diluted 1:2, but there are no high concentrations of compounds. Only "J" values for low level results. There is no mention in the case narrative regarding the reason for this dilution.
- Sample MW-9 used 250 mL for sample extraction instead of the usual 1000 mL. There are no high concentrations of compounds. Only "J" values for low level results. There is no mention in the case narrative regarding the reason for this dilution.
- Samples MW-2 and MW-3 have two base/neutral surrogates (2-Fluorobiphenyl and Terphenyl-d14) outside required limits. These samples were not re-extracted. There is no mention in the case narrative regarding these samples.
- Sample SVBLK01 had the surrogate 2-Fluorophenol outside required limits. There is no mention in the case narrative regarding this sample.
- The matrix spike blank has recoveries for 2,4-Dinitrotoluene and 4-Nitrophenol above required limits.
- The Field Duplicate has a high recovery for the internal standard Perylene-d12.
- The raw data for the samples and calibration analyzed are out of sequence. The chromatograms for the standards should be before the quantitation page for the corresponding standards.
- The sample MW-5 MSD was analyzed after the 12 hour tune had expired. This sample was analyzed 19 minutes past time.
- There is no closing Continuing Calibration Verification (CCV) analyzed. The next CCV was analyzed 24 hours later.
- The reported list of compounds is short. This list appears to be the old Target Compound List from NYSDEC ASP revision 10/95. Compared to the NYSDEC ASP 7/2005 revision there are 6 compounds missing.

Semi-Volatile Organics (continued):

- The initial calibration has the compound bis(2-chloroethoxy)methane with an Average Response Factor of 0.287 and the required RRF for this compound is 0.300. Up to four compounds are allowed to exceed the specified limits.

- **The %D's for two of the compounds in the Continuing Calibration Verification (CCV) analyzed on 9/2/08 at 12:53 exceed the required 25 %D and the 40 %D criteria as specified in NYSDEC ASP. The Form 7 has 4-Nitroanaline %D at 44.7 % and the check of the calculation for this compound yields 45.3 %D.**

Compound	%RSD
4-Nitroanaline	45.3 %
2-Fluorophenol	46.7 %

- **The %D's for three of the compounds in the Continuing Calibration Verification (CCV) analyzed on 9/3/08 at 12:46 exceed the required 25 %D criteria as specified in NYSDEC ASP. Three additional compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
Bis(2-chloroethyl)ether	26.6 %
2,4-Dinitrotoluene	31.2 %
4-Nitroanaline	43.9 %
Fluoranthene	46.9 %
2-Fluorophenol	55.9 %
Phenol-d5	27.2 %

- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Pesticide/PCB:

- ***No Method Detection Limits (MDL's) are given in the data package for Pesticide/PCBs.***

- The samples are not arranged in alpha-numeric sequence as specified by NYSDEC ASP.

- The samples were quantitated from the initial calibration curve as required, but only from one of the columns. The results from the lowest of the two columns should be reported.

Pesticide/PCB (continued):

- Samples MW-2 and MW-3 are diluted 1:10, but there are no detectable levels of any compounds. There is no mention in the case narrative regarding the reason for this dilution.

- **The Endrin breakdown in the PEM analyzed on 8/21/08at 6:03 pm was greater than 20 %. The breakdown for this compounds was 21 % on both columns.**

- **The first PIBLK was analyzed on 8/21/08 at 5:39 pm. The closing MIDA/B was analyzed at 8/22/08 at 7:47 am, which was more than the 14 hours allowed. The last sample was injected on 8/22/08 at 6:59 am, which was more than the allowed 12 hour time period. Samples MW-5, MW-5 MS/MSD and Field Dup were analyzed after the 12 hour time period.**

- **No closing PIBLK was analyzed.**

- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Inorganics - Metals:

- ***The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's)given in the data package for Metals at exact numbers (10.0, 5.0, etc.).A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. Have the MDL/IDLs been updated on the date specified ?? The date given for the ICP MDL/IDL was 7/28/08, which is just before the samples arrived. Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. (NYSDEC ASP 7/2005 version does have different CRDLs for these compounds). Also the Mercury and Cyanide MDL/IDL is exactly the same as the CRDL.***

- The samples are not arranged in alpha-numeric sequence as specified by NYSDEC ASP.

- **The Mercury samples were received on 7/31/08 and according to the preparation log and the Form 13 these samples were prepared on 9/2/08. This is 33 days after they were received. The holding time specified by NYSDEC ASP is 26 days (7 days past hold time). According to the case narrative they were prepared within hold time ???**

Inorganics – Metals (continued):

- The Continuing Calibration Verification (CCV1) analyzed on 9/10/08 at 10:05 am had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Antimony	110.6 %
Arsenic	110.4 %
Cadmium	110.2 %
Lead	111.4 %
Selenium	113.4 %
Silver	129.6 %
Zinc	112.7 %

- The Continuing Calibration Verification (CCV2) analyzed on 9/10/08 at 11:09 am had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Silver	123.8 %
Zinc	112.1 %

- The Continuing Calibration Verification (CCV1) analyzed on 9/11/08 at 6:24 pm had recovery for Silver of 121.6 %, above the required 90-110 % recovery. While Silver was not an analyte of interest for the analysis on 9/11/08, it shows a continued high recovery for this element which was not corrected.

- The CRI1 analyzed on 9/10/08 had recoveries for Selenium of 59.4 %. The CRI2 analyzed on 9/10/08 had recoveries for Arsenic of 132.2 % and Zinc of 142.8 %.

- The Form 3 for ICP has the Initial Calibration Blank (ICB) for Antimony with a result of 22.3 ug/L. This recovery would be within acceptable limits. The following Continuing Calibration Blank (CCB1) had a result for Antimony of 77.2 ug/L and CCB2 was 83.2 ug/L, which are above the required CRDL. The ICB also has large negative values for Calcium (-141 ug/L) and Sodium (-251 ug/L).

- The Form 3 for Cyanide has the Initial Calibration Blank (ICB) with a result of 0.0 U ??

- The Form 4 for the ICSAB1 analyzed on 9/10/08 has Silver with a recovery of 125.2 %. The ICSAB2 analyzed on 9/10/08 has a recovery for Silver of 132.8 %. The recoveries for Silver for the analysis on 9/11/08 were also over-range.

Inorganics – Metals (continued):

- The spike recovery for MW-5 had a result for Silver of 142.2 %. This is flagged on the Form 1's as required. The spike levels for Arsenic (2000 ug/L), Lead (500 ug/L), Selenium (2000 ug/L) and Thallium (2000 ug/L) are much higher than the required levels. The required levels for these compounds are Arsenic (40 ug/L), Lead (20 ug/L), Selenium (50 ug/L) and Thallium (50 ug/L). **Also no post digestion spike was performed**.

- The sample results on the Form 6 are given as 0.0000 U for non-detects. The sample result for Aluminum was 0.0000 U and the duplicate result was 309.4342 ug/L.

- The Form 9 for Serial Dilution has recoveries for Calcium of 23.1 % and Sodium of 78.9 %. The required range is 10 %. Both are flagged with an "E" as required on the Form 1's.

- **The Form 10 lists a CRDL for Antimony of 120 ug/L. The required CRDL level is 60 ug/L.**

- **The Form 10 gives exact numbers for the MDL/IDL as mentioned previously. The instrument ID on the Form 10 is ICP 58.0 or 5B.0 (hard to read in the 100th generation photocopy). The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 or 5B.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 17.0. This would be three separate Instrument ID's. Which instruments were used for analysis and is there appropriate forms for each instrument.**

- **The ICP raw data has large negative results for Selenium. The results range from –13 ug/L for the Field Duplicate to –108 ug/L for MW-13. The majority of the samples range from –40 to –90 ug/L.**

- **The ICP raw data from 9/10/08 has more than 10 samples between ICB to the next CCV. There are a total of 15 samples analyzed (ISCA, ICSAB, CRI, Blank, MBLK, LCS and then 8 samples). The next set from CCB1 to CCV2 has 14 samples analyzed (8 samples, 2 blanks, ICSA, ICSAB, Blank and CRI). (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 9/11/08 has more than 10 samples between ICB to the next CCV. There are a total of 15 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The Cyanide run has 11 analyses between CCB to CCV when the CRI is analyzed. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

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Data Review Summary

The data packages submitted are not completely in the format specified by the New York State DEC for ASP data packages (NYSDEC ASP 7/2005 revision, pages B-6 through B-56).

Volatile Organics

Conclusion: **All Aromatic Compounds for samples MW-2, MW-13 and Trip Blank should be flagged with an "UJ" for non-detects and "J" for any positive results due to preservation.** Since the pH criteria was not meet for these three samples the Aromatic Compounds may degrade. The closing CCV2 analyzed with the sample run beginning 8/10/08 was analyzed 3 hours after the 12 hour time period. A total of 17 compounds are missing from the TCL compound listing from NYSDEC ASP 7/2005 version. (If the NYSDEC ASP 6/2000 revision was used there would still be 15 compounds missing from the TCL list).

Semi-Volatile Organics

Conclusion: **The compounds 4-Nitroanaline and 2-Fluorophenol for the samples analyzed on 9/2/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to calibration over 25 % D. The compounds Bis(2-chloroethyl)ether, 2,4-Dinitrotoluene, 4-Nitroanaline, Fluoranthene, 2-Fluorophenol and Phenol-d5 for the samples analyzed on 9/3/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to calibration over 25 % D.**

A continuing calibration was not analyzed at the end of each 12 hour tune. Sample MW-9 was analyzed using 250 mL of sample (1:4 dilution), but only three compounds with "J" values were found. The chromatogram does not seem that a dilution would have been required for this sample.

Samples MW-2 and MW-3 had two of the base/neutral surrogates outside limits. No re-extraction was performed and no mention in the case narrative was made. **Samples MW-2 and MW-3 should be flagged with an "UJ" for non-detects and "J" for any positive results for the base/neutral fraction based on surrogate recoveries.** The SVBLK01 had the recovery for one surrogate (2-Fluorophenol) outside limits. A total of 6 compounds are missing from the TCL compound listing from NYSDEC ASP 7/2005 version. The high recoveries in the MS/MSD and MSB do not contribute to any bias in the samples analyzed.

Data Review Summary (continued)

Pesticide/PCBs

Conclusion: Samples MW-2 and MW-3 were diluted 1:10, but no compounds were found and no mention of the reason for the dilutions was made in the case narrative. The Endrin breakdown in the PEM was greater than 20 %, but all samples were non detect. A second PIBLK was not analyzed with the MID A/B samples. There was more than 12 hours elapsed between the PEM and the second PIBLK (which was not analyzed before the MID A/B samples). The samples MW-5, MW-5 MS/MSD and the Field Duplicate were analyzed after the 12 hour time period. **The results for these four samples analyzed after the 12 hour period should be flagged with an "UJ" for non-detects and "J" for any positive results due to the unacceptable calibration sequence.**

Metals

Conclusion: In general the analysis for metals was poor. The analysis for ICP metals was analyzed not following the criteria for continuing calibration verification. There were 15 samples analyzed between the ICB and the next CCV (10 samples are allowed). The CCB to CCV group had 14 samples analyzed. There was a consistent high bias to Silver in the CCV's analyzed on both days of analysis. No attempt seemed to be made to correct the high Silver bias in the CCV's.

Several compounds had high recoveries in the CCV's (Antimony, Arsenic, Cadmium, Lead, Selenium, Silver and Zinc). **Positive results for Arsenic, Cadmium, Lead, Silver and Zinc should be flagged as "J+" for biased high.**

The instrument blanks analyzed on 9/10/08 had Antimony present at 22.3 ug/L, 77.2 ug/L and 83.2 ug/L. **All Antimony results should be reported as 84 U (< 84 ug/L) for all samples due to the levels present in the blanks.**

The raw data for Selenium had large negative results (most in the range of –40 to –90 ug/L). **The results for Selenium should be with an "R" as unusable for non-detects.**

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Data Review Summary (continued)

Metals

Conclusion: According to the preparation log and the Form 13 the Mercury samples were analyzed after the required 26 day hold time and after the 28 day technical hold time. The samples were prepared 33 days after receipt and 34/35 days after sampling. The MDL/IDL for Mercury is at the CRDL. **The results for Mercury should be flagged with an "R" as unusable for non-detects and "J-" as estimated low for any positive results due to hold time expiration and unreliability of results at the detection limit.**

The serial dilution recoveries for Calcium and Sodium were above the required limits at 23.1 % and 78.9 %, respectively. **Positive results for Calcium and Sodium should be flagged as "J" for estimated.**

The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's) given in the data package for Metals at exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. The date given for the ICP MDL/IDL was 7/28/08, which is just before the samples arrived. The form should not look so old in one month. It is questionable if the MDL/IDL information is actually current and correct. Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. **The results for Arsenic, Cadmium, Lead and Thallium should be flagged with an "UJ" for non-detects.**

The instrument ID on the Form 10 is ICP 58.0 or 5B.0 (hard to read in the 100^{th} generation photocopy). The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 or 5B.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 17.0. This would be three separate Instrument ID's.

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Data Review Summary (continued)

Metals

Conclusion: Due to the inconsistencies in the calibration sequence with more than 10 samples between ICB to CCV, the MDL/IDL information and difference in instrument ID's between the Forms 10,11,12 and 14 to following general statement is given. **All parameters not specified above would have results considered as estimated.** Further data documentation may be necessary to qualify the results. If the laboratory could provide better documentation and actual, current results for the information contained in these forms a better review could be determined.

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November 17, 2008

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Attn: Mr. Joe Naselli

Dear Mr. Naselli:

Adirondack Environmental Services, Inc. has completed the data validation / usability review for the data packages for H.M. Quackenbush project. Upstate Laboratories in East Syracuse, New York analyzed the samples in this data package in July/August 2008. There was one SDG submitted for review with Upstate Laboratories SDG: DEC 64, which contained sixteen concrete samples. This project included Metals data. This data has been reviewed by the Quality Assurance Manager for data completeness and adherence to the specified methodology. The data was reviewed to the requirements given in NYSDEC ASP 7/2005 revision. The following report has the findings for the SDG submitted for review.

If you should have any questions regarding this review, please feel free to contact me.

Sincerely,

Christopher Hess
Quality Assurance Manager

Adirondack Environmental Services, Inc.
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Data Validation / Usability Report for

H.M. Quackenbush

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Prepared for: Mr. Joe Naselli

Prepared by: Christopher Hess
Quality Assurance Manager
Adirondack Environmental Services, Inc.

Date Prepared: November 17, 2008

Adirondack Environmental Services, Inc.
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SDG: DEC 64 – Concrete samples

General Findings:

- The SDG name should be based on the samples received. The SDG name is based on the laboratory project identification number.
- No case number assigned to this project.
- There are extra forms not required included in the data summary package.

Inorganics - Metals:

- ***The first MDL/IDL given (page 149) has a date of 1/30/08 and the results for the CRDL that are much lower than the required CRDL's. The CRDL listed for Beryllium is 1.2 ug/L and the Lead CRDL is 0.6 ug/L. I am not sure where these CRDL's were taken from, as they are much lower than any required CRDL's. The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's) given in the data package for Metals are exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. Have the MDL/IDLs been updated on the date specified ?? Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL) for the second study from 7/30/08 (page 150). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. (NYSDEC ASP 7/2005 version does have different CRDL's for these compounds). Also the Mercury and Cyanide MDL/IDL is exactly the same as the CRDL.***
- **The Mercury samples were received on 6/25/08 and according to the preparation log, sample log out page and the Form 13 these samples were prepared on 7/25/08. This is 30 days after they were received. The holding time specified by NYSDEC ASP is 26 days (4 days past hold time). According to the case narrative they were prepared within hold time ???**

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Inorganics – Metals (continued):

- The Continuing Calibration Verification (CCV1) analyzed on 8/19/08 at 12:53 pm had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Antimony	120.0 %
Zinc	121.6 %

- The Continuing Calibration Verification (CCV2) analyzed on 8/19/08 at 1:34 pm had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Zinc	127.5 %

- The Continuing Calibration Verification (CCV3) analyzed on 8/19/08 at 2:32 pm had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Antimony	123.4 %
Zinc	126.3 %

- The continuing calibration (Form 2) for Mercury has some recoveries given of –3.0 % for two CCVs. These values were entered incorrectly on the forms.

- The continuing calibration (Form 2) for Cyanide has the true value for the CCV as 205 ug/L and some found values given as 104.00 with a 101.0 % recovery. The raw data indicates that the CCVs alternated between 205 ug/L and 103 ug/L for true values. The CCVs should be the same throughout the analysis.

- The CRI1 analyzed on 8/1/08 had recoveries for Lead of 124.3 % and Manganese of 77.0 %. The CRI2 analyzed on 8/1/08 had recoveries for Arsenic of 122.6 %, Cadmium of 121.0 %, Copper of 120.8 %, Manganese of 66.5 % and Selenium of 121.4 %.

- The Form 3 for ICP has the Initial Calibration Blank (ICB) for Antimony with a result of 19.9 ug/L. The following Continuing Calibration Blank (CCB1) had a result for Antimony of 24.9 ug/L and CCB2 was 20.7 ug/L and CCB3 was 22.4 ug/L. These recoveries would be within acceptable limits.

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Inorganics – Metals (continued):

- The Form 3 for Cyanide has the one of the Continuing Calibration Blanks (CCB) with a result of 1.0 U and all others are at 10.0 U. Also there are triplicate copies of the Form 3 for Cyanide included in the data package. Only one set is needed.

- The Form 4 for the ICSAB1 analyzed on 8/1/08 has Silver with a recovery of 125.9 %. The ICSAB2 analyzed on 8/1/08 has a recovery for Silver of 121.6 %. The recoveries for Silver for the analysis on 8/19/08 were within required limits. Also the Form 4 from 8/1/08 has instrument ID of 17.0 and the Form 4 for 8/19/08 has instrument ID of 58.0. If two different instruments were used for analysis, then two different sets of Forms 10,11 and 12 would be required. The Form 10 has instrument ID 58.0, Form 11 has instrument X-001 and Form 12 has instrument 58.0. The Form 14 for the Analysis Run Log for 8/1/08 has instrument 17.0 and the Form 14 for the Analysis Run Log for 8/19/08 has instrument 58.0

- The spike recovery for CF-4 had a result for Silver of 24.9 %. This is flagged on the Form 1's as required. The spike levels for Arsenic (2000 ug/L), Lead (500 ug/L), Selenium (2000 ug/L) and Thallium (2000 ug/L) are much higher than the required levels. The required levels for these compounds are Arsenic (40 ug/L), Lead (20 ug/L), Selenium (50 ug/L) and Thallium (50 ug/L). **Also no post digestion spike was performed**.

- The sample results on the Form 6 are given as 0.0000 U for non-detects. The recovery for Thallium was 30.7 %. This element is flagged as required.

- The Laboratory Control Sample recovery for Silver was outside required limits. The recovery for this element was 61.8 %.

- The Form 9 for Serial Dilution has recoveries for Calcium of 15.9 %, Chromium of 28.7 %, Copper of 14.7 % and Zinc of 28.0 %. The required range is 10 %. All are flagged with an "E" as required on the Form 1's. The Field Duplicate was used for the serial dilution.

- **The Form 10 lists a CRDL for Antimony of 120 ug/L. The required CRDL level is 60 ug/L.**

- **The Form 10 gives exact numbers for the MDL/IDL as mentioned previously. The instrument ID on the Form 10 is ICP 58.0 or 5B.0 (hard to read in the 100th generation photocopy). The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 or 5B.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 17.0. This would be three separate Instrument ID's. Which**

instruments were used for analysis and is there appropriate forms for each instrument.

- **The ICP raw data has large negative results for Selenium. The results CF-11 are –138 ug/L. The majority of the samples range from –60 to –90 ug/L. Also some of the samples have a large negative result for Arsenic. The following lists the samples with results for Arsenic that have large negative results.**

Sample	Result (ug/L)
CF-5	- 49.6
CF-6	- 344
CF-11	- 37
CF-13	- 350
CF-15	- 62

- **The ICP raw data from 8/1/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed (ISCA, ICSAB, Blank, CRI, MBLK, LCS and then 7 samples). The ICP raw data from 8/19/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed (ISCA, ICSAB, Blank, CRI, MBLK, LCS and then 7 samples). (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The Cyanide run has 11 analyses between CCB to CCV when the CRI is analyzed. The Cyanide run between CCB5 to CCV6 has 11 analyses. The Cyanide run between CCB9 to CCV10 has 12 analyses. The Cyanide run between CCB10 to CCV11 has 12 analyses. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

- **The raw data for Mercury shows a result for sample CF-7 of 13.3 ug/L, which is over-range. The Form 1 shows a dilution, but this dilution is not included in the data package. Sample CF-6 also is flagged as a dilution, but this analysis is not in the data package.**

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Data Review Summary

The data packages submitted are not completely in the format specified by the New York State DEC for ASP data packages (NYSDEC ASP 7/2005 revision, pages B-6 through B-56).

Metals

Conclusion: In general the analysis for metals was poor. The analysis for ICP metals was analyzed not following the criteria for continuing calibration verification. There were 13 samples analyzed between the ICB and the next CCV (10 samples are allowed).

Two compounds had high recoveries in the CCVs (Antimony and Zinc). **Positive results for Antimony should be flagged as "J" for estimated. Positive results for Zinc should be flagged as "J+" for biased high.**

The instrument blanks analyzed on 8/1/08 had Antimony present at 19.9 ug/L, 24.9 ug/L, 20.7 ug/L and 22.4 ug/L. **All Antimony non-detect results should be reported (based on 100 % Solids) as 5 U on the Form 1's (< 25 ug/L which calculates to < 5 mg/Kg) for all samples due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The raw data for Selenium had large negative results (most in the range of –40 to –90 ug/L). **The results for Selenium should be flagged with an "R" as unusable for non-detects.** A few of the Arsenic results also had large negative values. **The results for Arsenic for the samples CF-5, CF-6, CF-11, CF-13 and CF-15 should be flagged with an "R" as unusable for non-detects.**

According to the preparation log and the Form 13 the Mercury samples were analyzed after the required 26 day hold time and after the 28 day technical hold time. The samples were prepared 30 days after receipt and 30-32 days after sampling. The MDL/IDL for Mercury is at the CRDL. **The results for Mercury should be flagged with an "R" as unusable for non-detects and "J-" as estimated low for any positive results due to hold time expiration and unreliability of results at the detection limit.**

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Data Review Summary (continued)

Metals

Conclusion: The recovery for Silver in the LCS analyzed was lower than the allowed limits (61.8 % recovery). The recovery for Silver in the matrix spike was 24.9 %. **Positive results for Silver should be flagged as "J-" for biased low and non-detects should be flagged with as "R" for unusable.**

The serial dilution recoveries for Calcium, Chromium, Copper and Zinc were above the required limits at 15.9 %, 28.7 %, 14.7 % and 28.0 %, respectively. **Positive results for Calcium, Chromium and Copper should be flagged as "J" for estimated.**

The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's) given in the data package for Metals at exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. The date given for the ICP MDL/IDL was 7/28/08, which is just before the samples arrived. The form should not look so old in one month. It is questionable if the MDL/IDL information is actually current and correct. Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. **The results for Arsenic, Cadmium, Lead and Thallium should be flagged with an "UJ" for non-detects.**

The instrument ID on the Form 10 is ICP 58.0 or 5B.0 (hard to read in the 100^{th} generation photocopy). The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 17.0. This would be three separate Instrument ID's.

Due to the inconsistencies in the calibration sequence with more than 10 samples between ICB to CCV, the MDL/IDL information and difference in instrument ID's between the Forms 10,11,12 and 14 to following general statement is given. **All parameters not specified above would have results considered as estimated**. Further data documentation may be necessary to qualify the results. If the laboratory could provide better documentation and actual, current results for the information contained in these forms a better review could be determined.

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November 20, 2008

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Attn: Mr. Joe Naselli

Dear Mr. Naselli:

Adirondack Environmental Services, Inc. has completed the data validation / usability review for the data packages for H.M. Quackenbush project. Upstate Laboratories in East Syracuse, New York analyzed the samples in these data package in June/July 2008. There was one SDG submitted for review with Upstate Laboratories SDG: DEC 62 with 10 soils samples and one Trip Blank. This project included Volatile Organics, Semi-Volatile Organics, Pesticides/PCB and Metals data. This data has been reviewed by the Quality Assurance Manager for data completeness and adherence to the specified methodology. The data was reviewed to the requirements given in NYSDEC ASP 7/2005 revision. The following report has the findings for the SDG submitted for review.

If you should have any questions regarding this review, please feel free to contact me.

Sincerely,

Christopher Hess
Quality Assurance Manager

Adirondack Environmental Services, Inc.
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Data Validation / Usability Report for

H.M. Quackenbush

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Prepared for: Mr. Joe Naselli

Prepared by: Christopher Hess
Quality Assurance Manager
Adirondack Environmental Services, Inc.

Date Prepared: November 20, 2008

Adirondack Environmental Services, Inc.
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SDG: DEC 62 – Soil samples

General Findings:

- The SDG name should be based on the samples received. The SDG name is based on the laboratory project identification number.
- No case number assigned to this project.
- There are extra forms not required included in the data summary package.

Volatile Organics:

- ***No Method Detection Limits (MDL's) are given in the data package for Volatile Organics.***
- The samples were quantitated from the initial calibration curve as required.
- There were four internal standards analyzed instead of the three specified by NYSDEC ASP 7/2005 revision. There are many compounds that ware not quantitated to the required internal standard. This can make a difference in the final result. An example would be for Benzene in the calibration analyzed on 6/29/08. The data uses the internal standard Pentafluorobenzene, but the correct internal standard should be Chlorobenzene-d5. The reported average RRF for Benzene is 1.034. Using the correct internal standard the average RRF is 1.139. This would yield a difference in results for VMSB03 for Benzene of 53.6 ug/L versus the reported 51.7 ug/L.
- Samples SS-2 Re-analysis thru SS-7 Re-analysis and SS-9 were analyzed 11 days after the samples were received. The hold time specified by NYSDEC ASP 7/2005 for soils is 10 days from VTSR.
- The matrix spike blanks are reported as water samples in ug/L instead of soil samples in ug/Kg.
- The Form 5 from 6/26/08 shows that the Continuing Calibration Verification (CCV) was analyzed after the 12 hour time period. The CCV was analyzed on 6/27/08 at 1:23 am, which was two minutes past the 12 hour time frame.

Volatile Organics (continued):

- The initial calibration analyzed on 6/19/08 had Vinyl Chloride with a %RSD of 25.9 % and Bromomethane with a %RSD of 22.7 %. Also Acetone, 2-Butanone and 1,4-Dioxane had RRF's below 0.05 (0.036, 0.034 and 0.017, respectively).

- The initial calibration analyzed on 6/29/08 had 1,1,1-Trichloroethane with a %RSD of 22.6 %, cis-1,3-Dichloropropane with a %RSD of 50.4 %, trans-1,3-Dichloropropane with a %RSD of 67.8 %, and Bromoform with a %RSD of 33.2 %. The Form lists results for the "3" standard for the compounds cis-1,3-Dichloropropane and trans-1,3-Dichloropropane, but the raw data for this standard does not have these compounds. Hand calculations for the 10 to 200 standards yields cis-1,3-Dichloropropane with a %RSD of 39.4 % and trans-1,3-Dichloropropane with a %RSD of 54.9 %. Also Acetone and 1,4-Dioxane had RRF's below 0.05 (0.047 and 0.025, respectively).

- The continuing calibration from 6/21/08 has Bromomethane with a %D of 28.9 %.

- The continuing calibration from 6/30/08 has cis-1,3-Dichloropropane with a %D of 34.2 % and trans-1,3-Dichloropropane with a %D of 37.5 %.

- The reported list of compounds is short. This list appears to be the old Target Compound List from NYSDEC ASP revision 10/95. Compared to the NYSDEC ASP 7/2005 revision there are 12 compounds missing. There are also extra compounds not required on the Forms.

- The raw data for the samples and calibration analyzed are out of sequence. The chromatograms for the standards should be before the quantitation page for the corresponding standards.

- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Semi-Volatile Organics:

- ***No Method Detection Limits (MDL's) are given in the data package for Semi-Volatile Organics.***

- The samples were quantitated from the initial calibration curve as required.

- The curve from 7/8/08 is missing the raw data for the "20" standard.

- Samples SS-2 is diluted 1:10, but it could have been less dilute.

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Semi-Volatile Organics (continued):

- Sample SS-8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) had the % RPD for Pyrene above required limits. The %RPD for this compound was 45 %.

- Sample SS-8 MSD was analyzed after the 12 hour tune had expired. This sample was analyzed 36 minutes after the 12 hour tune.
- The SVBLK01 has a high recovery for the internal standard Perylene-d12.

- The raw data for the samples and calibration analyzed are out of sequence. The chromatograms for the standards should be before the quantitation page for the corresponding standards.

- There is no closing Continuing Calibration Verification (CCV) analyzed. The next CCV was analyzed more than 24 hours later.

- The reported list of compounds is short. This list appears to be the old Target Compound List from NYSDEC ASP revision 10/95. Compared to the NYSDEC ASP 7/2005 revision there are 6 compounds missing.

- The initial calibration has the compound bis(2-chloroethoxy)methane with an Average Response Factor of 0.287 and the required RRF for this compound is 0.300. Up to four compounds are allowed to exceed the specified limits.

- **The %D's for the compound Benzaldehyde in the Continuing Calibration Verification (CCV) analyzed on 7/8/08 at 16:00 exceed the required 25 %D and the 40 %D criteria as specified in NYSDEC ASP. The Form 7 has Benzaldehyde %D at 67 %.**

- **The %D's for five of the compounds in the Continuing Calibration Verification (CCV) analyzed on 7/9/08 at 17:15 exceed the required 25 %D criteria as specified in NYSDEC ASP. Two additional compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
2,4-Dinitrophenol	28.2 %
Fluoranthene	29.9 %
Butyl benzyl phthalate	28.6 %
Bis(2-ethylhexyl) phthalate	26.8 %
Di-n-octyl phthalate	30.0 %
Atrazine	49.8 %
Benzaldehyde	157.7 %

- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Pesticide/PCB:

- ***No Method Detection Limits (MDL's) are given in the data package for Pesticide/PCBs.***
- The samples were quantitated from the initial calibration curve as required, but only from one of the columns. The results from the lowest of the two columns should be reported.
- The date analyzed on the first Form 8 is given as 6/3/08, but the samples did not arrive until 6/19/08. The date on this Form 8 should be 7/3/08.
- All samples, except SS-4 are diluted 1:25, but one two samples (SS-1 and SS-2) had detectable levels of any compounds. Sample SS-4 was diluted 1:5. There is no mention in the case narrative regarding the reason for these dilutions.
- **The MID B standard analyzed on 7/3/08 at 15:31 on the DB35MS column had a recovery for delta-BHC of 26 %. The required limit is 25 %.**
- The sample Form 1's do not give results for Aroclor 1262 and Aroclor 1268
- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Inorganics - Metals:

- ***The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's)given in the data package for Metals at exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. Have the MDL/IDLs been updated on the date specified ?? The date given for the ICP MDL/IDL was 1/30/08 and there are two different results given for the same instrument. Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. (NYSDEC ASP 7/2005 version does have different CRDLs for these compounds). Also the Mercury and Cyanide MDL/IDL is exactly the same as the CRDL.***

Inorganics – Metals (continued):

- The Initial Calibration Verification (ICV) analyzed on 7/14/08 at 12:51 pm had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Antimony	112.1 %
Magnesium	110.7 %
Selenium	111.1 %
Silver	112.0 %
Zinc	111.6 %

- The Continuing Calibration Verification (CCV1) analyzed on 7/14/08 at 1:41 pm had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Antimony	89.6 %
Silver	111.4 %

- The Continuing Calibration Verification (CCV2) analyzed on 7/14/08 at 2:40 pm had recoveries for the following compounds above the required 90-110 % recovery.

Compound	% Recovery
Selenium	110.6 %
Silver	111.8 %

- The Continuing Calibration Verification (CCV1) analyzed on 7/30/08 at 12:41 pm had recovery for Manganese of 115.3 %, above the required 90-110 % recovery.

- The CRI1 analyzed on 7/14/08 had recoveries for Antimony of 68.1 % and Zinc of 125.0 %. The CRI2 analyzed on 7/14/08 had recoveries for Antimony of 67.9 % and Zinc of 125.1 %.

- The CRI1 analyzed on 7/22/08 had a recovery for Zinc of 121.5 %. The CRI2 analyzed on 7/22/08 had a recovery for Zinc of 124.1 %.

- The Form 3 for ICP analysis from 7/14/08 has the Continuing Calibration Blank (CCB1) for Lead with a result of 6.2 ug/L. The following Continuing Calibration Blank (CCB2) had a result for Lead of 3.2 ug/L, which are above the required CRDL.

Inorganics – Metals (continued):

- The Form 3 for ICP analysis from 7/30/08 has the Initial Calibration Blank (ICB) for Antimony with a result of 20.4 ug/L.

- The Form 3 for Cyanide has the Initial Calibration Blank (ICB) with a result of 0.0 U ??

- The spike recovery for SS-8 for Antimony was 58.9 % and for Manganese was 129.8 %. This is flagged on the Form 1's as required. The spike for Silver had 12.47 mg/Kg in the spike and 77.29 mg/Kg in the sample. The spike levels for Arsenic (2000 ug/L), Lead (500 ug/L), Selenium (2000 ug/L) and Thallium (2000 ug/L) are much higher than the required levels. The required levels for these compounds are Arsenic (40 ug/L), Lead (20 ug/L), Selenium (50 ug/L) and Thallium (50 ug/L). A post digestion spike was performed for Antimony and Manganese and the recoveries were within acceptable limits.

- The sample results on the Form 6 are given as 0.0000 U for non-detects. The sample result for Silver was 77.2885 mg/Kg and the duplicate result was 0.0000 U.

- The recoveries for three compounds in the laboratory control sample were outside specified limits. The following compounds had low recoveries.

Compound	% Recovery
Chromium	79.6 %
Manganese	80.7 %
Vanadium	74.5 %

- The Form 9 for Serial Dilution has recoveries for four elements (Aluminum, Iron, Lead and Manganese) that are outside the required limits. The required range is 10 %. These four elements are flagged with an "E" as required on the Form 1's. There were an additional five elements (Cadmium, Chromium, Copper, Magnesium and Zinc) that also had a recovery greater than 10 % and according to one of the IDL/MDL forms have results greater than 50 times the IDL.

Compound	% Recovery
Aluminum	10.8 %
Cadmium	16.4 %
Chromium	11.6 %
Copper	17.6 %
Iron	16.1 %
Lead	19.4 %
Magnesium	15.9 %
Manganese	16.3 %
Zinc	45.8 %

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Inorganics – Metals (continued):

- **One of the Form 10 lists a CRDL for Antimony of 120 ug/L. The required CRDL level is 60 ug/L.**

- **The Form 10 gives exact numbers for the MDL/IDL as mentioned previously. The instrument ID on the Form 10 is ICP 58.0. The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 58.0. This would be two separate Instrument ID's. Which instruments were used for analysis and is there appropriate forms for each instrument.**

- **The ICP raw data has large negative results for Arsenic and Vanadium for sample SS-3. The Arsenic result was –163 ug/L and the Vanadium result was –293 ug/L.**

- **The ICP raw data from 7/14/08 has more than 10 samples between ICB to the next CCV. There are a total of 12 samples analyzed. Also, one of the raw data pages is missing (page 14 from run). The next set from CCB1 to CCV2 has 14 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 7/22/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 7/30/08 has no ICSA/ICSAB analyzed at the beginning or end of the analytical run. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The Cyanide run from 6/27/08 has more than 10 analyses between CCB to CCV. Some groups between CCB to CCV have 11 samples and some have 13 samples. The samples in this SDG have 10 samples for the first CCB to CCV and then 11 samples for the nest CCB to CCV. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

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Data Review Summary

The data packages submitted are not completely in the format specified by the New York State DEC for ASP data packages (NYSDEC ASP 7/2005 revision, pages B-6 through B-56).

Volatile Organics

Conclusion: Samples SS-2 Re-analysis thru SS-7 Re-analysis and SS-9 were analyzed 11 days after the samples were received. The hold time specified by NYSDEC ASP 7/2005 for soils is 10 days from VTSR. **The initial calibration from 6/19/08 had the compounds Acetone, 2-Butanone and 1,4-Dioxane had RRF values below 0.05. The initial calibration from 6/29/08 had the compounds cis-1,3-Dichloropropane, trans-1,3-Dichloropropane and Bromoform with a %RSD of greater than 30 %. Also Acetone and 1,4-Dioxane had RRF values below 0.05. The continuing calibration from 6/30/08 has cis-1,3-Dichloropropane with a %D of 34.2 % and trans-1,3-Dichloropropane with a %D of 37.5 %. Samples SS-2 Re-analysis thru SS-7 Re-analysis, SS-9 and Field Duplicate Re-analysis for the compound Bromoform should be flagged with an "UJ" for non-detects and "J" for any positive results due to the initial and continuing calibration. All Samples for the compounds Acetone, 2-Butanone, cis-1,3-Dichloropropane, trans-1,3-Dichloropropane and 1,4-Dioxane should be flagged with an "R" for non-detects due to the initial and continuing calibration.** The closing CCV10 analyzed with the sample run beginning 6/26/08 was analyzed 2 minutes after the 12 hour time period. A total of 12 compounds are missing from the TCL compound listing from NYSDEC ASP 7/2005 version. **Due to the wrong internal standards used for quantitation all positive results should be flagged with a "J" for estimated value.**

Semi-Volatile Organics

Conclusion: **The compounds 2,4-Dinitrotoluene and Benzaldehyde for the samples analyzed on 7/8/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to calibration over 25 % D. The compounds Atrazine, Benzaldehyde, 2,4-Dinitrotoluene, Fluoranthene, Butyl benzyl phthalate, Bis (2-ethylhexyl)phthalate and Di-n-octyl phthalate for the samples analyzed on 7/9/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to calibration over 25 % D.**

A continuing calibration was not analyzed at the end of each 12 hour tune.

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Data Review Summary (continued)

Pesticide/PCBs

Conclusion: The samples were diluted 1:25, but only two samples had detectable level of compounds and no mention of the reason for the dilutions was made in the case narrative. The compound delta-BHC in the MID B analyzed on 7/3/08 at 15:31 on the DB35MS column was greater than 25 %. **The compound delta-BHC should be flagged with an "UJ" for non-detects due to the continuing calibration.**

The sample Form 1's do not give results for Aroclor 1262 and Aroclor 1268.

Metals

Conclusion: In general the analysis for metals was poor. The analysis for ICP metals was analyzed not following the criteria for continuing calibration verification. The analysis from 7/14/08 had 12 samples analyzed between the ICB and the next CCV (10 samples are allowed). The CCB to CCV group had 14 samples analyzed.

Several compounds had high recoveries in the CCV's (Magnesium, Selenium, Silver and Zinc). **Positive results for Magnesium, Selenium, Silver and Zinc should be flagged as "J" for estimated.**

The instrument blanks analyzed on 7/14/08 had Lead present at 6.2 ug/L and 3.2 ug/L. All results for Lead were more than 10 times this blank value. The instrument blank analyzed on 7/30/08 had Antimony present at 20.4 ug/L. **All Antimony non-detect results should be reported (based on 100 % Solids) as 4.1 U on the Form 1's (< 20.4 ug/L which calculates to < 4.1 mg/Kg) for all samples due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The raw data for Arsenic and Vanadium for sample SS-3 had large negative results. **The results for Arsenic and Vanadium for this sample should be with an "R" as unusable for non-detects.**

Data Review Summary (continued)

Metals

Conclusion: The recovery for Antimony in the matrix spike was 58.9 % and the post-digestion spike was 105.2 %. **The results for Antimony should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The recovery for the Laboratory Control Sample (LCS) for Chromium, Manganese and Vanadium was lower than the required limits. **Non-Detect results for Chromium, Manganese and Vanadium should be flagged as "UJ" for estimated. Positive results for Chromium, Manganese and Vanadium should be flagged as "J-" for estimated low.**

The serial dilution recoveries for Aluminum, Chromium, Copper, Iron, Lead, Magnesium, Manganese and Zinc were above the required limits. **Positive results for Aluminum, Copper, Iron and Lead should be flagged as "J" for estimated.**

The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's) given in the data package for Metals at exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. The date given for the ICP MDL/IDL was 1/30/08 and there are two different MDL/IDL forms for the same instrument with very different values. It is questionable if the MDL/IDL information is correct. Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. **The results for Arsenic, Cadmium, Lead and Thallium should be flagged with an "UJ" for non-detects.**

The instrument ID on the Form 10 is ICP 58.0. The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 58.0. This would be two separate Instrument ID's.

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Data Review Summary (continued)

Metals

Conclusion: Due to the inconsistencies in the calibration sequence with more than 10 samples between ICB to CCV, the MDL/IDL information and difference in instrument ID's between the Forms 10,11,12 and 14 to following general statement is given. **All parameters not specified above would have results considered as estimated**. Further data documentation may be necessary to qualify the results. If the laboratory could provide better documentation and actual, current results for the information contained in these forms a better review could be determined.

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December 9, 2008

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Attn: Mr. Joe Naselli

Dear Mr. Naselli:

Adirondack Environmental Services, Inc. has completed the data validation / usability review for the data package for H.M. Quackenbush project. Upstate Laboratories in East Syracuse, New York analyzed the samples in this data package in June-September 2008. There was one SDG submitted for review with Upstate Laboratories SDG: DEC 63 with 177 soils samples and 3 Trip Blanks. This project included Volatile Organics, Semi-Volatile Organics, Pesticides/PCB and Metals data. This data has been reviewed by the Quality Assurance Manager for data completeness and adherence to the specified methodology. The data was reviewed to the requirements given in NYSDEC ASP 7/2005 revision. The following report has the findings for the SDG submitted for review.

If you should have any questions regarding this review, please feel free to contact me.

Sincerely,

Christopher Hess
Quality Assurance Manager

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Data Validation / Usability Report for

H.M. Quackenbush

OP-Tech Environmental Services
150 Rotterdam Ind. Park
Schenectady, New York 12306

Prepared for: Mr. Joe Naselli

Prepared by: Christopher Hess
Quality Assurance Manager
Adirondack Environmental Services, Inc.

Date Prepared: December 9, 2008

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SDG: DEC 63 – Soil samples

General Findings:

- **There were 177 samples, which were in a single SDG. There should be no more than 20 samples per SDG as given by the NYSDEC ASP 7/2005 revision.**
- The samples were received over several days starting on 6/20/08 and ending on 7/7/08. There were 46 samples received on 6/20/08, 41 samples received on 6/23/08, 83 samples received on 6/25/08 and 5 samples received on 7/7/08.
- The SDG name should be based on the samples received. The SDG name is based on the laboratory project identification number.
- No case number assigned to this project.
- There are extra forms not required included in the data summary package.
- The internal chain of custody records shows that Cyanide was signed out for laboratory samples 159-174 on 7/8/08. **No other samples are signed out for Cyanide, yet all samples required Cyanide.**
- There are many Metals samples that have not been signed out on the internal chain of custody records.
- Laboratory sample 5 was received on 6/20/08 and prepared on 6/27/08, but the sign out page has 7/7/08 as the date.

Volatile Organics (42 samples total: 39 soils and 3 trip blanks):

- ***No Method Detection Limits (MDL's) are given in the data package for Volatile Organics.***
- The samples were quantitated from the initial calibration curve as required.

Volatile Organics (continued):

- There were four internal standards analyzed instead of the three specified by NYSDEC ASP 7/2005 revision. There are many compounds that ware not quantitated to the required internal standard. This can make a difference in the final result. An example would be for Benzene in the calibration analyzed on 6/29/08. The data uses the internal standard Pentafluorobenzene, but the correct internal standard should be Chlorobenzene-d5. The reported average RRF for Benzene is 1.034. Using the correct internal standard the average RRF is 1.139.

- The blanks are reported as water samples in ug/L instead of soil samples in ug/Kg.

- The matrix spike blanks are reported as water samples in ug/L instead of soil samples in ug/Kg.

- The Form 5 for instrument 13 from 6/25/08 shows that the Continuing Calibration Verification (CCV) was analyzed after the 12 hour time period. The CCV was analyzed seven hours and ten minutes past the 12 hour time frame.

- The Form 5 for instrument 13 from 6/26/08 shows that the Continuing Calibration Verification (CCV) was analyzed after the 12 hour time period. The CCV was analyzed two minutes past the 12 hour time frame.

- The Form 5 for instrument 12 from 7/2/08 shows that the Continuing Calibration Verification (CCV) was analyzed after the 12 hour time period. The CCV was analyzed thirty-eight minutes past the 12 hour time frame.

- The Form 5 for instrument 12 from 7/3/08 shows that the Continuing Calibration Verification (CCV) was analyzed after the 12 hour time period. The CCV was analyzed one hour and sixteen minutes past the 12 hour time frame.

- The initial calibration from instrument 12 analyzed on 6/19/08 had Vinyl Chloride with a %RSD of 25.9 %, Acetone with a %RSD of 37.7 % and Bromomethane with a %RSD of 22.7 %. Also Acetone, 2-Butanone and 1,4-Dioxane had RRF's below 0.05 (0.036, 0.034 and 0.017, respectively). Also the "100" standard had internal standard values that were roughly ¼ of the other internal standards for the other standards analyzed in this curve. **The values presented for this curve on the Form 6 are incorrect. All manual edit were not updated before calculating the new RRF's. All compounds with manual edits have the wrong values assigned. Since the 20, 100 and 200 standards all had manual edits for the internal standards, all compounds under these internal standards would be affected. The internal standards Pentafluorobenzene and Chlorobenzene-d5 were affected by these manual edits.**

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Volatile Organics (continued):

- The initial calibration for instrument 13 analyzed on 6/24/08 had Acetone and 1,4-Dioxane had RRF's below 0.05 (0.038 and 0.046, respectively).
- The initial calibration for instrument 12 analyzed on 7/1/08 had Bromomethane with a %RSD of 22.1 %. Also 1,4-Dioxane had a RRF of 0.046, which is below the required 0.05.
- The initial calibration for instrument 13 analyzed on 7/3/08 had Acetone and 1,4-Dioxane had RRF's below 0.05 (0.041 and 0.042, respectively).
- The continuing calibration for instrument 12 from 6/23/08 at 17:40 has Bromomethane with a %D of 25.1 %, Chloromethane with a %D of 30.4 %, Vinyl Chloride with a %D of 28.8 % and Chloroethane with a %D of 29.1 %.
- The continuing calibration for instrument 13 from 6/27/08 at 1:23 (Final CC) has Tetrachloroethane with a %D of 55.6 %.
- The continuing calibration for instrument 12 from 7/4/08 at 10:54 has Bromomethane with a %D of 34.0 % and trans-1,3-Dichloropropane with a %D of 27.3 %.
- The continuing calibration for instrument 12 from 7/7/08 at 14:00 has Vinyl Chloride with a %D of 28.2 %.
- The continuing calibration for instrument 12 from 7/8/08 at 11:29 has Bromomethane with a %D of 31.7 %, 2-Butanone with a %D of 31.3 % and trans-1,3-Dichloropropane with a %D of 36.1 %.
- The continuing calibration for instrument 13 from 7/10/08 at 14:45 has 4-Methyl-2-pentanone with a %D of 52.3 %.
- The continuing calibration for instrument 12 from 7/11/08 at 14:12 has Bromomethane with a %D of 30.0 %, Vinyl Chloride with a %D of 27.0 % and trans-1,3-Dichloropropane with a %D of 46.1 %.
- The continuing calibration for instrument 13 from 7/12/08 at 1:28 (Final CC) has 1,4-Dioxane with a %D of 59.9 %.
- The reported list of compounds is short. This list appears to be the old Target Compound List from NYSDEC ASP revision 10/95. Compared to the NYSDEC ASP 7/2005 revision there are 12 compounds missing. There are also extra compounds not required on the Forms.

Volatile Organics (continued):

- The raw data for the samples and calibration analyzed are out of sequence. The chromatograms for the should be before the quantitation page for the corresponding standards/samples.

- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Semi-Volatile Organics (34 soils samples):

- ***No Method Detection Limits (MDL's) are given in the data package for Semi-Volatile Organics.***

- The samples were extracted on 6/27/08 and 6/28/08 and analyzed on 8/26/08 thru 8/29/08. **This is more than 60 days from date of extraction to date of analysis.** Sample SB-31D was extracted on 7/12/08 and analyzed on 8/28/08. **Sample SB-31D was analyzed 47 days after extraction.**

- **The internal standards for the samples analyzed on 7/9/08 were outside limits. These samples were not re-analyzed.**

- The samples were quantitated from the initial calibration curve as required.

- The curve from 7/8/08 is missing the raw data for the "20" standard.

- Sample SB-21E was analyzed after the 12 hour tune had expired. This sample was analyzed 13 minutes after the 12 hour tune.

- Sample SB-21E RE was analyzed after the 12 hour tune had expired. This sample was analyzed 17 minutes after the 12 hour tune.

- The recoveries for the compounds 4-Nitrophenol and 2,4-Dinitrotoluene in the MSB02 were higher than the required limits. The recoveries for these compounds were 153 % and 132 %, respectively.

- The recoveries for the compounds 4-Nitrophenol and 2,4-Dinitrotoluene in the MSB03 were higher than the required limits. The recoveries for these compounds were 120 % and 102 %, respectively.

- The raw data for the samples and calibration analyzed are out of sequence. The chromatograms for the standards should be before the quantitation page for the corresponding standards.

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Semi-Volatile Organics (continued):

- There is no closing Continuing Calibration Verification (CCV) analyzed. The next CCV was analyzed more than 24 hours later.

- The initial calibration from 7/8/08 has the compound bis(2-chloroethoxy)methane with an Average Response Factor of 0.287 and the required RRF for this compound is 0.300. The initial calibration from 7/8/08 has the compound 2,4-Dinitrotoluene with a %RSD of 35.0. Up to four compounds are allowed to exceed the specified limits.

- **The %D's for five of the compounds in the Continuing Calibration Verification (CCV) analyzed on 7/9/08 at 17:15 and 18:41 exceed the required 25 %D criteria as specified in NYSDEC ASP. Two compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
2,4-Dinitrophenol	28.2 %
Fluoranthene	29.9 %
Butyl benzyl phthalate	28.6 %
Bis(2-ethylhexyl) phthalate	26.8 %
Di-n-octyl phthalate	30.0 %
Atrazine	49.8 %
Benzaldehyde	157.7 %

- **The %D's for five of the compounds in the Continuing Calibration Verification (CCV) analyzed on 8/26/08 at 10:17 and 11:45 exceed the required 25 %D criteria as specified in NYSDEC ASP. Three compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
Bis(2-ethylhexyl) phthalate	30.4 %
Di-n-octyl phthalate	28.4 %
Atrazine	46.7 %
Benzaldehyde	74.0 %
Caprolactam	40.6 %

Semi-Volatile Organics (continued):

- **The %D's for sixteen of the compounds in the Continuing Calibration Verification (CCV) analyzed on 8/27/08 at 12:14 and 12:59 exceed the required 25 %D criteria as specified in NYSDEC ASP. Fourteen compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
3-Nitroanaline	55.4 %
2,4-Dinitrophenol	78.7 %
2,4-Dinitrotoluene	46.8 %
4-Nitrophenol	97.7 %
4-Nitroanaline	166.1 %
Cabazole	64.2 %
Fluoranthene	56.6 %
Pyrene	39.2 %
Di-n-octyl phthalate	47.4 %
Indeno(1,2,3-cd)pyrene	71.7 %
Benzo(b)fluoranthene	27.6 %
Dibenzo(a,h)anthracene	66.7 %
Benzo(g,h,i)perylene	74.5 %
Atrazine	110.1 %
Benzaldehyde	60.6 %
Biphenyl	43.7 %

- **The %D's for thirteen of the compounds in the Continuing Calibration Verification (CCV) analyzed on 8/28/08 at 11:54, 12:48 and 14:18 exceed the required 25 %D criteria as specified in NYSDEC ASP. Eight compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
3-Nitroanaline	26.7 %
2,4-Dinitrotoluene	37.3 %
4-Nitrophenol	42.2 %
4-Nitroanaline	51.8 %
Cabazole	40.7 %
Fluoranthene	40.2 %
Pyrene	27.1 %
Butyl benzyl phthalate	42.9 %
Bis(2-ethylhexyl) phthalate	48.1 %
Di-n-octyl phthalate	32.7 %
3,3'-Dichlorobenzene	34.6 %
Benzaldehyde	84.6 %
Caprolactam	78.2 %

Semi-Volatile Organics (continued):

- **The %D's for seven of the compounds in the Continuing Calibration Verification (CCV) analyzed on 8/29/08 at 11:43 and 13:56 exceed the required 25 %D criteria as specified in NYSDEC ASP. Six compounds from this CCV also exceeded the 40 %D criteria.**

Compound	%RSD
2,4-Dinitrotoluene	27.5 %
Butyl benzyl phthalate	40.6 %
Bis(2-ethylhexyl) phthalate	40.1 %
Di-n-octyl phthalate	69.7 %
Atrazine	59.8 %
Benzaldehyde	64.9 %
Caprolactam	47.6 %

- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Pesticide/PCB (32 Soils):

- ***No Method Detection Limits (MDL's) are given in the data package for Pesticide/PCBs.***
- The Form 1's specify separatory funnel extraction (SEPF), but the samples were soil samples. The correct extraction procedure would be sonication (SONC).
- The samples were quantitated from the initial calibration curve as required, but only from one of the columns. The results from the lowest of the two columns should be reported.
- The Forms 6,7 and 8 are not in the correct sequence as given by NYSDEC ASP 7/2005 revision. The PIBLK data is not in the correct location in the data package.
- The date analyzed on the first Form 8 is given as 6/3/08, but the samples did not arrive until 6/19/08. The date on this Form 8 should be 7/3/08.
- **All samples are diluted 1:25 and had no detectable levels of any compounds. There is no mention in the case narrative regarding the reason for these dilutions.**
- **All surrogates are diluted out.**
- **The matrix spike and matrix spike duplicate are diluted out.**

Pesticide/PCB (continued):

- **The curve analyzed on 6/19/08 on the DB-XLB column for the compound 4,4'-DDT should have a RF in the mid standard of 2.6135 and the mean RF for this compound should be 2.6975 and the %RSD would be 8.51 %.**
- **The curve analyzed on 6/19/08 on the DB-35MS column for the compound 4,4'-DDT should have a RF in the mid standard of 1.484 and the mean RF for this compound should be 1.4104 and the %RSD would be 16.71 %.**
- **Due to the variance found for the curves for the compound 4,4'-DDT the other calculations in the PEM, MIDA checks and the Matrix Spike Blank are also slightly different.**
- **The MID A standard analyzed on 7/21/08 at 6:28 on the DB35MS column had a recovery for the compound 4,4'-DDD of 33.0 %. The required limit is 25 %. A hand calculation for this compound gave a recovery of 28.1 %.**
- **The PCB 1016 check standard analyzed on 7/3/08 at 18:22 on the DB35MS column had a %D recovery of 21.0 %. The PCB 1016 check standard analyzed on 7/4/08 at 4:29 on the DB35MS column had a %D recovery of 16.0 %.**
- **The PCB 1260 check standard analyzed on 7/3/08 at 18:22 on the DB35MS column had a %D recovery of 30.0 %. The PCB 1260 check standard analyzed on 7/4/08 at 4:29 on the DB35MS column had a %D recovery of 27.0 %.**
- **The PCB 1016 check standard analyzed on 7/9/08 at 18:59 on the DB35MS column had a %D recovery of 16.0 %. The PCB 1016 check standard analyzed on 7/10/08 at 4:41 on the DB35MS column had a %D recovery of 16.0 %.**
- **The PCB 1260 check standard analyzed on 7/9/08 at 18:59 on the DB35MS column had a %D recovery of 22.0 %. The PCB 1260 check standard analyzed on 7/10/08 at 4:41 on the DB35MS column had a %D recovery of 15.3 %.**
- The sample Form 1's do not give results for Aroclor 1262 and Aroclor 1268
- No actual sample calculations are provided. Only copies of pages from the NYSDEC ASP 10/95 revision of how to perform the calculations.

Inorganics – Metals (173 Soils):

- ***The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's)given in the data package for Metals at exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. Have the MDL/IDLs been updated on the date specified ?? Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. (NYSDEC ASP 7/2005 version does have different CRDLs for these compounds). Also the Mercury and Cyanide MDL/IDL is exactly the same as the CRDL.***

- **The flags on the Form 1's do not account for the preparation batches. There are flags such as ***EEE for Aluminum and ****EEEEE for Manganese. If these elements are to be flagged it should be based on the preparation batch and only one "*" or one "E" should be used.**

- **All Continuing Calibration Verifications analyzed for Silver had recoveries above the required 90-110 % recovery. These recoveries ranged from 113 % to 123 %.**

- The Initial Calibration Verification (ICV) analyzed on instrument 58.0 on 8/25/08 at 2:34 pm had recovery for Potassium of 89.4 %, below the required 90-110 % recovery. The Continuing Calibration Verifications (CCV) analyzed on this day for Antimony had recoveries of 89.6 % and 89.3 %, below the required 90-110 % recovery.

- The Initial Calibration Verification (ICV) analyzed on instrument 17.0 on 8/25/08 at 3:40 pm had recoveries for the following compounds below the required 90-110 % recovery.

Compound	% Recovery
Calcium	89.7 %
Potassium	88.7 %
Sodium	89.7 %

- The Initial Calibration Verification (ICV) analyzed on instrument 17.0 on 9/2/08 at 1:24 pm had recovery for Potassium of 89.4 %, below the required 90-110 % recovery.

Inorganics – Metals (continued):

- The Continuing Calibration Verification (CCV1) analyzed on instrument 17.0 on 9/2/08 at 2:20 pm had recoveries for the following compounds below the required 90-110 % recovery.

Compound	% Recovery
Antimony	76.6 %
Arsenic	76.4 %
Calcium	76.1 %
Lead	77.4 %
Selenium	78.5 %
Thallium	76.1 %

- The Initial Calibration Verification (ICV) analyzed on instrument 17.0 on 9/3/08 at 10:19 am had recovery for Potassium of 88.8 %, below the required 90-110 % recovery.

- The Continuing Calibration Verifications analyzed on instrument 17.0 on 9/9/08 had recoveries for the following compounds above the required 90-110 % recovery.

	Arsenic	Selenium	Zinc
CCV1		122.8	117.9
CCV2		123.7	118.6
CCV3	112.2	126.5	122.9
CCV4	115.5	130.5	126.1
CCV5	113.8	127.9	126.0
CCV6	112.0	125.8	123.1

- The Continuing Calibration Verification (CCV1) analyzed on 7/24/08 at 4:35 pm for Mercury had recovery of 132 %, above the required 80-120 % recovery. The Continuing Calibration Verification (CCV2) analyzed on 7/24/08 at 4:49 pm for Mercury had recovery of 131 %, above the required 80-120 % recovery.

- The Continuing Calibration Verification (CCV1) analyzed on 7/25/08 at 2:42 pm for Mercury had recovery of 122 %, above the required 80-120 % recovery. **The Continuing Calibration Verification (CCV6) analyzed on 7/25/08 at 3:53 pm for Mercury had recovery of 0 %, below the required 80-120 % recovery. The Continuing Calibration Verification (CCV7) analyzed on 7/25/08 at 4:08 pm for Mercury had recovery of 0 %, below the required 80-120 % recovery.**

- The Continuing Calibration Verification (CCV5) analyzed on 7/30/08 at 12:41 pm for Mercury had recovery of 72.3 %, below the required 80-120 % recovery.

Inorganics – Metals (continued):

- The continuing calibration verification for Cyanide has various levels for the CCV (100, 200 and 0.1) The CCV at 0.1 ug/L would not be possible.
- The CRI1 analyzed on 7/31/08 had recovery for Selenium of 57.5 %.
- The CRI1 analyzed on 8/6/08 had a recovery for Zinc of 163.7 %. The CRI2 analyzed on 8/6/08 had recoveries for Selenium and Zinc of 77.4 % and 165.7 %, respectively.
- The CRI1 analyzed on 8/20/08 on instrument 17.0 at 10:13 am had recoveries for Lead and Selenium of 70.8 % and 127.7 %, respectively. The CRI2 analyzed on 8/20/08 had recoveries for Arsenic and Lead of 67.2 % and 58.2 %, respectively.
- The CRI1 analyzed on 8/20/08 on instrument 17.0 at 1:03 pm had recoveries for Lead, Selenium and Thallium of 124.7 %, 13.5 % and 134.8 %, respectively. The CRI2 analyzed on 8/20/08 had recoveries for Silver and Thallium of 122.8 % and 133.4 %, respectively.
- The CRI1 analyzed on 8/25/08 on instrument 58.0 had recoveries for Lead, Nickel and Zinc of 134.2 %, 2409 % and 140.2 %, respectively. The CRI2 analyzed on 8/25/08 had recoveries for Antimony and Zinc of 70.1 % and 199.2 %, respectively.
- The CRI1 analyzed on 8/25/08 on instrument 17.0 had recoveries for Antimony and Selenium of 73.9 % and 133.9 %, respectively. The CRI2 analyzed on 8/25/08 had recoveries for Antimony, Arsenic and Lead of 79.1 %, 121.0 % and 125.5 %, respectively.
- The CRI1 analyzed on 9/2/08 on instrument 17.0 had recoveries for Selenium and Thallium of 139.2 % and 122.4 %, respectively. The CRI2 analyzed on 9/2/08 had recoveries for Lead, Selenium and Thallium of 123.4 %, 26.4 % and 137.5 %, respectively.
- The CRI1 analyzed on 9/3/08 on instrument 17.0 had recoveries for Arsenic and Selenium of 61.5 % and 24.0 %, respectively. The CRI2 analyzed on 9/3/08 had recoveries for Antimony and Selenium of 121.8 % and 40.3 %, respectively.
- The CRI1 analyzed on 9/4/08 on instrument 58.0 had recovery for Copper of 74.0 %. The CRI2 analyzed on 9/4/08 had recoveries for Copper and Thallium of 70.3 % and 121.8 %, respectively.
- The CRI1 analyzed on 9/8/08 on instrument 17.0 had recovery for Selenium of 180.9 %. The CRI2 analyzed on 9/8/08 had recovery Selenium of 0 %.
- The CRI1 analyzed on 9/9/08 on instrument 17.0 had recoveries for Arsenic, Selenium and Zinc of 128.6 %, 120.2 % and 133.7 %, respectively. The CRI2 analyzed on 9/9/08 had recoveries for Selenium and Zinc of 49.5 % and 144.1 %, respectively.

Inorganics – Metals (continued):

- The CRI1 analyzed on 9/12/08 on instrument 58.0 had recoveries for Silver and Zinc of 122.9 % and 123.2 %, respectively. The CRI2 analyzed on 9/12/08 had recoveries for Arsenic, Lead, Manganese, Silver, Thallium and Zinc of 128.5 %, 127.3 %, 120.2 %, 125.8 %, 120.5 and 128.4 %, respectively.

- The CRI1 analyzed on 9/23/08 on instrument 58.0 had recoveries for Arsenic and Lead of 121.3 % and 131.6 %, respectively. The CRI2 analyzed on 9/23/08 had recoveries for Selenium and Thallium of 69.9 % and 131.9 %, respectively.

- The CRI1 analyzed on 7/22/08 for Mercury had a recovery of 39.2 %.

- The CRI1 analyzed on 9/23/08 for Mercury had a recovery of 169 %. This analysis shows only preparation blanks and LCSS samples. **This analysis was performed more than 2 months after the samples were digested. Any result from this analytical run would be unusable.**

- The ICP analysis from all days had Antimony in the Initial and Continuing Calibration Blanks (ICB/CCB) with results greater than the IDL. The general values ranged from 27.6 ug/L to 57.1 ug/L. **The ICP analysis from 9/12/08 had values above the CRDL. The CCB1 for this day was 73.6 ug/L and the results for CCB2 was 77.3 ug/L.**

- **The Form 3 for ICP analysis from 8/20/08 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 5.3 ug/L. The Continuing Calibration Blank (CCB2) had a result for Selenium of 8.8 ug/L. The Continuing Calibration Blank (CCB3) had a result for Selenium of 10.6 ug/L, which are above the required CRDL.**

- **The Form 3 for ICP analysis from 8/25/08 for instrument 17.0 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 7.1 ug/L. The Continuing Calibration Blank (CCB2) had a result for Selenium of 14.7 ug/L. The Continuing Calibration Blank (CCB3) had a result for Selenium of 17.0 ug/L, which are above the required CRDL.**

- **The Form 3 for ICP analysis from 9/3/08 has the Continuing Calibration Blank (CCB2) for Lead with a result of 3.7 ug/L. The Continuing Calibration Blank (CCB3) had a result for Lead of 3.1 ug/L, which are above the required CRDL.**

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Inorganics – Metals (continued):

- The Form 3 for ICP analysis from 9/4/08 has the Initial Calibration Blank (ICB1) for Copper and Iron with a result of –11.0 ug/L and –75.0 ug/L, respectively. The Continuing Calibration Blank (CCB1) had a result for Copper and Iron with a result of –11.0 ug/L and –71.0 ug/L, respectively. The Continuing Calibration Blank (CCB2) had a result for Copper and Iron with a result of –10.0 ug/L and –68.0 ug/L, respectively. The Continuing Calibration Blank (CCB3) had a result for Copper and Iron with a result of –11.0 ug/L and –69.0 ug/L, respectively. The Continuing Calibration Blank (CCB4) had a result for Copper and Iron with a result of –12.0 ug/L and –66.0 ug/L, respectively, which are greater than the required CRDL. Also the preparation blank analyzed on this day had Aluminum at 137.5 ug/L, Copper at –10.1 ug/L, Iron at –64.1 ug/L and Zinc at 20.6 ug/L.

- **The Form 3 for ICP analysis from 9/8/08 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 9.9 ug/L. The Continuing Calibration Blank (CCB2) had a result for Selenium of 5.0 ug/L. The Continuing Calibration Blank (CCB3) had a result for Selenium of 13.5 ug/L, which are above the required CRDL. The analysis on this date was for Selenium.**

- **The Form 3 for ICP analysis from 9/9/08 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 8.9 ug/L. The Continuing Calibration Blank (CCB2) had a result for Selenium of 6.5 ug/L.**

- **The Form 3 for Mercury analysis from 7/22/08 has the Preparation Blank (14567) with a result of 0.072 mg/Kg, which is above the CRDL.**

- Some of the Form 3's for Cyanide has the Initial Calibration Blank (ICB) and Continuing Calibration Blank (CCB) with a result of 0.0 U ?? Also some of the CCB are given as 10.0 U and some are given as 1.0 U.

- The interferant check samples (ICSA/ICSAB) analyzed on the ICP have a large negative result for Sodium. The results range from –1208 to –4593. The interferant check samples (ICSA/ICSAB) analyzed on the ICP have a large negative result for Arsenic. The results range from –8.7 to –42.0. The interferant check samples (ICSA/ICSAB) analyzed on the ICP have a large negative result for Selenium. The results range from –18.9 to –154.5. The recoveries for Silver have a high bias. The recoveries for Silver in the ICSA/ICSAB range from 121.3 % to 131.2 %.

- The spike levels for Arsenic (2000 ug/L), Lead (500 ug/L), Selenium (2000 ug/L) and Thallium (2000 ug/L) are much higher than the required levels. The required levels for these compounds are Arsenic (40 ug/L), Lead (20 ug/L), Selenium (50 ug/L) and Thallium (50 ug/L). A post digestion spike was performed for Antimony and Manganese and the recoveries were within acceptable limits.

Inorganics – Metals (continued):

- The spike recovery for SB-10F for Chromium was 73.4 % and for Zinc was 65.6 %. No post spike was performed.

- The spike recovery for SB-17C for Manganese was 27.6 %, Mercury was 38.3 % and Cyanide was 56.5 %. A post spike was performed for Manganese and the recovery was 100.6 %. Also the page for this form was in the data package twice.

- The recoveries for several elements in the spike for SB-22B were outside specified limits. The following elements compounds had recoveries outside required limits. A post spike was performed only for Nickel and Zinc and the recoveries were 113.3 % and 95.5 %, respectively.

Compound	% Recovery
Cadmium	7.0 %
Chromium	-33.2 %
Copper	65.4 %
Manganese	41.1 %
Nickel	48.7 %
Silver	162.6 %
Zinc	-257.8 %
Cyanide	128 %

- The recoveries for several elements in the spike for SB-23A were outside specified limits. The following elements compounds had recoveries outside required limits. A post spike was performed only for Nickel and Zinc and the recoveries were 112.5 % and 149 %, respectively.

Compound	% Recovery
Arsenic	65.3 %
Barium	62.6 %
Copper	18.4 %
Manganese	23.4 %
Nickel	162.5 %
Silver	129.9 %
Zinc	59.3 %
Mercury	-131.5 %

- The spike recovery for SB-26C for Manganese was 382 %. A post spike was performed for Manganese and the recovery was 93.5 %.

- The spike recovery for SB-2D for Silver was 130.6 %. No post spike is required for Silver.

Inorganics – Metals (continued):

- The spike recovery for SB-5D for Antimony was 43.5 %. A post spike was performed for Antimony and the recovery was 101.5 %.

- The recoveries for several elements in the spike for SB-6D were outside specified limits. The following elements compounds had recoveries outside required limits. A post spike was performed for Antimony, Manganese and Silver and the recoveries were 97.1 %, 97.4 % and 126.2 %, respectively.

Compound	% Recovery
Antimony	42.1 %
Manganese	33.9 %
Silver	63.8 %

- The spike recovery for SB-10F for Mercury was 3.9 %. No post spike is required for Mercury.

- The sample results on the Form 6 are given as 0.0000 U for non-detects.

- The recoveries for several elements in the duplicate for SB-2D were outside specified limits. The following elements compounds had recoveries outside required limits.

Compound	% Recovery
Calcium	22.4 %
Lead	72.1 %
Magnesium	23.1 %
Selenium	41.2 %
Zinc	35.8 %

- The duplicate sample recovery for sample SB-5D had a result for Silver was 0.0000 U for the sample and the duplicate result was 9.2328 mg/Kg.

Inorganics – Metals (continued):

- The recoveries for several elements in the duplicate for SB-10F were outside specified limits. The following elements compounds had recoveries outside required limits. The result for Arsenic was 6.82 mg/Kg in the sample and 0.0000 U in the duplicate.

Compound	% Recovery
Aluminum	31.0 %
Barium	34.7 %
Calcium	54.5 %
Chromium	46.9 %
Cobalt	54.7 %
Copper	42.8 %
Iron	38.2 %
Lead	61.1 %
Magnesium	49.5 %
Manganese	49.5 %
Nickel	46.8 %
Potassium	31.8 %
Vanadium	38.5 %
Zinc	44.6 %

- The recoveries for several elements in the duplicate for SB-13D were outside specified limits. The following elements compounds had recoveries outside required limits.

Compound	% Recovery
Copper	101.3 %
Iron	20.5 %
Lead	130.5 %
Magnesium	51.5 %
Manganese	56.5 %
Nickel	107.2 %
Thallium	40.6 %
Zinc	77.0 %

- The recoveries for several elements in the duplicate for SB-17C were outside specified limits. The following elements compounds had recoveries outside required limits. The result for Nickel was 14.2293 mg/Kg in the sample and 0.0000 U in the duplicate.

Compound	% Recovery
Manganese	52.9 %
Zinc	31.5 %
Mercury	50.2 %

Inorganics – Metals (continued):

- The recoveries for several elements in the duplicate for SB-22B were outside specified limits. The following elements compounds had recoveries outside required limits. The results for Silver and Thallium have one result as 0.0000 U and one result with a detectable reading.

Compound	% Recovery
Aluminum	25.8 %
Cadmium	54.2 %
Chromium	138.1 %
Copper	69.0 %
Iron	49.8 %
Lead	109.3 %
Magnesium	67.0 %

- The recoveries for several elements in the duplicate for SB-23A were outside specified limits. The following elements compounds had recoveries outside required limits. The result for Vanadium was 11.85 mg/Kg in the sample and 0.0000 U in the duplicate.

Compound	% Recovery
Aluminum	46.1 %
Arsenic	81.5 %
Barium	51.5 %
Cadmium	84.8 %
Chromium	60.3 %
Copper	42.3 %
Iron	79.7 %
Lead	62.4 %
Manganese	106.2 %
Thallium	40.5 %
Mercury	52.9 %

- The recoveries for several elements in the duplicate for SB-26C were outside specified limits. The following elements compounds had recoveries outside required limits.

Compound	% Recovery
Chromium	40.4 %
Lead	95.5 %
Magnesium	31.4 %
Manganese	38.3 %
Nickel	132.3 %

Inorganics – Metals (continued):

- The Form 7 for the Laboratory Control Sample (LCS) for Cyanide has two results that are 0.0 % recovery. Review of the raw data indicates that the recoveries were within acceptable limits. **The LCS used was a water LCS and not a soil LCS as required.**

- The Form 9 for Serial Dilution for sample SB-3D had a recovery for Manganese of 15 %.

- The Form 9 for Serial Dilution for sample SB-6A had recoveries for Iron and Manganese of 10 % and 10.1 %, respectively.

- The Form 9 for Serial Dilution for sample Field Duplicate has recoveries for five elements that are outside the required limits. The required range is 10 %. These elements are flagged with an "E" as required on the Form 1's.

Compound	% Recovery
Aluminum	14.8 %
Calcium	18.5 %
Iron	16.8 %
Manganese	16.6 %
Zinc	117.2 %

- The Form 9 for Serial Dilution for sample SB-12B has recoveries for six elements that are outside the required limits. The required range is 10 %. These elements are flagged with an "E" as required on the Form 1's.

Compound	% Recovery
Aluminum	12.2 %
Calcium	10.1 %
Iron	13.4 %
Lead	13.8 %
Manganese	18.0 %
Zinc	57.6 %

- The Form 9 for Serial Dilution for sample SB-16D has recoveries for five elements that are outside the required limits. The required range is 10 %. These elements are flagged with an "E" as required on the Form 1's.

Compound	% Recovery
Aluminum	17.2 %
Lead	69.0 %
Manganese	35.8 %
Selenium	95.7 %
Zinc	179.3 %

Inorganics – Metals (continued):

- The Form 9 for Serial Dilution for sample SB-21B has recoveries for three elements that are outside the required limits. The required range is 10 %. These elements are flagged with an "E" as required on the Form 1's.

Compound	% Recovery
Manganese	12.5 %
Thallium	227.2 %
Zinc	50.0 %

- The Form 9 for Serial Dilution for sample SB-23C has recoveries for six elements that are outside the required limits. The required range is 10 %. These elements are flagged with an "E" as required on the Form 1's.

Compound	% Recovery
Iron	10.3 %
Lead	14.1 %
Magnesium	12.0 %
Manganese	10.1 %
Nickel	15.6 %
Zinc	18.9 %

- The Form 9 for Serial Dilution for sample SB-27B had recoveries for Copper and Thallium of 40.5 % and 188.3 %, respectively.

- The Form 9 for Serial Dilution for sample SB-31E has recoveries for three elements that are outside the required limits. The required range is 10 %. These elements are flagged with an "E" as required on the Form 1's.

Compound	% Recovery
Potassium	42.7 %
Sodium	2072 %
Zinc	21.9 %

- The Form 9 for Serial Dilution for sample SB-16D had recoveries for Lead and Selenium of 28.1 % and 384.1 %, respectively.

- **The Form 10 lists a CRDL for Antimony of 120 ug/L. The required CRDL level is 60 ug/L.**

Inorganics – Metals (continued):

- **The Form 10 gives exact numbers for the MDL/IDL as mentioned previously. The instrument ID on the Form 10 is ICP 58.0. The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID's of 17.0 and 58.0. This would be three separate Instrument ID's. Which instruments were used for analysis and is there appropriate forms for each instrument.**

- **The Mercury samples that were received on 6/23/08 (SB-13C thru SB-15F) and according to the preparation log and the Form 13 these samples were prepared on 7/19/08. This is 26 days after they were received. The holding time specified by NYSDEC ASP is 26 days. The date sampled for these samples was 6/20/08 so that from date sampled to date prepared was a total of 29 days (1 day past hold time).**

- **The Mercury samples that were received on 6/25/08 (SB-21C thru SB-28C) and according to the preparation log and the Form 13 these samples were prepared on 7/24/08. This is 29 days after they were received. The holding time specified by NYSDEC ASP is 26 days (3 days past hold time). The date sampled for these samples was 6/23-6/24/08 so that from date sampled to date prepared was a total of 30-31 days (2-3 days past hold time).**

- **The Mercury samples that were received on 6/25/08 (SB-21C thru SB-28C) and according to the preparation log and the Form 13 these samples were prepared on 7/28/08. This is 33 days after they were received. The holding time specified by NYSDEC ASP is 26 days (7 days past hold time). The date sampled for these samples was 6/24/08 so that from date sampled to date prepared was a total of 34 days (6 days past hold time).**

- **The Form 14 for ICP analysis has instrument 17.0 for some pages and instrument 58.0 for others. The handwritten pages give instrument X-001. It appears that at least two instruments were used for ICP analysis. There is only one instrument listed for the Forms 10,11 and 12. The ICP analysis has overlapping times for one of the days, which would indicate that two separate instruments were used.**

- **The ICP raw data from 7/31/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The next set from CCB1 to CCV2 has 16 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 8/6/08 has more than 10 samples between ICB to the next CCV. There are a total of 14 samples analyzed. The next set from CCB1 to CCV2 has 15 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

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Inorganics – Metals (continued):

- **The ICP raw data from 8/20/08A on instrument 17.0 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The next set from CCB1 to CCV2 has 16 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 8/20/08B on instrument 17.0 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The set from CCB2 to CCV3 has 11 samples analyzed. Also one of the pages for the Form 14 is missing for this run. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 8/25/08A on instrument 58.0 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The set from CCB2 to CCV3 has 14 samples analyzed. Page 44 is missing from the raw data. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 8/25/08B on instrument 17.0 has more than 10 samples between ICB to the next CCV. There are a total of 14 samples analyzed. The set from CCB2 to CCV3 has 14 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 9/2/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The set from CCB2 to CCV3 has 12 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 9/3/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The set from CCB2 to CCV3 has 14 samples analyzed. Pages 54 and 55 are misplaced in another day's analysis. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 9/4/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The set from CCB3 to CCV4 has 16 samples analyzed. Also the Form 14 and the first 14 pages of the analytical run are in the data package twice. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

- **The ICP raw data from 9/9/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

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- **Inorganics – Metals (continued):**

  - **The ICP raw data from 9/12/08 has more than 10 samples between ICB to the next CCV. There are a total of 13 samples analyzed. The set from CCB1 to CCV2 has 14 samples analyzed. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

  - **Both of the ICP raw data from 9/8/08 have no ICSA/ICSAB analyzed at the beginning or end of the analytical run. Page 10 is also missing from the raw data from 9/8/08 on instrument 17.0 (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

  - **The Mercury run from 7/3/08 has more than 10 analyses between CCB to CCV. The group between CCB4 to CCV5 has 11 samples. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

  - **The Mercury run from 7/25/08 has more than 10 analyses between CCB to CCV. The group between ICB to CCV1 has 11 samples and CCB8 to CCV9 has 12 samples. (See NYSDEC ASP 7/2005 revision, page E128 for requirements).**

  - **The Cyanide run from 6/27/08 has more than 10 analyses between CCB to CCV. Some groups between CCB to CCV have 11 samples and some have 13 samples. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

  - **The Cyanide run from 7/2/08 has more than 10 analyses between CCB to CCV. Some groups between CCB to CCV have 10 samples and some have 11 samples. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

  - **The Cyanide run from 7/7/08 has more than 10 analyses between CCB to CCV. The Form 14 has more than 20 samples between CCB to CCV. The raw data has 11 samples between CCB to CCV and CCB8 to CCV9 has 16 samples. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

  - **The Cyanide run from 7/10/08 has more than 10 analyses between CCB to CCV. The Form 14 has more than 20 samples between CCB to CCV. The raw data has 11 samples between CCB to CCV, CCB9 to CCV10 has 12 samples and CCB10 to CCV11 has 12 samples. (See NYSDEC ASP 7/2005 revision, page E161 for requirements).**

  - **The ICP raw data on 8/6/08 has large negative results for Selenium. The Selenium results ranged from –23.4 ug/L to –83.1 ug/L.**

  - **The ICP raw data on 8/20/08A has large negative results for Selenium. The ICP raw data on 8/20/08B has large negative results for Selenium.**

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Inorganics – Metals (continued):

- **The ICP raw data on 8/25/08A has sample SB-12D with negative results for Selenium of –24.1 ug/L. The ICP raw data on 8/25/08A has sample SB-23A with negative results for Sodium of –13957 ug/L. The ICP raw data on 8/25/08A has sample SB-23C with negative results for Thallium of –65.6 ug/L.**

- **The ICP raw data on 8/25/08B has large negative results for Selenium. The ICP raw data on 8/25/08B has large negative results for Barium on samples SB-13C and SB-13D of –645 and –437, respectively.**

- **The ICP raw data on 9/2/08 has large negative results for Selenium.**

- **The ICP raw data on 9/3/08 has large negative results for Selenium.**

- **The ICP raw data on 9/4/08 has large negative results for Thallium. All samples, except SB-29C had Thallium results of about –20 u/L. Samples SB-28A, SB-30A and SB-31A had results for Selenium of –21.6, -25.8 and –25.1, respectively**

- **The ICP raw data on 9/8/08 has large negative results for Selenium.**

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Data Review Summary

The data packages submitted are not completely in the format specified by the New York State DEC for ASP data packages (NYSDEC ASP 7/2005 revision, pages B-6 through B-56).

Volatile Organics

Conclusion: **The initial calibration from 6/19/08 on instrument 12 had the internal standards for the "100" standard at one quarter the level of the other standards analyzed. This calibration also had manual edits to the internal standards that were not updated before processing the results. The internal standards affected were Pentafluorobenzene and Chlorobenzene-d5. This would affect all compounds from Chloromethane to Benzene and then Toluene to o-Xylene. The compounds Acetone, 2-Butanone and 1,4-Dioxane had RRF values below 0.05. The samples analyzed on 6/23/08 and 6/24/08 for the groups of compounds listed above should be flagged with an "UJ" for non-detects and "J" for any positive results and considered as estimated due to the inaccurate calibration used for quantitation. Acetone, 2-Butanone and 1,4-Dioxane should be flagged with an "R" for non-detects due to the initial calibration.**

The initial calibration from 6/24/08 on instrument 13 had the compounds Acetone and 1,4-Dioxane with RRF values below 0.05. Acetone and 1,4-Dioxane should be flagged with an "R" for non-detects due to the initial calibration.

The initial calibration from 7/1/08 on instrument 12 had the compound 1,4-Dioxane with a RRF value below 0.05.This compound should be flagged with an "R" for non-detects due to the initial calibration.

The initial calibration from 7/3/08 on instrument 13 had the compounds Acetone and 1,4-Dioxane with RRF values below 0.05. Acetone and 1,4-Dioxane should be flagged with an "R" for non-detects due to the initial calibration.

Data Review Summary (continued)

Volatile Organics (continued)

The closing continuing calibration from 6/27/08 on instrument 13 had the compound Tetrachloroethene with a %RSD of 55.6 %. The continuing calibration from 7/4/08 on instrument 12 has Bromomethane with a %D of 34.0 % and trans-1,3-Dichloropropane with a %D of 27.3 %. The continuing calibration from 7/8/08 on instrument 12 has Bromomethane with a %D of 31.7 %, 2-Butanone with a %D of 31.3 % and trans-1,3-Dichloropropane with a %D of 36.1 %. The continuing calibration from 7/11/08 on instrument 12 has Bromomethane with a %D of 30.0 %, Vinyl Chloride with a %D of 27.0 % and trans-1,3-Dichloropropane with a %D of 46.1 %. The continuing calibration from 7/10/08 on instrument 13 has 4-Methyl-2-pentanone with a %D of 52.3 %. These compounds should be flagged with an "UJ" for non-detects and "J" for any positive results due to the initial and continuing calibration.

The closing CCV analyzed with the sample run beginning 6/25/08 on instrument 13 was analyzed 7 hours and 10 minutes after the 12 hour time period. The closing CCV analyzed with the sample run beginning 6/26/08 on instrument 13 was 2 minutes after the 12 hour time period. The closing CCV analyzed with the sample run beginning 7/2/08 on instrument 12 was analyzed 38 minutes after the 12 hour time period. The closing CCV analyzed with the sample run beginning 7/3/08 on instrument 12 was analyzed 1 hour and 16 minutes after the 12 hour time period. A total of 12 compounds are missing from the TCL compound listing from NYSDEC ASP 7/2005 version. **Due to the wrong internal standards used for quantitation all positive results should be flagged with a "J" for estimated value.**

Semi-Volatile Organics

Conclusion: **The samples extracted on 6/27/08 and 6/28/08 were analyzed on 8/26/08 thru 8/29/08. This is more than 60 days after the samples were extracted. The maximum hold time after extraction is 40 days. The samples extracted on 7/12/08 were analyzed on 8/28/08. This is 47 days after the samples were extracted. The maximum hold time after extraction is 40 days.**

Data Review Summary (continued)

Semi-Volatile Organics (continued)

The initial calibration from 7/8/08 had the compound 2,4-Dinitrophenol with a %RSD of 35.0 %. The continuing calibration from 7/9/08 had the compounds 2,4-Dinitrophenol, Fluoranthene, Butyl benzyl phthalate, Di-n-octyl phthalate and Bis(2-ethylhexyl)phthalate with a %D of greater than 25 %. Also the internal standards for the samples analyzed on 7/9/08 were outside required limits. These samples were not re-analyzed. The samples analyzed on 7/9/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to calibration over 25 % D and internal standard recovery.

The continuing calibration analyzed on 8/27/08 had 16 compounds that exceeded the required 25 %D. Of these, 14 compounds exceeded 40 %D. The continuing calibration analyzed on 8/28/08 had 13 compounds that exceeded the required 25 %D. Of these, 8 compounds exceeded 40 %D. The samples analyzed on 8/27/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to calibration over 25 % D.

Sample SB-21E run 8/27/08 was analyzed 13 minutes after the 12 hour tune criteria. Sample SB-21E RE run 8/29/08 was analyzed 17 minutes after the 12 hour tune criteria.

A continuing calibration was not analyzed at the end of each 12 hour tune. The high recoveries in the MSB do not contribute to any bias in the samples analyzed.

Pesticide/PCBs

Conclusion: The samples were diluted 1:25, but no samples had detectable level of compounds and no mention of the reason for the dilutions was made in the case narrative. **The compound 4,4-DDD in the MID A analyzed on 7/21/08 at 6:28 on the DB35MS column was greater than 25 %. The compound 4,4-DDD should be flagged with an "UJ" for non-detects due to the continuing calibration.**

The curve analyzed on 6/19/08 on the DB-XLB column for the compound 4,4'-DDT should have a RF in the mid standard of 2.6135 and the mean RF for this compound should be 2.6975 and the %RSD would be 8.51 %.

Data Review Summary (continued)

Pesticide/PCBs (continued)

The curve analyzed on 6/19/08 on the DB-35MS column for the compound 4,4'-DDT should have a RF in the mid standard of 1.484 and the mean RF for this compound should be 1.4104 and the %RSD would be 16.71 %.

Due to the variance found for the curves for the compound 4,4'-DDT this compound should be flagged with an "UJ" for non-detects and "J" for any positive results due to the initial calibration.

The PCB continuing calibration checks analyzed on 7/3-7/4/08 and 7/9-7/10/08 for Aroclor 1016/1260 on the DB35MS column have recoveries that are greater than 15 %.

The sample Form 1's do not give results for Aroclor 1262 and Aroclor 1268.

Metals

Conclusion: In general the analysis for metals was poor. The 177 samples analyzed were placed in a single SDG. The flags for any QC outside of specified limits are not reported on a batch by batch basis. **There are flags such as ***EEE for Aluminum and ****EEEEE for Manganese.** The analysis for ICP metals was analyzed not following the criteria for continuing calibration verification. The analysis from the ICB and the next CCV (10 samples are allowed) routinely had 13 to 14 samples, as did several of the CCB to CCV groups. Twice there were 16 samples analyzed between the CCB to CCV.

According to the preparation log and the Form 13 the Mercury analysis for samples SB-13C to SB-15F, SB-21C to SB-28C and SB-28E to SB-30C was analyzed after the required 26 day hold time and after the 28 day technical hold time. The samples were prepared 26 days after receipt and 29 days after sampling for samples SB-13C to SB-15F. The samples were prepared 29 days after receipt and 33 days after sampling for samples SB-21C to SB-28C. The samples were prepared 33 days after receipt and 34 days after sampling for samples SB-28E to SB-30C. The MDL/IDL for Mercury is at the CRDL. **The results for Mercury should be flagged with an "R" as unusable for non-detects and "J-" as estimated low for any positive results due to hold time expiration and unreliability of results at the detection limit.**

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Data Review Summary (continued)

Metals (continued)

Conclusion: The Continuing Calibration Verification (CCV1) analyzed on instrument 17.0 on 9/2/08 at 2:20 pm had recoveries for the compounds (Antimony, Arsenic, Calcium, Lead, Selenium and Thallium) below the required 90-110 % recovery. **The results for the elements Antimony, Arsenic, Calcium, Lead and Thallium for the samples analyzed on 9/2/08 should be flagged with an "UJ" for non-detects and "J" for any positive results due to the unacceptable CCV.**

Silver had high recoveries in the CCV's, CRI's and ICSAB. **Positive results for Silver should be flagged as "J+" for biased high.**

The ICP analysis from all days had Antimony in the Initial and Continuing Calibration Blanks (ICB/CCB) with results greater than the IDL. The general values ranged from 27.6 ug/L to 57.1 ug/L. The ICP analysis from 9/12/08 had values above the CRDL. The CCB1 for this day was 73.6 ug/L and the results for CCB2 was 77.3 ug/L. **All Antimony non-detect results should be reported (based on 100 % Solids) equal to the highest ICB/CCB result for each day (for example < 57.1 ug/L which calculates to < 11.4 mg/Kg for samples analyzed on 7/31/08) for all samples due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The Form 3 for ICP analysis from 8/20/08 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 5.3 ug/L, CCB2 had a result of 8.8 ug/L and CCB3 had a result of 10.6 ug/L. **All Selenium non-detect results should be reported (based on 100 % Solids) as 10.6 ug/L, which calculates to < 2.12 mg/Kg for samples analyzed on 8/20/08 due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The Form 3 for ICP analysis from 8/25/08 for instrument 17.0 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 7.1 ug/L, CCB2 had a result of 14.7 ug/L, CCB3 had a result of 17.0 ug/L. **All Selenium non-detect results should be reported (based on 100 % Solids) as < 17.0 ug/L, which calculates to < 3.4 mg/Kg for samples analyzed on 8/25/08 due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

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Data Review Summary (continued)

Metals (continued)

Conclusion:

The Form 3 for ICP analysis from 9/3/08 has the Continuing Calibration Blank (CCB2) for Lead with a result of 3.7 ug/L and CCB3 had a result of 3.1 ug/L. **All Lead non-detect results should be reported (based on 100 % Solids) as < 3.7 ug/L, which calculates to < 0.74 mg/Kg for samples analyzed on 9/3/08 due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The Form 3 for ICP analysis from 9/8/08 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 9.9 ug/L, CCB2 had a result of 5.0 ug/L and CCB3 had a result 13.5 ug/L. **All Selenium non-detect results should be reported (based on 100 % Solids) as < 13.5 ug/L, which calculates to < 2.7 mg/Kg for samples analyzed on 9/8/08 due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The Form 3 for ICP analysis from 9/9/08 has the Continuing Calibration Blank (CCB1) for Selenium with a result of 8.9 ug/L and CCB2 had a result of 6.5 ug/L. **All Selenium non-detect results should be reported (based on 100 % Solids) as < 8.9 ug/L, which calculates to < 1.78 mg/Kg for samples analyzed on 9/9/08 due to the levels present in the blanks. The final results would have to account for the solids present in each of the samples.**

The raw data for Selenium, in general, had large negative results. **The results for Selenium for these samples should be with an "R" as unusable for non-detects.**

The recoveries for Chromium, Zinc and Mercury for SB-10F matrix spike were 73.4 %, 65.6 % and 3.9 %, respectively and no post-digestion spike was analyzed. **The results for Chromium and Zinc for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries. The results for Mercury for this batch should be flagged with an "R" for non-detects and "J-" for biased low any positive results due to spike recoveries.**

Data Review Summary (continued)

Metals (continued)

Conclusion: The recoveries for Manganese, Mercury and Cyanide for SB-17C matrix spike were 27.6 %, 38.3 % and 56.5 %, respectively. A post-digestion spike was analyzed for Manganese and the recovery was 100.6 %. **The results for Manganese, Mercury and Cyanide for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The recoveries for Cadmium, Chromium, Copper, Manganese, Nickel, Silver and Cyanide for SB-22B matrix spike were 7.0 %, -33.2 %, 65.4 %, 41.1 %, 48.7 %, 162.6 % and 128.0 %, respectively. A post-digestion spike was analyzed for Nickel and Zinc and the recoveries were within acceptable limits. **The results for Copper, Manganese and Nickel for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries. The results for Cadmium, Chromium for this batch should be flagged with an "R" for non-detects and "J-" for biased low any positive results due to spike recoveries.**

The duplicate recoveries for Lead, Selenium and Zinc for sample SB-2D were 72.1 %, 41.2 % and 35.8 %, respectively. **The results for Lead, Selenium and Zinc for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The duplicate recoveries for Aluminum, Arsenic, Barium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Vanadium and Zinc for sample SB-10F were 31.0 %, 0.0 % (one detect one non-detect), 34.7 %, 54.5 %, 46.9 %, 54.7 %, 42.8 %, 38.2 %, 61.1 %, 49.5 %, 49.2 %, 46.8 %, 38.5 % and 44.6 %, respectively. **The results for Aluminum, Arsenic, Barium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Vanadium and Zinc for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The duplicate recoveries for Copper, Iron, Lead, Magnesium, Manganese, Nickel, Thallium and Zinc for sample SB-13D were 101.3 %, 20.5 %, 130.5 %, 51.5 %, 56.5 %, 107.2 %, 40.6 % and 77.0 %, respectively. **The results for Copper, Iron, Lead, Magnesium, Manganese, Nickel, Thallium and Zinc for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

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Data Review Summary (continued)

Metals (continued)

Conclusion: The duplicate recoveries for Manganese, Mercury, Nickel and Zinc for sample SB-17C were 52.9 %, 50.2 %, 0.0 % (one detect one non-detect) and 31.5 %, respectively. **The results for Manganese, Mercury, Nickel and Zinc for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The duplicate recoveries for Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Magnesium, Silver and Thallium for sample SB-22B were 25.8 %, 54.2 %, 138.1 %, 69.0 %, 49.8 %, 109.3 %, 67.0, 0.0 % (one detect one non-detect) and 0.0 % (one detect one non-detect), respectively. **The results for Aluminum, Cadmium, Chromium, Copper, Iron, Lead, Magnesium, Silver and Thallium for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The duplicate recoveries for Aluminum, Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Thallium and Vanadium for sample SB-23A were 46.1 %, 81.5 %, 51.5 %, 84.8 %, 60.3 %, 42.3 %, 79.7 %, 62.4 %, 106.2 %, 52.9 %, 40.5 % and 0.0 % (one detect one non-detect), respectively. **The results for Aluminum, Arsenic, Barium, Cadmium, Chromium, Copper, Iron, Lead, Manganese, Mercury, Nickel, Thallium and Vanadium for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The duplicate recoveries for Chromium, Lead, Magnesium, Manganese and Nickel for sample SB-26C were 40.4 %, 95.5 %, 31.4 %, 38.3 % and 132.3 %, respectively. **The results for Chromium, Lead, Magnesium, Manganese and Nickel for this batch should be flagged with an "UJ" for non-detects and "J" for any positive results due to spike recoveries.**

The serial dilution recoveries for Aluminum, Calcium, Copper, Iron, Lead, Magnesium, Manganese, Selenium, Sodium, Thallium and Zinc for various samples were above the required limits. **Positive results for Aluminum, Calcium, Copper, Iron, Lead, Magnesium, Manganese, Selenium, Sodium, Thallium and Zinc should be flagged as "J" for estimated.**

Data Review Summary (continued)

Metals (continued)

Conclusion: The Method Detection Limits/ Instrument Detection Limits (MDL's/IDL's) given in the data package for Metals at exact numbers (10.0, 5.0, etc.). A statistical MDL/IDL would not yield exact numbers as given in the data package. Also the forms used are old and have been photocopied so many times that the lines are wavy. Only a typed new date and a handwritten SDG are entered. The date given for the ICP MDL/IDL was 1/30/08 and there are two different MDL/IDL forms for the same instrument with very different values. It is questionable if the MDL/IDL information is correct. Some of the ICP MDL/IDL results are exactly the same as the Contract Required Detection Limits (CRDL). This is true for the elements Arsenic, Cadmium, Lead, Selenium, Silver and Thallium as given on the Form 10. **The results for Arsenic, Cadmium, Lead and Thallium should be flagged with an "UJ" for non-detects.**

The instrument ID on the Form 10 is ICP 58.0. The Form 11 for Inter-element Correction Factors gives an instrument ID as X-001. The Form 12 for Linear Range has an instrument ID of ICP 58.0 (Matching the Form 10). The Form 14 for ICP Analysis Run Log has an instrument ID of 58.0. This would be two separate Instrument ID's.

Due to the inconsistencies in the calibration sequence with more than 10 samples between ICB to CCV, the MDL/IDL information and difference in instrument ID's between the Forms 10,11,12 and 14 to following general statement is given. **All parameters not specified above would have results considered as estimated**. Further data documentation may be necessary to qualify the results. If the laboratory could provide better documentation and actual, current results for the information contained in these forms a better review could be determined.