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Periodic Review Report
Kingsbury Landfill - Site 5-58-008
Work Assignment No. D004445-18.1

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Engineering Certification

I, Scott A. Underhill, certify that I am currently a NYS registered professional engineer and that this Periodic Review Report for the Kingsbury Landfill Site (Site Number # 5-58-008) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Respectfully submitted,

AECOM Technical Services Northeast, Inc.

Scott Underhill **3/4/11**

Scott Underhill Date

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Executive Summary

The Kingsbury Landfill (Site) is an 18 acre closed landfill located on Burgoyne Avenue in the Village of Hudson Falls, Washington County, New York (**Figure 1**). The Site operated as a municipal dump prior to the establishment of regulations covering the operation and construction of waste facilities from 1930 to 1985. Regulated hazardous wastes disposed of at the Site include PCB-laden oil waste as well as halogenated solvents. Leachate generated at this site reached several surface water bodies adjacent to the site including the feeder/tow canal, Cutter Pond and a forested swamp. The New York State Department of Environmental Conservation (NYSDEC) has assigned the Site the ID No. 5-58-008, and applied the designation of a Type 2 inactive hazardous waste site. The Type 2 designation identifies the site involving hazardous wastes and is a potential threat to human health and the environment.

Environmental investigations revealed that the soil, sediments, groundwater, and surface water at and adjacent to the Site contained contaminants including PCBs, various metals, and halogenated solvents. The installed remedies including an interim leachate collection and treatment system (ILCTS), a soil-bentonite groundwater cut-off wall (slurry wall), and an low permeability clay cap with vegetation cover.

Site inspections are conducted twice a week by a technician during periods of ILCTS operation. Sampling of ILCTS influent and effluent is conducted monthly during operation. Groundwater samples are collected every five quarters.

No Record of Decision (ROD) containing remedial goals exists for the Site. In the absence of approved site specific remedial goals, the generic remedial goals presented in NYSDEC DER-10 guidance was utilized. The evaluation of the applied remedies effectiveness will be made with the according to the remedies ability to achieve the generic remedial goals.

No Site Management Plan (SMP) exists for the Site. The Leachate Treatment System Operation and Monitoring Plan (Earth Tech 2002) is the basis of the operations, maintenance and monitoring (OM&M). In the absence of a SMP, the OM&M compliance reports were used to determine whether activities have been completed in accordance with the accepted plans. Additionally, OM&M activities were evaluated to determine whether the current activities are sufficient to meet the requirements of an SMP.

The Site remedies mitigate the direct release of contaminants to receptors.

The existing Site remedies do not provide a mechanism for remediating identified contamination beyond the slurry wall. Additional remedies will be required in order to achieve the goals established in the DER-10 guidance (i.e., remediation of contaminated media resulting from releases from the Site).

Total cost of operation on an annual basis for OM&M is approximately $109,200 based on documented cost accrued between June 2007 and September 2009, then averaged to generate an annual cost.

Based on this periodic review (PR), an annual field oversight review is required for the Site.

The following deficiencies with appropriate recommendations have been identified as part of this PR:

- Slurry wall effectiveness is measured through analysis of sample results; contamination has been identified in downgradient wells.
  RECOMMENDATION: *Collect Shelby tube samples from the slurry wall in areas that potential leakage through the slurry wall exists for triaxial permeability analysis. Analyze the sample results to determine if leakage is occurring through the slurry wall, and initiate repairs if necessary. Establish and follow a statistical analysis program for tracking changing chemistry of contaminants of concern and a list of applicable monitoring parameters in order to determine if leachate is negatively impacting groundwater at the site.*

- Remedial goals require that affected surface water, groundwater and sediment be restored to background conditions. Sampling has not been conducted to ensure that surface water and sediment contaminant concentrations meet the requirements.
  RECOMMENDATION: *Collect surface water and sediment samples near historical locations. Locate the staff gauges reported to have been present in the feeder canal and Cutter Pond, reestablish as necessary, and reinstate the measurement of those water elevations.*

- Observations of well risers, fencing and slopes suggest that the southeast portion of the cap may be undergoing creep, which may lead to failure of the cap and cover system.
  RECOMMENDATION: *Complete a detailed topographic survey including the location and orientation of slopes, depressions and above ground components. Detailed topographic surveys of the capped area should be completed on a biannual basis, and verification surveys of limited areas of anomalous topography identified during inspections should be completed on an as needed basis. Install additional groundwater monitoring wells in critical locations.*

- LFG migration wells are not present at the Site, passive venting is likely inadequate, and the potential for subsurface LFG migration is increased.
  RECOMMENDATION: *Install additional landfill gas vents (typically one per acre), in order to alleviate the potential LFG overpressure that has formed as a result of inadequate venting and vent maintenance. Install monitoring points for landfill gas migration (typically 500' spacing along Site perimeter) along the northern portion of the landfill.*

- The carbon treatment units integrated into the landfill vent system are inoperable.
  RECOMMENDATION: *Sample off-gas to determine if carbon treatment units need replacement.*

- Pan lysimeters are inoperable.
  RECOMMENDATION: *Replace or repair pan lysimeters.*

1.0 Site Overview

The Site is located on Burgoyne Avenue in the Village of Hudson Falls, Washington County, New York. The Site is an 18-acre, closed landfill. The Site operated as a municipal dump prior to the establishment of regulations covering the operation and construction of waste facilities from 1930 to 1985. The New York State enacted Title 6 NYCRR Part 360 regulations regarding solid waste management requiring a permit to continue to construct and operate the Site. A permit was granted by the NYSDEC to construct and operate as a Municipal Solid Waste Landfill (Permit issued 1985) until such time as the local municipality could develop a solid waste disposal plan that provided an appropriate alternative to the Site. The site has been managed by the New York State Division of Environmental Remediation (DER) as a Class 2 Inactive Hazardous Waste Site following the completion of closure activities. Approximately 1,900 tons of regulated hazardous waste generated by GE had been accepted into the facility for disposal prior to issuance of the permit to accept Type II waste, and enforcement of the requirements for the Site. Regulated hazardous wastes disposed of at the Site include PCB-laden and oil impregnated waste as well as halogenated solvents. Leachate generated at this site reached several surface water bodies adjacent to the site including the feeder/tow canal, Cutter Pond and a forested swamp. Environmental investigations revealed that the soil, sediments, groundwater and surface water in adjacent to the Site contained contaminants including PCBs, various metals, and halogenated compounds. Site features including the location of the monitoring wells and the treatment system location is presented on **Figure 2**.

The Site lies within the Hudson-Champlain Lowland, a broad bedrock depression formed in the Paleozoic (Middle Ordovician), Snake Hill Formation. The broad bedrock depression became a depositional outlet for retreating Wisconsinan Stage glaciers. The Hudson Champlain Lowland became occupied by a series of lakes where silt and clays were deposited in the low energy environments. Large deltas of sand and gravel were deposited where tributaries of the Glacial Hudson River delivered sediment to the lakes.

The Site is underlain by broad deltaic sand deposits of the Oakville soil series, which are continuous across the majority of the site, then thin and grade into silt and clay deposits of the Vergennes and Kingsbury soil series in the southern portion of the site. The deltaic sand varies in thickness from 60 feet to absent near the groundwater surface water interface. The deltaic sands have proven to be a part of the most productive aquifer in the area. The silt and clay deposits underlie the aquifer in sufficient thickness to create an effective aquitard between the glacial soil aquifer and the bedrock aquifer. The bedrock underlying the soil is considered a poor aquifer due to its narrow productive joints and inconsistent yield.

Groundwater flow beneath the Kingsbury landfill appears to be in an east-southeasterly direction, primarily through the delta sand deposits. The groundwater elevations intersect the ground surface elevation immediately to the south of the landfill feeding a number of springs which form wetlands in any lowlying areas. The soil profile changes at or near this southern portion of the site with the sand deposits grading into clay soils creating the groundwater surfacewater interface. A cross section is presented in **Figure 3**.

Groundwater flow beneath the landfill is estimated to be on the order of 20,000 gallons per day moving at a rate of 0.67 feet per day toward the south/southeast (E.C. Jordan, December 1991).

1.1 Objectives of the Periodic Review

The periodic review process is used to determine if a remedy continues to be protective of human health and the environment. The objectives of the periodic review (PR) for sites in the State Superfund Program (SSP) are as follows:

- Determine if the remedy remains in place, and is performing properly and effectively;
- Determine if the remedy is protective of public health and the environment;
- Evaluate compliance with the decision document(s) and, if available, the SMP;
- Evaluate all treatment units, and identify deficiencies;
- Recommend necessary corrective actions;
- Evaluate the condition of the remedy;
- Verify, when appropriate, that institutional controls (IC) are in place and effectively protect the environment and public health;
- Verify, when appropriate, that engineering controls (EC) are in place and effectively protect the environment and human health; and
- Evaluate costs

In 1989 a settlement between GE and the NYSDEC established requirements for remedial activities to be completed at the Site. The remedial activities were conducted to address known environmental contaminants, potential ongoing and future environmental degradation, as well as protect public health. Public health can become endangered when exposure to contaminants through pathways of ingestion, inhalation, or adsorption. The public health and environmental concerns were addressed according to the terms of the settlement including the construction of a leachate collection system, a soil-bentonite groundwater cut-off wall (slurry wall), and an engineered cap and cover system (low permeability clay cap). The installation of an environmental monitoring network consisting of monitoring wells, landfill gas vents, landfill gas monitoring points, and pan lysimeters established a system allowing for periodic sampling in order to provide data necessary to assess the effectiveness of the remedial measures completed at the Site. Periodic monitoring has been conducted utilizing portions of the available network providing analytical data necessary to determine whether the remedial activities completed at the Site remain effective in protecting the environment and human health.

Generic remedial action objectives (RAOs) from the DER-10 guidance document are applicable as no site specific criteria have been developed. The RAOs for the various media at the Site include:

Groundwater

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards
- Prevent contact with or inhalation of VOCs from contaminated groundwater
- Restore aquifers to pre-disposal/pre-release condition to the extent practicable
- Prevent the discharge of contaminants to surface water
- Remove the source of groundwater or surface water contamination

Soil

- Prevent ingestion/direct contact with contaminated soil
- Prevent inhalation of or exposure to volatilizing contaminants from soil
- Prevent migration of contaminants that would result in groundwater or surface water contamination
- Prevent negative impacts to biota resulting in toxicity through direct contact or bioaccumulation through the terrestrial food chain

Surface water

- Prevent ingestion of water that has been negatively impacted by contaminants
- Prevent contact with or inhalation of contaminants from negatively impacted water bodies
- Prevent surface water contamination which may result in fish advisories
- Restore surface water to meet AWQS for established contaminants of concern
- Prevent negative impacts to biota resulting in toxicity through direct contact or bioaccumulation through the marine or aquatic food chain

Sediment

- Prevent direct contact with contaminated sediments
- Prevent surface water contamination which may result in fish advisories
- Prevent releases of contaminants that would result in surface water contaminant concentrations exceeding AWQS
- Prevent negative impacts to biota resulting in toxicity through direct contact or bioaccumulation through the marine or aquatic food chain

1.2 Remedial History

Remedial investigations conducted in response to reports of leachate discharging from the Site identified PCBs, and halogenated compounds contaminated surface water, sediments, and groundwater in the area adjacent to the facility.

Landfill closure activities were completed in 1989 including the construction of a slurry wall, a low permeability clay cap and cover system, a passive landfill gas venting system, a leachate collection and treatment system along with the installation of groundwater monitoring wells. The on-site remediation eliminated direct exposure to waste disposed of at the facility. Installation of the soil-bentonite groundwater cut-off wall and the low permeability clay cap and cover system is meant to effectively cut off the waste mass and leachate from the surrounding environment. The leachate collection system is utilized to allow leachate to accumulate in piping and sumps then be pumped to the treatment system, controlling the leachate elevation within the landfill. The passive landfill gas venting system is installed to allow relief of pressure caused by gas generation from the waste mass to control migration. The closure activities were meant to bring the facility construction to standards appropriate for a waste disposal site.

The slurry wall was constructed of a soil bentonite mixture and surrounds the waste mass forming a barrier to leachate escaping into permeable soils. The wall elevation and depth of construction varies to match the geologic conditions encountered. The depth of slurry wall placement is controlled by the underlying clay surface, with trenching terminating six feet into the underlying clay in order to create an impermeable seal. The slurry was placed without failing any required quality control testing, but was required to be extended deeper in areas to address localized permeable soils.

A soil cap was installed at the Site consisting of a 42-inch layer of compacted clay, a 12-inch layer of silty loam, and a 6-inch layer of top soil. The cap is to prevent infiltration of precipitation into the landfill. The compacted soil cap depends on a vegetative cover to maintain the cohesion of the soil. Rip-rip filled drainage ditches channel runoff away from the land fill toward the east.

Four pan lysimeters have been installed below the cap to allow measurement of precipitation infiltration through the cap. Lysimeters are constructed of a vessel with a riser that extends through the cap to the surface where it is capped to prevent direct filling. The lysimeter vessel allows water to infiltrate through its upper surface, storing it until it is removed for measurement.

The passive gas venting system is constructed of slotted polyvinyl chloride (pvc) laterals connected to solid risers which to vent gas generated by the waste mass. Landfill gas generated within the enclosed waste mass will build pressure potentially causing slope stability issues, or migrating from the waste mass through leachate collection piping or the subsurface. Venting provides a control measure to direct landfill gas out of the enclosed waste mass into the atmosphere. The system consists of three laterals, a main trunk and three vents. The laterals are installed below the cap following the slope extending across the waste mass. The laterals join the main trunk which runs perpendicular to them along the crest of the landfill. The vents rise from the main trunk through the cap, and are evenly spaced along the peak of the landfill.

The landfill gas is treated through activated carbon units integrated into the vent risers. The activated carbon units remove volatile chemicals from the gas as it passes through them providing adsorptive surfaces that contaminants adhere to. Pressure gauges are installed at each location to monitor fouling of the carbon, identified by increasing pressure gauge readings.

In 1988 and 1989, the leachate collection system was upgraded to increase the collection rate in response to leachate seeps appearing along the junction of the cap and cut-off wall.

Accumulation of large volumes of leachate following slurry wall construction lead to the determination that active leachate extraction is necessary in order to avoid slope instability and the release of leachate into the environment. In 1988 and 1989, upgrades were completed to the leachate collection system and an Interim Leachate Collection and Treatment System (ILCTS) were installed to evacuate and treat leachate from the landfill. The ILCTS was designed to reduce the leachate head in the landfill protecting the integrity of the engineered cap and cover system and mitigating the potential for leachate release into the environment. The leachate collection system was renovated in response to operational problems in 1995, and again in 2008.

The ILCTS was first operated in 1991 removing and treating almost 2 million gallons of leachate through 2002. The ILCTS was modified in 1995 in response to a number of operational problems. After the renovation, the plant was prepared for an indeterminate period of inactivity based on measurements that indicated leachate elevations in the landfill did not rise to the action level as quickly as anticipated.

Since 1991, the leachate elevation within the landfill has been monitored periodically, and found to have reached the 200 foot action level in some of the wells in 1999. The elevation fluctuated and then continued to rise and stay above 200 ft. The NYSDEC restarted the leachate treatment system and placed it back in operation in August of 2002 and operated until late fall. The following year it was restarted in May 2003 and operated until late fall. The ILCTS was not operated the following year but was restarted in August 2005.

The ILCTS was operated for several months (Spring through Fall) in 2002, 2003 and 2005, removing and treating approximately four million gallons of leachate during the period. ILTS process improvements were made in the seasons mentioned above. The ILCTS was operated for several months each year (Spring through Fall) during the years 2002, 2003, 2005, 2007, 2008 and 2009. Approximately 5.6 5.6 million gallons of leachate were treated 2002 through 2010.

The ILCTS was designed for a maximum capacity of 30 gpm estimated to be sufficient to maintain the leachate elevation at or below the 202 foot action level. Leachate is pumped to the treatment system during the warm part of the year, the system is then shut down, and the leachate elevation is monitored periodically. Reactivation of the ILCTS is required when the leachate elevation reaches the action level of 202 feet.

2.0 Evaluate Remedy Performance, Effectiveness and Protectiveness

2.1 Operation and Maintenance Plan Requirements

A document outlining the O&M requirements for the ILCTS titled Operations and Maintenance Manual Interim Leachate Treatment System was prepared (E.C. Jordan, 1991). This O&M plan includes a list of components which make up the ILCTS and provides details regarding the operations of the components and periodic maintenance requirements. The O&M manual has been updated through the Site management, leading to the development of the current O&M requirements detailed in a document titled Leachate Treatment System Operation and Maintenance Workplan, (Earth Tech, 2002 and Earth Tech 2007)

Effluent limitations and monitoring requirements are listed in Appendix A of the O&M plan. Samples are to be collected at two monitoring points including Outfall 001-Treated groundwater and at Outfall-002 Culvert Pipe at the Canal. The sampling requirements are as follows:

Sampling Location	Effluent Parameter	Measurement Frequency
Outfall 001-Treated Groundwater	BOD, Solids, Oil & Grease, pH	Weekly
Outfall 001-Treated Groundwater	PCBs- EPA Method 608	15 Months
Outfall 001-Treated Groundwater	BTEX, TCE, TCA, PCE, Chloroform, Chlorobenzene	Monthly
Outfall 001-Treated Groundwater	Total Metals	Quarterly
Outfall 002- Culvert Pipe Canal	PCBs EPA Method 608	15 Months

The E.C. Jordan document served as the O&M Manual (manual) for the Site from 1991 to acceptance of the Earth Tech document in 2002. The Earth Tech document served as the manual for the Site from 2002 to acceptance of the Earth Tech document in 2007. The manual includes the maintenance and monitoring program for the site including the inspection of engineering controls and measurement and sampling requirements. As an initial PRR, the requirements of the previous O&M manuals will be identified in the following table, and an indication of their compliance dates is provided for discussion.

Engineering Control	Inspection Requirement
Fencing, Gates, and Site Access	Monthly
Treatment System Building	Monthly
Landfill Off-Gas Treatment System	Monthly
Wells, Drains, and Manholes	Monthly
Cap and Drainage Trench Integrity	Monthly
Pan Lysimeter Measurement	Bimonthly
Mowing Grass Cover	Bimonthly Between April and October
Measurement and Sampling	Monitoring Frequency
Groundwater Level Measurement at 23 locations including monitoring wells, relief wells, drains and manholes	Monthly
Groundwater Sampling (GMW-1 through GMW-4, MW-90-10C, MW-90-14)	Semi-Annually
Surface Runoff Water Sampling	Quarterly
Ambient Air Monitoring (off gas treatment)	Quarterly

The manual requires monthly reporting of findings and results to the NYSDEC by the engineer.

Appendices to the manual include:

- Monthly Inspection Log Sheet
- Cap Repair Protocol
- Pan Lysimeter Measurement Protocol
- Groundwater Level measurement Protocol
- Groundwater Level Log Sheet
- Groundwater Sample Collection Protocol
- Groundwater Sampling Log Sheet
- Surface Water/Off Gas Sampling Log Sheet
- Surficial Runoff Water Sample Collection Protocol
- Ambient Air Monitoring Protocol

Measurement and sampling locations are depicted on **Figure 2**.

2.1.1 O&M Plan Compliance Report

Activity	Required Frequency (X)						Compliance Dates
	As Needed	Semi-Annually	Daily	Weekly	Monthly	Quarterly	
System Monitoring (Operational Periods)			X				1991-2009
Remove Clarifier Sludge				X			1991-Present
Remove Solids Tank Sludge	X						1991-Present
Mix & Add Chemicals	X						1991-Present
pH Probe Calibration	X						1991-Present
Bag Filter Replacement	X						1991-Present
Discharge Permit Sampling				X	X	X	1991-Present
Sludge and Solid Waste Disposal	X						1991-Present
Engineering & Institutional Control Inspection					X		1991-Present
Groundwater/Leachate Elevation Measurements					X		1991-Present
Groundwater Sampling		X					1991-Present
Surface Runoff Sampling*						X	Unknown
Landfill Gas Monitoring*						X	Unknown

*Not required according to current O&M Manual

2.1.2 Evaluation of O&M Activities

Routine maintenance is conducted as necessary to ensure consistent operation of the ITLCS. All system maintenance activities since 2002 have been provided to the NYSDEC in Earth Tech and AECOM's Monthly Operation, Maintenance and Monitoring Reports (2002-2009) and will not be fully reiterated herein.

At the direction of NYSDEC, AECOM (formerly Earth Tech) and its subcontractor, Aztech Technologies performed another round of renovations to the ILTS in 2007 and 2008. Renovations included:

1. Design and completion of engineering drawings for the complete system electrical schematic, main control panel, switch / indicator light panel, load center layout, sized conduit map with all infill wires, sizes, and functions.

2. Deconstruct pipe bridge, relocation of pipes and conduits underground revalving of the new pipes (including a vacuum relief valve in the influent line) and removal of the control panel outside at the wells with control now integrated into the new programmable logic controller (PLC).

3. Replacement of the coalescer elements, and replacement with new elements; resurfacing of the clarifier tank.

4. Replacement of old low-pressure carbon vessels with new high-pressure units including new liquid-phase activated carbon media. This also included the removal of several pressure reducing and pressure controlling valves.

5. Removal of several existing small control panels, disconnect switches, and 480V transformer.

6. Installation of new conduits and wires to several areas inside and outside the treatment building to accommodate the existing and new sensors as well as the expanded control capabilities.

7. Relocation all control equipment to a central location in the treatment building, centralizing power distribution of 480V, 120/240V, and DC voltages to the same area.

8. Replacement of rudimentary, decentralized, line-voltage control setup with a new PLC that:
   a) Allows plain-language programming, password-protection, and remote access.
   b) Replaces existing alarm autodialer with a daily fax report of all system readings and functions, supplemented by alarm faxes when necessary.
   c) Supports remote system login for status, adjustment of alarm levels, and remote startup/shutdown.
   d) Incorporates datalogging with remote access for recordkeeping and system troubleshooting.

9. Reutilizing existing equipment wherever possible, including existing float sensors, pumps, blowers, and conduits.

Due to the implementation of these changes the basic operation of the ILTS is streamlined and more efficient. The change in the fundamental operation of the ILTS necessitated a complete rewrite of the O&M Manual for the ILTS.

2.2 Monitoring Plan Compliance Report

2.2.1 Confirm Compliance with Monitoring Plan

During periods of ILCTS operation site inspections are conducted semiweekly by a Technician who inspects the system, observes the site condition, and measures depth to water in the wells. The data is recorded on inspection forms and is reported weekly to the NYSDEC Project Manager.

Groundwater samples are currently collected every 15 Months and Groundwater Monitoring Reports are submitted to the NYSDEC PM. The most recent sampling event occurred in September 2008 and the next sampling event was conducted in the first quarter of 2010.

Concentrations of VOCs and Fe in excess of the NYSDEC Class GA groundwater standards and/or guidance values in wells inside and outside the landfill slurry wall, on the downgradient edge, are consistently reported.

2.2.2 Confirm that Performance Standards are being met

The ILCTS was designed to reduce the leachate head in the landfill protecting the integrity of the engineered cap and cover system and mitigating the potential for leachate release into the environment past the slurry wall.

The ILCTS when operating is capable of maintaining the leachate head in the landfill to an elevation below the action level of 200 feet.

The remediation system should remain in operation and continue to treat leachate which contains concentrations of VOCs, PCBs and Fe in excess of the AWQS. VOC and Fe concentrations reported in sample results from monitoring wells downgradient and adjacent to the landfill exceed the AWQS. The greatest concentrations of TVOCs reported were in samples collected from a sentinel well (MW-8A).

The remedies applied to the Site have mitigated the direct release of contaminants to various adjacent receptors, and appear to be effectively preventing future direct release of contaminants. However some failure of the slurry wall to contain leachate is suspected on the downgradient edge of the landfill. The goals of DER-10 require remediation of contaminated media resulting from releases from the Site. The remedies in place at the Site do not provide a mechanism for remediating identified contamination beyond the slurry wall. Additional remedies will be required in order to achieve the goals established in the DER-10 guidance.

Groundwater Elevation Monitoring
Measurements of depth to water are obtained from the monitoring well network surrounding the landfill prior to collecting groundwater sampling. In June 2003, a supplemental survey of the monitoring well network was conducted to verify and or update the locations and elevations of the components. The September 29, 2008 depth to water data was used to calculate groundwater elevations. The groundwater elevations from this sampling event are presented in **Table 1**.

The elevation data from the September 2008 sampling event was used to create a groundwater isoelevation map presented as **Figure 4**. The contours generated from this data indicate that groundwater flows toward the southeast, both within and outside of the slurry wall. The slurry wall surrounding the waste mass acts as an impermeable barrier for the glacial soil aquifer and it is presumed that groundwater flow is diverted around the landfill as indicated on **Figure 4**.

The area enclosed by the slurry wall was being slowly drained by the ILCTS at the time depth to water/depth to leachate data was collected. The lowest leachate/groundwater elevation was measured at MW-90-9B, some 500 feet from the ILCTS piping, but presumably located within the zone of influence of the ILCTS. The leachate elevation measured for GMW-6, approximately 150' from the ILCTS, appears to be anomalously high, indicating that the effectiveness of the leachate collection is not uniform, and additional monitoring locations are necessary to characterize its effectiveness over the area requiring leachate head reduction.

Groundwater Analytical
The analytical results for the groundwater sampling results from 2001 through 2008 are presented in Table 2. Concentrations reported to be in excess of the New York State Ambient Water Quality Standards (AWQS) and Guidance Values (GV) for groundwater are presented in shaded cells and bold typeface. Table 3 presents a summary of total VOCs, total SVOCs, total PCBs, and selected metals dating back to 1988.

Volatile Organic Compounds
Total VOC (TVOCs) concentrations ranged from below detection limits (0.5 µg/L) outside of the slurry wall along the northern side of the landfill, to a concentration exceeding 1000 µg/L in the southern area of the site, located within the slurry wall. Isoconcentration lines representing the distribution of TVOCs from the September 2008 sampling event is presented as **Figure 5**. The VOCs most frequently identified and reported to be at the highest concentrations are cis-1,2-dichloroethene (cis-1,2 DCE) and vinyl chloride (VC), as depicted in Figures 5 and 6 respectively. Trichloroethene (TCE) was also reported to be present in groundwater samples collected from several wells at concentrations exceeding the detection limits.

Monitoring wells GMW-1, MW-90-2C, MW-90-6C, and MW-18 each had TVOC concentrations of less than 2 µg/L. These wells are located outside the slurry wall, along the northern side of the landfill. Another monitoring well in this area, GMW-2, has shown variable VOC detections in the past.

Monitoring well MW-90-10C, located outside the slurry wall on the southwest side of the landfill, showed an increase in concentration of TVOCs from 11.72 µg/L as measured in 2007 to 22.93 µg/L. Figure 8 and Table 3 show that TVOCs over time in this well have decreased, notably from 1991 to June 2002. The last three sampling events reported that concentrations of VOCs are increasing, but have not yet increased to concentrations that were reported before remediation.

The greatest concentrations of TVOCs were found in GMW-4 and GMW-6 located in the southern corner of the landfill, (GMW-4 is located outside of the slurry wall, and GMW-6 is located within the waste mass) and MW-8A, located in a lowlying area along the eastern side of the site. MW-8A is located downgradient of a MW-90-9B which has a relatively low leachate/groundwater elevation. The potential for this well to be indicating leakage of leachate through the slurry wall is supported by the relatively high contaminant concentrations reported downgradient of a well with anomalous groundwater/leachate elevations. Several of the VOCs reported to be present in groundwater collected from these wells were detected at concentrations above AWQS, notably VC, cis-1,2-DCE and TCE. Samples collected from these wells were reported to contain similar concentrations of the same compounds in the 2007 sampling event. MW-8A is expected to follow a similar trend, however historical data was not available for verification.

The data presented on **Table 3** show that GMW-4 has reported widely varying concentrations of TVOCs beginning with data reported from 1990. TVOCs, which have ranged in concentration from 7 µg/L to 410 µg/L, show a decreasing trend from the June 2001 sampling event to present.

Elevated TVOC concentrations in GMW-4 present the possibility that the slurry wall is not effectively containing the leachate, or that from time to time, leachate has migrated beyond the slurry wall into the downgradient area.

TVOCs in well GMW-6 have been highly variable with the highest concentration of 1048 µg/L noted in September 2008 (refer to Table 3). GMW-6 is located within the waste mass, and is therefore expected to contain contaminant concentrations similar to influent contaminant concentrations. The apparent variability between influent concentrations and reported GMW-6 sample results indicates that there is variability in the leachate, and/or the collection efficiency of the ILCTS. Influent to the ILCTS was sampled twice in 2008, and TVOCs in both samples were less than 30 µg/L.

Groundwater samples collected in September 2008 from well MW-90-14, are reported to contain concentrations of VC, cis-1,2-DCE, and TCE, as well as benzene that exceed AWQS. TVOC concentrations have been decreasing since the onset of sampling in 1991, however, the concentrations are still in excess of the AWQS. The groundwater sample results reported from this area of the landfill may be indicating a lack of containment by the slurry wall in this area.

Well pair MW-90-9 and well pair MW-90-8 are located on opposite sides of the slurry wall on the eastern side of the landfill, upgradient from MW-90-14, and MW-8A. These wells open intervals at depths 20 or more feet below the elevation of the open interval of MW-90-14, and MW-8A. Currently these wells are not utilized for sampling. Despite the difference in elevation of the open intervals sampling of the wells screened at the higher elevation (MW-90-9B and MW-90-8A) of each well pair may provide additional information necessary to determine if leachate escaping the slurry wall contributes to the contamination in MW-90-14 and MW-8A. The isoelevation lines on **Figure 4** appear consistent with leakage through the slurry wall in this region, but may reflect the influence of the groundwater extraction system. Groundwater/leachate elevations in this area should be monitored periodically to ensure that the reported values are consistent with values measured currently.

It is noted that GMW-3, also located outside the slurry wall, perhaps 150 feet from MW-90-14, showed less than 4 µg/L total VOCs (**Figure 5**). The depth of each of these wells is approximately 37 feet, and there is perhaps a six foot difference in the elevation of the well screens. Variations of the deltaic sands in the area may contribute to the difference in contaminant concentrations measured in samples collected from these two wells. The historical data for GMW-3 shows relatively low but varying concentrations of TVOC. Since 2001, these concentrations have ranged from non-detect to 3.14 µg/L. The area containing reported contaminant concentrations exceeding the AWQS beyond the slurry wall is limited to a small area between the slurry wall to the west, MW-15 to the north, GMW-3 to the south and the pond to the east.

MW-8A is located downgradient of the landfill, approximately 200 feet beyond the slurry wall. The well was not sampled in AECOM's 2007 sampling event, nor is there any historical data readily available for this well. It has the second highest total VOC concentration of the sampled wells at the site (315.24 µg/L). Elevation data are not available for this well, so it is unknown if it is screened at an elevation similar to nearby wells MW-90-14 and GMW-3. However, all of the wells located outside of the fence east of the landfill (MW-8, MW-8A, MW-15 and MW-18) are less than 18 feet deep. Only MW-8A contained levels of VOCs above AWQS standards.

Semi-Volatile Organic Compounds

Historical data for the site's total semi-volatile organic compounds (TSVOCs) for selected wells are presented on **Table 3**. SVOCs have been detected at insignificant concentrations in half of the sampling events at GMW-6, the only monitoring well located within the waste mass. Reported TSVOC concentrations are less common in wells located outside of the slurry wall. Moreover, SVOCs have been detected only at insignificant, estimated concentrations (when detected) in ILCTS influent since 2007. For these reasons, AECOM recommended and the NYSDEC approved the deletion of SVOCs from the required analysis.

PCBs

Current and historical analytical data for PCBs as reported from groundwater samples are presented on **Tables 2**. Only GMW-4 and GMW-6 of the 13 wells sampled were reported to contain groundwater PCB concentrations in excess of laboratory reporting limits. Well GMW-4 is located outside the slurry wall and was reported to contain a concentration of 8 µg/L PCBs in groundwater. Well GMW-6 is located within the waste mass and was reported to contain a concentration of 7.3 µg/L PCBs in groundwater. GMW-4 is located downgradient of GMW-6, beyond the slurry wall. Analysis of the contaminant concentrations in GMW-4 suggests a lack of containment by the slurry wall in this area, or that attenuation of the historic contamination is slow.

Concentrations of PCBs in excess of the AWQS were reported for groundwater samples collected from GMW-4 and GMW-6 in the 2007 sampling event. Groundwater PCB concentrations reported for samples collected from MW-90-10C during the 2007 sampling event, exceeded the AWQS, in 2008 concentrations were reported to be below the instrument detection limit.

A review of the historical data presented in Table 3 indicates that PCB concentrations in well GMW-6 have been declining from a reported concentration of 164 µg/L (July 1998) to 7.3 µg/L in the September 2008 sampling event. PCB concentrations in GMW-4 have ranged from 23µg/L to1.4 µg/L with no apparent trend.

PCBs concentrations reported for groundwater samples collected in 2004 and earlier from wells GMW-1, GMW-2, GMW-3, MW-90-2C, and MW-90-14 were not detected in the two most recent sampling events.

One ILCTS influent sample was submitted for PCB analysis in 2008, and the results were reported to be less than the instrument detection limit.

Metals

The groundwater sample results are reported to contain six metals present in concentrations that exceed AWQS or GV (**Table 2**).

These metals include antimony (An), iron (Fe), magnesium (Mg), manganese (Mn), selenium (Se) and sodium (Na). Discharge limitations for five metals have been established to be applicable to the ILCTS effluent. Iron is the only element requiring reduction by the treatment system in order to meet the effluent limits, the following discussion will focus on this metal.

The greatest reported concentrations of iron are samples collected from monitoring well MW-15, located near the northeast corner of the Site. Historical results for this well were unavailable for comparison. An interesting feature of the Fe distribution is that the three upgradient wells (along or beyond the north side of the landfill cap) are ND, and that six of eight downgradient wells (located outside of the slurry wall) have higher Fe concentrations than GMW-6 located within the waste mass. This appears to be a persistent pattern.. In six of the seven events in which both wells were sampled, the Fe concentration reported for samples collected from GMW-4(outside the slurry wall) exceeded the concentrations reported for GMW-6.

Analytical data reported for leachate influent samples to the ILCTS was reviewed for additional information with respect to Fe concentrations within the waste mass. Typical influent Fe concentrations since 2003 have been in the 21,000 µg/L to 30,000 µg/L range, with a notable exception in November 2008 when only 278 µg/L of Fe was reported.

Table 3 presents reported metals concentrations from samples collected dating back to 1988. Iron concentrations in GMW-6 (installed within the waste mass) have ranged between 4,900 µg/L in 1988 and 820 µg/L in 2001. The decline in Fe concentrations reported for samples collected from this well occurred by 1991, when a concentration of 880 µg/L was reported. Iron levels therefore appear to have stabilized, albeit at much lower concentrations than reported for leachate influent to the ILCTS (which is drawn from a much larger area of the waste mass).

Iron concentrations reported for samples collected from wells GMW-2 and GMW-3 have decreased significantly beginning in the mid to late 90s. Current reported concentrations remain in excess of the groundwater standard for Fe (300 µg/L). Persistent exceedances of the Fe standard have been reported for well MW-90-14. The Fe concentrations reported from the 2007 and 2008 monitoring events for this well were approximately 17,000 µg/L. MW-18 reported a similar Fe concentration in 2008, but historical data has not been located for this well. Leachate elevation head values are greater when measured at wells inside the slurry wall, than measurements collected at wells outside the slurry wall (outward gradient), and persist during leachate extraction. The outward gradient conditions exist near wells exhibiting high Fe concentrations (from GMW-2 southward to GMW-4). On the other hand, an inward gradient exists at MW-90-6C where Fe was not detected.

As mentioned above in the discussion of VOC results, the presence of Fe in downgradient wells at concentrations well above background levels may indicate leakage of contaminants beyond the slurry wall.

ILCTS Influent and Effluent Results
Sampling of ILCTS influent and effluent is conducted monthly. Exceedances of the discharge permit requirements are rare; only one exceedance is noted in the recent past. One exceedance for Toluene was noted in 11/2009, this is most likely a laboratory error, as there was not Toluene detected in the Influent sample, and the results are flagged as being associated with a QC spike that had excess recovery. The results are presented in tables as **Appendix A**.

2.3 IC / EC Certification Plan Report

The Institutional and Engineering Controls Certification Form generated by the NYSDEC indicates that the following controls are applicable to the site.

Institutional Controls	Deficiencies Observed	
	Yes	**No**
Building Use Restriction		x
Ground Water Use Restriction		x
Landuse Restriction		x
Soil Management Plan		x
Surface Water Use Restriction		x
Engineering Controls		
Cover System	x	
Fencing/Access Control		x
Groundwater Containment	x	
Leachate Collection		x
Point-of-Entry Water Treatment		x
Pump & Treat		x
Subsurface Barriers		x
Signage and Notifications		x
Carbon Treatment Units Landfill Gas Vents	x	
Landfill Gas Vent System	x	

Easements established adjacent to the landfill to provide access to portions of the environmental monitoring network (**Figure 2**). The site was inspected by AECOM and a number of deficiencies ranging in severity from minor to severe. These deficiencies are identified and described in Section 5.0 Conclusions and Recommendations.

3.0 Evaluate Costs

3.1 Summary of Costs

AECOM began OM&M activities including operation of the ILCTS system in 2002. Aztech Technologies began operations and maintenance of the ILCTS in June 2009. Total cost for OM&M is annualized at $109,200 based on documented cost accrued between spring 2007 (initiation of Work Assignment) and spring 2009 (initiation of Aztech O&M), as tabulated below.

Kingsbury Landfill Cost Breakdown: 2007- 2009

Task 2 : Plant Operation	**Yearly Average**	
AECOM Labor & Travel	$20,500	
Subcontractors	$29,300	
Lab Fees	$3,800	
Utilities	$7,300	
Total for Task 2	**$60,900**	
Task 3 : Plant Maintenance		
AECOM Labor & Travel	$14,500	
Parts & Supplies	$900	
Total for Task 3	**$15,400**	
Task 4 : Groundwater Monitoring		
AECOM Labor	$3,200	
Subcontractor Labor	$5,000	
Lab Fees	$6,000	
Total for Task 4:	**$14,200**	*per event
Task 5 : Reporting		
AECOM Labor	$14,800	
Subcontractor Labor	$3,900	
Total for Task 5:	**$18,700**	
Total	**$109,200**	

Excluded from this table were $161,800 for subcontractor costs related to extensive system upgrades performed in late 2007 and early 2008. The nature of the upgrades was discussed in Section 3.1.2 of this report.

4.0 Observations

Several deficiencies were identified during PR process.

- Several areas of settlement were noted along the upper drainage swale leading to the let down structures.
- Groundwater sample results suggest that there may be a breach in the slurry wall providing a continuous release of leachate into the environment downgradient of MW-90-9B likely discharging to the adjacent pond.
- Landfill gas vent carbon treatment units are no longer functional.
- Fencing along the toe of the slope of the cover system was apparently off plumb. This condition had been addressed in the past, and the fence was restored to plumb. The recurrence of the issue suggests that the soil supporting the fence may be undergoing creep.
- Surface water and sediment sampling results are not available; the date of last round of these samples is unknown.

4.1 Conclusions and Recommendations

The periodic review process is intended to determine whether a Site continues to be properly managed and if the applied remedy continues to be protective of human health and the environment, while achieving the site cleanup goals established in the ROD or decision documents. Instances where a ROD or decision document has not been developed, the generic Remedial Action Objectives presented in the NYSDEC DER-10 are applied.

An annual Field Oversight PR is required for the Site.

The following deficiencies with appropriate recommendations have been identified as part of this PR:

- Slurry wall effectiveness is measured through analysis of sample results; contamination has been identified in downgradient wells.
  RECOMMENDATION: *Collect Shelby tube samples from the slurry wall in areas that potential leakage through the slurry wall exists for triaxial permeability analysis. Analyze the sample results to determine if leakage is occurring through the slurry wall, and initiate repairs if necessary. Establish and follow a statistical analysis program for tracking changing chemistry of contaminants of concern and a list of applicable monitoring parameters in order to determine if leachate is negatively impacting groundwater at the site.*

- Remedial goals require that affected surface water, groundwater and sediment be restored to background conditions. Sampling has not been conducted to ensure that surface water and sediment contaminant concentrations meet the requirements.
  RECOMMENDATION: *Collect surface water and sediment samples near historical locations. Locate the staff gauges reported to have been present in the feeder canal and Cutter Pond, reestablish as necessary, and reinstate the measurement of those water elevations.*

- Observations of well risers, fencing and slopes suggest that the southeast portion of the cap may be undergoing creep, which may lead to failure of the cap and cover system.
  RECOMMENDATION: *Complete a detailed topographic survey including the location and orientation of slopes, depressions and above ground components. Detailed topographic surveys of the capped area should be completed on a biannual basis, and verification surveys of limited areas of anomalous topography identified during inspections should be completed on an as needed basis. Install additional groundwater monitoring wells in critical locations.*

- LFG migration wells are not present at the Site, passive venting is likely inadequate, and the potential for subsurface LFG migration is increased.
  RECOMMENDATION: *Install additional landfill gas vents (typically one per acre), in order to alleviate the potential LFG overpressure that has formed as a result of inadequate venting and vent maintenance. Install monitoring points for landfill gas migration (typically 500' spacing along Site perimeter) along the northern portion of the landfill.*

- The carbon treatment units integrated into the landfill vent system are inoperable.
  RECOMMENDATION: *Sample off-gas to determine if carbon treatment units need replacement.*

- Pan lysimeters are inoperable.
  RECOMMENDATION: *Replace or repair pan lysimeters.*

TABLES

Table 1
Kingsbury Landfill
Village of Hudson Falls, New York
Site# 5-58-008
Water Level Measurements
September 2008

WELL ID	GROUND ELEVATION (ft)	Top of Riser ELEVATION (ft)	Sep-08 Well Depth (ft)	Sep-08 READINGS Depth to water	Elev.
GMW-2	196.61	198.20	31.50	11.27	186.93
GMW-3	178.87	181.06	37.00	4.36	176.70
GMW-4	184.14	187.18	19.65	9.25	177.93
GMW-5	221.09	223.39	28.65	23.68	199.71
GMW-6	226.05	228.85	79.00	28.98	199.87
MW-RW-1	213.17	215.27	76.73	17.11	198.16
MW-90-1	218.71	220.68	34.45	10.84	209.84
MW-90-2A	213.70	216.46	53.70	8.04	208.42
MW-90-2B	213.48	216.38	50.80	5.57	210.81
MW-90-2C	213.48	216.48	45.30	5.70	210.78
MW-90-3A	219.61	222.66	62.00	18.29	204.37
MW-90-3B	220.10	222.45	58.55	22.70	199.75
MW-90-3C	220.20	223.10	54.00	26.86	196.24
MW-90-4	216.94	219.24	45.00	8.32	210.92
MW-90-5	209.58	212.43	25.15	3.05	209.38
MW-90-6A	213.01	215.34	67.10	14.85	200.49
MW-90-6B	212.18	215.14	49.40	10.74	204.40
MW-90-6C	212.09	214.89	34.92	7.37	207.52
MW-90-7A	218.74	221.48	82.00	24.66	196.82
MW-90-7B	218.38	221.66	68.30	23.15	198.51
MW-90-7C	218.01	220.95	57.65	22.02	198.93
MW-90-8A	204.50	207.26	81.20	25.47	181.79
MW-90-8B	203.56	206.42	67.00	24.31	182.11
MW-90-9A	210.77	213.58	>100	26.53	187.05
MW-90-9B	210.65	213.35	84.50	17.59	195.76
MW-90-10A	203.36	206.06	57.70	16.40	189.66
MW-90-10B	203.44	205.84	52.45	16.88	188.96
MW-90-10C	203.03	205.98	54.80	14.34	191.64
MW-90-11A	208.88	212.06	62.55	20.90	191.16
MW-90-11B	208.63	211.70	61.70	18.21	193.49
MW-90-11C	208.91	211.86	55.00	13.37	198.49
MW-90-12	213.16	216.01	33.00	5.31	210.70
MW-90-13	209.28	212.37	30.00	3.93	208.44
MW-90-14	185.16	187.66	37.00	11.80	175.86
GMW-1 *	271.03 *	273.32 *	78.23	59.83	213.49
RW-2 *	213.91 *	216.67 *	58.4	18.52	198.15
MW-8	NM	NM	17.90	8.40	NM
MW-8A	NM	NM	15.00	4.01	NM
MW-15	NM	NM	15.25	7.24	NM
MW-18	NM	NM	17.25	11.21	NM

NM = not measured, elevations unknown.
* = This data is from the W.J. Rourke Associates survey conducted in January 1991.

Table 2
Kingsbury Landfill Site
Village of Hudson Falls, New York
Site #5-58-008
Summary of Groundwater Analytical Data

	ug/L	GMW-1				MW-90-0908***	GMW-2				GMW-3				GMW-4				
Volatiles ug/L	**AWQS + GV***	**6/13/2001**	**6/12/2002**	**06/26/07**	**09/29/08**	**09/29/08**	**06/13/01**	**06/12/02**	**06/26/07**	**09/29/08**	**06/13/01**	**06/12/02**	**06/26/07**	**09/29/08**	**06/13/01**	**12/05/01**	**06/12/02**	**06/27/07**	**09/29/08**
Dichlorodifluoromethane	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.50 U
Chloroform	7	10 U	10 U	**0.35 J**	**0.47 BJ**	**0.46 BJ**	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	**11**	0.50 U
Vinyl Chloride	2	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**0.71**	**0.58**	10 U	10 U	0.50 U	0.50 U	**140**	**10**	**110**	**99 D**	**32**
Chloroethane	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**0.77**	**0.6**	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.50 U
1,1-Dichloroethane	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**0.77**	**0.9**	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	**0.21 J**
cis-1,2-Dichloroethene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**2.3**	**3.9**	10 U	10 U	0.50 U	0.50 U	**250 E**	**39**	**150**	**130 D**	**95 E**
Trichloroethene	5	10 U	10 U	0.50 U	0.50 U	**0.38 J**	10 U	10 U	**3.5**	**5.9**	10 U	10 U	0.50 U	0.50 U	**12**	10 U	**7 J**	0.50 U	0.50 U
Chlorobenzene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**.44 J**	**0.7**	10 U	10 U	**.44 J**	**2.1**	10 U	10 U	10 U	**2.9**	**3.6**
1,4-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**0.82**	**1.3**	10 U	10 U	**.34 J**	**0.81**	10 U	10 U	10 U	**2.1**	**2.6**
1,2-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	**0.23 J**	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.05 U
1,2,4-Trichlorobenzene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.05 U
1,2,3-Trichlorobenzene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.05 U
Naphthalene	10	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.05 U
Methylene Chloride	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.05 U
trans-1,2-Dichloroethene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	**8 J**	10 U	**4 J**	**3.6**	**1.9**
Benzene	1	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	**0.47 J**	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	**.39 J**	**0.38 J**
1,3-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	**0.27 J**	10 U	10 U	0.50 U	**0.23 J**	10 U	10 U	10 U	**0.76**	**0.93**
Tetrachloroethene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.50 U
1,1-Dichloroethene	5	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.50 U
1,2-Dichloroethane	0.6	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	10 U	10 U	10 U	0.50 U	0.50 U
Semivolatiles ug/L	**ug/L**																		
bis (2-Ethylhexyl) phthalate	5	11 U	5 U	**2 J**	-	-	11 U	5 U	10 U	-	10 U	5 U	10 U	-	10 U	-	5 U	10 U	-
1,4-Dichlorobenzene	3	11 U	5 U	10 U	-	-	11 U	5 U	10 U	-	10 U	5 U	10 U	-	10 U	-	**2 J**	**2 J**	-
PCB Organics ug/L	**ug/L**																		
Aroclor-1242	0.09	0.056 U	0.05 U	0.30 U	0.30 U	0.30 U	0.053 U	0.059 U	0.30 U	0.30 U	0.052 U	0.05 U	0.30 U	0.30 U	**3.7 E**	**3.3**	0.05 U	**9.4**	1.5 U
Aroclor-1232	0.09	0.056 U	0.05 U	0.30 U	0.30 U	0.30 U	0.053 U	0.059 U	0.30 U	0.30 U	0.052 U	0.05 U	0.30 U	0.30 U	0.051 U	0.10 U	**3.4 E**	3.0 U	**8**
Aroclor-1221	0.09	0.056 U	0.05 U	0.30 U	0.30 U	0.30 U	**7.9 E**	**1.3**	0.30 U	0.30 U	0.052 U	0.05 U	0.30 U	0.30 U	0.051 U	0.10 U	0.05 U	3.0 U	1.5 U
Aroclor-1016	0.09	0.056 U	0.05 U	0.30 U	0.30 U	0.30 U	0.053 U	**1.2**	0.30 U	0.30 U	0.052 U	**0.03 J**	0.30 U	0.30 U	0.051 U	0.10 U	0.05 U	3.0 U	1.5 U
Aroclor-1260	0.09	0.056 U	0.05 U	0.30 U	0.30 U	0.30 U	0.053 U	0.059 U	0.30 U	0.30 U	0.052 U	0.05 U	0.30 U	0.30 U	0.051 U	0.10 U	0.05 U	3.0 U	1.5 U
Metals ug/L	**ug/L**																		
Aluminum	NS	62 U	62 U	**170 B**	56.0 U	56.0 U	62 U	62 U	14.0 U	56.0 U	62 U	**120 B**	**23.1 B**	56.0 U	62 U	62 U	62 U	**20.4 B**	56.0 U
Antimony	3	37 U	37 U	1.2 U	4.6 U	4.6 U	37 U	37 U	**3.8 B**	4.6 U	37 U	37 U	**4.6 B**	4.6 U	37 U	37 U	37 U	1.2 U	4.6 U
Arsenic	25	8 U	8 U	1.6 U	5.3 U	5.3 U	8 U	8 U	**3.8 B**	5.3 U	8 U	8 U	**4.9 B**	5.3 U	8 U	8 U	8 U	1.6 U	5.3 U
Barium	1000	200 U	200 U	**6.1 B**	8.5 U	8.5 U	200 U	200 U	**15.1 B**	**12.9 B**	200 U	200 U	**32.1 B**	**29.7 B**	200 U	200 U	200 U	**38.4 B**	**36.0 B**
Beryllium	3	5.0 U	5.0 U	0.13 U	0.13 U	0.13 U	5.0 U	5.0 U	0.13 U	0.13 U	5.0 U	5 U	0.13 U	0.13 U	5.0 U	5.0 U	5.0 U	0.13 U	0.13 U
Cadmium	10	5.0 U	5.0 U	0.14 U	0.14 U	0.14 U	5.0 U	5.0 U	0.14 U	0.14 U	5.0 U	5 U	0.14 U	0.14 U	5.0 U	5.0 U	5.0 U	0.14 U	0.14 U
Calcium	NS	**26000**	**22000**	**24500**	**28500**	**27000**	**52000**	**56000**	**53100**	**42000**	**66000**	**41000**	**52100**	**44700**	**87000**	**82000**	**84000**	**69300**	**74300**
Chromium	50	10 U	10 U	**0.64 B**	1.1 U	1.1 U	10 U	10 U	0.38 U	1.1 U	10 U	10 U	0.38 U	1.1 U	10 U	10 U	10 U	0.38 U	1.1 U
Cobalt	NS	34 U	34 U	**0.28 B**	**1.5 B**	1.2 U	34 U	34 U	**0.95 B**	**1.3 B**	34 U	34 U	**0.87 B**	1.2 U	34 U	34 U	34 U	**1.6 B**	**1.3 B**
Copper	1000	22 U	22 U	5.0 U	**9.0 B**	5.0 U	22 U	22 U	5.0 U	**5.3 B**	22 U	22 U	5.0 U	**5.7 B**	22 U	22 U	22 U	5.0 U	**7.1 B**
Iron	300	53 U	53 U	**311**	61.0 U	61.0 U	**28000**	**610**	**5660**	**3610**	**4300**	**14000**	**10200**	**11600**	**1400**	**1600**	**280**	**1750**	**2120**
Magnesium	35,000 (GV)	**4300 B**	**3800 B**	**4460**	**5090**	**4800**	**19000**	**21000**	**20300**	**15800**	**23000**	**14000**	**19900**	**15700**	**26000**	**22000**	**25000**	**15900**	**18800**
Manganese	300	7 U	7 U	**9.4 B**	0.96 U	0.96 U	**2200**	**170**	**450**	**678**	**440**	**620**	**775**	**261**	**1500**	**1100**	**1200**	**1080**	**836**
Nickel	100	40 U	40 U	**1.4 B**	1.5 U	1.5 U	40 U	40 U	**2.8 B**	**2.0 B**	40 U	40 U	**1.9 B**	**1.6 B**	**40 U**	40 U	40 U	**3.5 B**	**2.0 B**
Potassium	NS	5000 U	5000 U	**782 B**	**799 B**	**683 B**	**5000 U**	5000 U	**2180**	**1900**	5000 U	5000 U	**3990**	**3190**	**5000 U**	5000 U	5000 U	**2800**	**2760**
Selenium	10	5.0 U	5.0 U	0.98 U	6.6 U	6.6 U	5.0 U	5.0 U	**14.5 B**	6.6 U	5.0 U	5 U	**9.3 B**	6.6 U	5.0 U	5.0 U	5.0 U	**11.5 B**	6.6 U
Silver	50	4.0 U	4.0 U	**2.4 B**	0.59 U	0.59 U	4.0 U	4.0 U	**4.4 B**	0.59 U	4.0 U	4 U	**3.3 B**	0.59 U	4.0 U	4.0 U	4.0 U	**6.2 B**	0.59 U
Sodium	20,000	**19000**	**21000**	**24600**	**28300**	**26900**	**4200**	**6600**	**10900**	**10500**	**3100**	**4300 B**	**4300**	**4710**	**6900**	**9000**	**23000**	**15200**	**12300**
Vanadium	NS	20 U	20 U	**0.95 B**	0.96 U	0.96 U	20 U	20 U	0.47 U	0.96 U	20 U	20 U	**0.70 B**	0.96 U	20 U	20 U	20 U	0.47 U	0.96 U
Zinc	2,000 (GV)	10 U	10 U	**16.1 B**	**18.3 B**	**12.9 B**	10 U	10 U	**18.5 B**	**13.5 B**	10 U	10 U	**14.9 B**	**12.0 B**	10 U	10 U	10 U	**18.5 B**	**14.3 B**
Wet Chemistry																			
Oil & Grease, HEM mg/L	NS			5 U	5 U	**6**			5 U	5 U			5 U	5 U				450	5 U
TOC mg/L	NS			10 U	20 U	20 U			10 U	20 U			10 U	20 U				10 U	20 U
Total Settleable Solids mL/L	NS			1 U	1 U	1 U			1 U	1 U			1 U	1 U				1 U	1 U
Total Suspended Solids mg/L	NS			10 U	10 U	10 U			16	10 U			19	**11**				10 U	10 U
pH Value S.U.	NS			6.8	6.6	6.7			6.6	6.3			6.8	6.4				7.0	6.6
COD mg/L	NS			20 U	21 U	20 U			20 U	20 U			20 U	20 U				20 U	20 U
Biological Oxygen Demand mg/L	NS			2 U	**5.7**	3 U			2 U	3 U			2.4	**11**				2.7	3 U

Notes:
B - For organic analyses - compound detected in laboratory method blank.
For inorganic analyses - indicates trace concentration below reporting limit and equal to or above the detection limit.
U - Compound not detected at or above the instrument detection limit (IDL).
J - Estimated concentration above the IDL but less than the contract required detection limits (CRDL).
D - Results from a subsequent dilution of the original sample due to original sample results being outside the linear range.
* New York State Ambient Water Quality Standards (TOGs 1.1.1) GV - guidance value.
** MW-90-10C-D is a duplicate sample of MW-90-10C.
***MW-90-0908 is a duplicate sample of GMW-1
Detected concentrations shown in **bold** font. **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
NS - no standard or Guidance Value
E - Reprted result exceeds the instrument calibration range.

Table 2
Kingsbury Landfill Site
Village of Hudson Falls, New York
Site #5-58-008
Summary of Groundwater Analytical Data

	ug/L	GMW-6				MW-90-10C				MW-90-10C-D**	MW-90-14			
Volatiles ug/L	**AWQS + GV***	**12/05/01**	**06/12/02**	**06/27/07**	**09/29/08**	**06/13/01**	**06/12/02**	**06/26/07**	**09/30/08**	**06/26/07**	**06/13/01**	**06/12/02**	**06/26/07**	**09/29/08**
Dichlorodifluoromethane	5	10 U	10 U	0.50 U	**1.90**	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	**0.73**
Chloroform	7	**6 J**	**10 U**	**4.9**	**5.3 B**	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
Vinyl Chloride	2	**18**	**27**	**8.1**	**7.2**	10 U	10 U	**0.93**	**1.2**	**0.98**	**33**	**29**	**10**	**7.7**
Chloroethane	5	10 U	10 U	**0.81**	0.50 U	10 U	10 U	**0.59**	0.50 U	**0.6**	10 U	10 U	**1.6**	0.50 U
1,1-Dichloroethane	5	**6 J**	10 U	**4.3**	**7.4**	10 U	10 U	0.50 U	**0.39 J**	0.50 U	10 U	10 U	**1.4**	**1.9**
cis-1,2-Dichloroethene	5	**100**	**95**	**96 D**	**210 E**	**4 J**	10 U	**5.5**	**13**	**5.2**	**49**	**23**	**40**	**25**
Trichloroethene	5	**700 E**	**470 E**	**560 D**	**410 E**	**6 J**	**6 J**	**4.7**	**7.5**	**4.7**	**17**	**29**	**20**	**31**
Chlorobenzene	5	10 U	10 U	**0.53**	**1.3**	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	**.35 J**	**0.54**
1,4-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
1,2-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
Naphthalene	10	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
Methylene Chloride	5	10 U	10 U	0.50 U	**0.21 BJ**	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	5	10 U	10 U	**2.3**	**4.4**	10 U	10 U	0.50 U	**0.28 J**	0.50 U	10 U	10 U	**1.5**	**2.2**
Benzene	1	10 U	10 U	**.32 J**	**0.63**	10 U	10 U	0.50 U	0.50 U	0.50 U	**5 J**	10 U	**2.9**	**5.6**
1,3-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
Tetrachloroethene	5	10 U	10 U	**0.34 JB**	**0.67**	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
1,1-Dichloroethene	5	**5 J**	10 U	**6.7**	**19**	10 U	10 U	0.50 U	**0.56**	0.50 U	10 U	10 U	0.50 U	0.50 U
1,2-Dichloroethane	0.6	10 U	10 U	**1.9**	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U
Semivolatiles ug/L	**ug/L**													
bis (2-Ethylhexyl) phthalate	5	-	5 U	10 U	-	10 U	5 U	10 U	-	10 U	11 U	5 U	10 U	-
1,4-Dichlorobenzene	3	-	**2 J**	10 U	-	10 U	5 U	10 U	-	10 U	11 U	5 U	10 U	-
PCB Organics ug/L	**ug/L**													
Aroclor-1242	0.09	**5.4 E**	0.05 U	**0.67**	1.5 U	0.053 U	0.054 U	0.30 U	0.30 U	0.30 U	0.053 U	0.05 U	0.30 U	0.30 U
Aroclor-1232	0.09	0.10 U	**4.9 E**	0.30 U	**7.3**	0.053 U	**0.74**	0.30 U	0.30 U	0.30 U	0.053 U	0.05 U	0.30 U	0.30 U
Aroclor-1221	0.09	0.10 U	0.05 U	0.30 U	1.5 U	**0.65**	0.054 U	**1.1**	0.30 U	**1.6**	0.053 U	0.05 U	0.30 U	0.30 U
Aroclor-1016	0.09	0.10 U	0.05 U	0.30 U	1.5 U	0.053 U	0.0.54 U	0.30 U	0.30 U	0.30 U	0.053 U	0.05 U	0.30 U	0.30 U
Aroclor-1260	0.09	0.10 U	0.05 U	0.30 U	1.5 U	0.053 U	0.0.54 U	0.30 U	0.30 U	0.30 U	0.053 U	0.05 U	0.30 U	0.30 U
Metals ug/L	**ug/L**													
Aluminum	NS	62 U	**270**	**16.1 B**	56.0 U	62 U	62 U	**20.9 B**	56.0 U	14.0 U	62 U	**200**	**25.2 B**	56.0 U
Antimony	3	37 U	37 U	**8.7 B**	4.6 U	37 U	37 U	**1.3 B**	4.6 U	**2.7 B**	37 U	37 U	**5.3 B**	4.6 U
Arsenic	25	8 U	8 U	1.6 U	5.3 U	8 U	8 U	1.6 U	5.3 U	1.6 U	8 U	8 U	1.6 U	5.3 U
Barium	1000	200 U	200 U	**45.6 B**	**51.8 B**	200 U	200 U	**39.3 B**	**37.7 B**	**38.3 B**	200 U	200 U	**116 B**	**110 B**
Beryllium	3	5.0 U	5.0 U	0.13 U	0.13 U	5.0 U	5.0 U	0.13 U	0.13 U	0.13 U	5.0 U	5.0 U	0.13 U	0.13 U
Cadmium	10	5.0 U	5.0 U	0.14 U	**0.17 B**	5.0 U	5.0 U	0.14 U	0.14 U	0.14 U	5.0 U	5.0 U	0.14 U	0.14 U
Calcium	NS	**180000**	**170000**	**155000**	**162000**	**79000**	**76000**	**71100**	**69600**	**70700**	**180000**	**140000**	**109000**	**97300**
Chromium	50	10 U	10 U	0.38 U	1.1 U	10 U	10 U	0.38 U	1.1 U	0.38 U	10 U	10 U	0.38 U	1.1 U
Cobalt	NS	34 U	34 U	**2.7 B**	**1.8 B**	34 U	34 U	**1.4 B**	1.2 U	**1.3 B**	34 U	34 U	**2.1 B**	1.2 U
Copper	1000	22 U	22 U	5.0 U	**6.3 B**	22 U	22 U	5.0 U	5.0 U	5.0 U	22 U	22 U	5.0 U	5.0 U
Iron	300	**820**	**1400**	**1320**	**831**	**220**	**130**	**446**	**114 B**	**470**	**36000**	**21000**	**16800**	**16900**
Magnesium	35,000 (GV)	**58000**	**58000**	**52700**	**57200**	**21000**	**20000**	**20300**	**20000**	**20200**	**59000**	**46000**	**36000**	**31700**
Manganese	300	**1400**	**1400**	**690**	**920**	**1000**	**860**	**920**	**890**	**917**	**1000**	**720**	**871**	**813**
Nickel	100	40 U	40 U	**6.6 B**	**3.8 B**	40 U	40 U	**3.1 B**	**1.8 B**	**3.2 B**	40 U	40 U	**5.7 B**	**2.3 B**
Potassium	NS	5000 U	5000 U	**1970**	**2210**	5000 U	5000 U	**1500**	**1480**	**1490**	5000 U	5000 U	**2590**	**2230**
Selenium	10	5.0 U	5.0 U	**3.8 B**	6.6 U	5.0 U	5.0 U	**6.7 B**	6.6 U	**13.0 B**	5.0 U	5.0 U	**16.4 B**	6.6 U
Silver	50	4.0 U	4.0 U	**12.9 B**	0.59 U	4.0 U	4.0 U	**7.5 B**	0.59 U	**6.9 B**	4.0 U	4.0 U	**7.5 B**	0.59 U
Sodium	20,000	**62000**	**62000**	**51500**	**55300**	**28000**	**29000**	**31600**	**27300**	**31000**	**110000**	**94000**	**63900**	**53800**
Vanadium	NS	20 U	20 U	0.47 U	0.96 U	20 U	20 U	0.47 U	0.96 U	0.47 U	20 U	20 U	0.63 B	0.96 U
Zinc	2,000 (GV)	10 U	10 U	**12.7 B**	**10.5 B**	10 U	10 U	**17.0 B**	**12.0 B**	**18.2 B**	10 U	10 U	**20.0 B**	**14.5 B**
Wet Chemistry														
Oil & Grease, HEM mg/L	NS			5 U	5 U			5 U	**5.2**	5 U			5.0	5 U
TOC mg/L	NS			10 U	20 U			10 U	20 U	10 U			13	20 U
Total Settleable Solids mL/L	NS			1 U	1 U			1 U	1 U	1 U			1.0	1 U
Total Suspended Solids mg/L	NS			10 U	10 U			10 U	10 U	10 U			23	**23**
pH Value S.U.	NS			7.0	6.7			7.1	**7**	7.1			6.7	6.6
COD mg/L	NS			20 U	20 U			20 U	20 U	20 U			34	**33**
Biological Oxygen Demand mg/L	NS			2 U	**6.9**			2 U	**8.1**	2 U			6 U	**6.0**

Notes:
B - For organic analyses - compound detected in laboratory method blank.
For inorganic analyses - indicates trace concentration below reporting limit and equal to or above the detection limit.
U - Compound not detected at or above the instrument detection limit (IDL).
J - Estimated concentration above the IDL but less than the contract required detection limits (CRDL).
D - Results from a subsequent dilution of the original sample due to original sample results being outside the linear range.
* New York State Ambient Water Quality Standards (TOGs 1.1.1) GV - guidance value.
** MW-90-10C-D is a duplicate sample of MW-90-10C.
***MW-90-0908 is a duplicate sample of GMW-1
Detected concentrations shown in **bold** font. **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
NS - no standard or Guidance Value
E- Reprted result exceeds the instrument calibration range.

Table 2
Kingsbury Landfill Site
Village of Hudson Falls, New York
Site #5-58-008
Summary of Groundwater Analytical Data

	ug/L	MW-90-2C				MW-90-6C				MW-8	MW-8A	MW-15	MW-18	
Volatiles ug/L	**AWQS + GV***	**06/13/01**	**06/12/02**	**06/26/07**	**09/29/08**	**06/13/01**	**06/12/02**	**06/26/07**	**09/29/08**	**09/30/08**	**09/30/08**	**09/30/08**	**9/30/2008**	
Dichlorodifluoromethane	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
Chloroform	7	10 U	10 U	0.50 U	**0.31 J**	10 U	10 U	**0.85**	**1.1 B**	0.50 U	**0.71**	0.50 U	0.50 U	
Vinyl Chloride	2	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**4**	0.50 U	0.50 U	
Chloroethane	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
1,1-Dichloroethane	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**3.1**	0.50 U	0.50 U	
cis-1,2-Dichloroethene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**180 E**	**0.36 J**	0.50 U	
Trichloroethene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	**.46 J**	**0.30 J**	0.50 U	**160 E**	**0.25 J**	0.50 U	
Chlorobenzene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**4.1**	**0.47 J**	0.50 U	
1,4-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**4**	**1.1**	0.50 U	
1,2-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	**0.25 J**	0.50 U	
1,2,4-Trichlorobenzene	5	10 U	10 U	0.50 U	**0.21 J**	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
1,2,3-Trichlorobenzene	5	10 U	10 U	0.50 U	**0.34 J**	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
Naphthalene	10	10 U	10 U	0.50 U	**0.29 J**	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
Methylene Chloride	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**0.33 BJ**	0.50 U	0.50 U	
trans-1,2-Dichloroethene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**5.1**	0.50 U	0.50 U	
Benzene	1	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**1.8**	**0.20 J**	0.50 U	
1,3-Dichlorobenzene	3	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**0.4 J**	0.50 U	0.50 U	
Tetrachloroethene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
1,1-Dichloroethene	5	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	**1.7**	0.50 U	0.50 U	
1,2-Dichloroethane	0.6	10 U	10 U	0.50 U	0.50 U	10 U	10 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	
Semivolatiles ug/L	**ug/L**													
bis (2-Ethylhexyl) phthalate	5	10	5 U	10U	U	11	5 U	10U	-U	-	-	-	-	
1,4-Dichlorobenzene	3	10	5 U	10U	U	11	5 U	10U	-U	-	-	-	-	
PCB Organics ug/L	**ug/L**													
Aroclor-1242	0.09	0.051 U	0.05 U	0.30 U	0.30 U	0.051 U	0.052 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	
Aroclor-1232	0.09	0.051 U	0.05 U	0.30 U	0.30 U	0.051 U	0.052 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	
Aroclor-1221	0.09	0.051 U	0.05 U	0.30 U	0.30 U	0.051 U	0.052 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	
Aroclor-1016	0.09	0.051 U	0.05 U	0.30 U	0.30 U	0.051 U	0.0.52 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	
Aroclor-1260	0.09	0.051 U	0.05 U	0.30 U	0.30 U	0.051 U	0.0.52 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	
Metals ug/L	**ug/L**													
Aluminum	NS	62 U	62 U	14.0 U	56.0 U	62 U	62 U	**58.0 B**	56.0 U	**2910**	56.0 U	**84.6 B**	56.0 U	
Antimony	3	37 U	37 U	1.2 U	4.6 U	37 U	37 U	1.2 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	
Arsenic	25	8 U	8 U	1.6 U	5.3 U	8 U	8 U	1.6 U	5.3 U	5.3 U	5.3 U	5.3 U	5.3 U	
Barium	1000	200 U	200 U	**8.0 B**	**159 B**	200 U	200 U	**10.1 B**	**10.5 B**	**265**	**40.2**	**39.6 B**	**20.8 B**	
Beryllium	3	5.0 U	5.0 U	0.13 U	0.13 U	5.0 U	5.0 U	0.13 U	0.13 U	**0.35 B**	0.13 U	0.13 U	0.13 U	
Cadmium	10	5.0 U	5.0 U	0.14 U	0.14 U	5.0 U	5.0 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	
Calcium	NS	**36000**	**44000**	**34300**	**427000**	**32000**	**26000**	**31600**	**30400**	**114000**	**112000**	**86600**	**55400**	
Chromium	50	10 U	10 U	**0.68 B**	1.1 U	10 U	10 U	0.64 B	1.1 U	**5.9 B**	1.1 U	1.1 U	1.1 U	
Cobalt	NS	34 U	34 U	**0.26 B**	1.2 U	34 U	34 U	**0.26 B**	1.2 U	**7.7 B**	**5.5 B**	**2.0 B**	**8.3 B**	
Copper	1000	22 U	22 U	5.0 U	**5.1 B**	22 U	22 U	5.0 U	5.0 U	**15.3 B**	**8.6 B**	**5.9 B**	5.0 U	
Iron	300	53 U	53 U	**158 B**	61.0 U	**84 B**	53 U	**326**	61.0 U	**6480**	**471**	**21800**	**17100**	
Magnesium	35,000 (GV)	**7700**	**9200**	**7320**	**77700**	**6400**	**5400**	**6830**	**6500**	**33900**	**41100**	**26100**	**22900**	
Manganese	300	7 U	7 U	**2.3 B**	**1.3 B**	7 U	7 U	**2.4 B**	0.96 U	**168**	**1830**	**3030**	**1670**	
Nickel	100	40 U	40 U	**1.5 B**	**2.0 B**	40 U	40 U	**1.3 B**	1.5 U	**9.0 B**	**4.8 B**	**1.7 B**	**1.6 B**	
Potassium	NS	5000 U	5000 U	**718 B**	**2920**	5000 U	5000 U	**746 B**	**726 B**	**1580**	**2330**	**2370**	**2280**	
Selenium	10	5.0 U	5.0 U	**12.0 B**	**13.4 B**	5.0 U	5.0 U	**10.3 B**	6.6 U	6.6 U	6.6 U	6.6 U	6.6 U	
Silver	50	4.0 U	4.0 U	**3.6 B**	0.59 U	4.0 U	4.0 U	**2.6 B**	0.59 U	0.59 U	0.59 U	0.59 U	0.59 U	
Sodium	20,000	**17000**	**20000**	**18200**	**170000**	**18000**	**19000**	**24900**	**27700**	**13600**	**87800**	**5510**	**3760**	
Vanadium	NS	20 U	20 U	**1.2 B**	0.96 U	20 U	20 U	0.72 B	0.96 U	**7.7 B**	0.96 U	0.96 U	0.96	
Zinc	2,000 (GV)	10 U	10 U	**17.0 B**	**14.2 B**	10 U	10 U	**15.1 B**	**12.0 B**	**44.4 B**	**16.9 B**	**14.8 B**	**14.5 B**	
Wet Chemistry														
Oil & Grease, HEM mg/L	NS			5	U 5	U		5	U	5 U	5 U	5 U	5 U	5 U
TOC mg/L	NS			10 U	20 U			10 U	20 U	20 U	20 U	20 U	20 U	
Total Settleable Solids mL/L	NS			1	U 1	U		1	U	1 U	1 U	1 U	1 U	1 U
Total Suspended Solids mg/L	NS			10 U	10 U			10 U	10 U	**73**	10 U	**35**	**10**	
pH Value S.U.	NS			7.5	6.2			7.1	6.9	6.9	6.7	6.6	6.5	
COD mg/L	NS			20 U	**33**			20 U	20 U	20 U	**32**	**23**	20 U	
Biological Oxygen Demand mg/L	NS			2 U	3 U			2 U	3 U	**5.4**	**9.3**	**6.6**	**9.6**	

Notes:

B - For organic analyses - compound detected in laboratory method blank.
For inorganic analyses - indicates trace concentration below reporting limit and equal to or above the detection limit.
U - Compound not detected at or above the instrument detection limit (IDL).
J - Estimated concentration above the IDL but less than the contract required detection limits (CRDL).
D - Results from a subsequent dilution of the original sample due to original sample results being outside the linear range.
* New York State Ambient Water Quality Standards (TOGs 1.1.1) GV - guidance value.
** MW-90-10C-D is a duplicate sample of MW-90-10C.
***MW-90-0908 is a duplicate sample of GMW-1
Detected concentrations shown in **bold** font. **BOLD** font in shaded cell indicates exceedances of AWQS+GV.
NS - no standard or Guidance Value
E- Reprted result exceeds the instrument calibration range.

Table 3
Kingsbury Landfill Site
Village of Hudson Falls, New York
Site #5-58-008

Historical Groundwater Analytical Data Summary
for Selected Wells

Well	Date	TVOCs	TSVOCs	PCBs	Mg	Fe	Mn	Na
GMW-1	Aug 1990	ND	ND	0.38	NA	110	9	NA
	Nov 1990	190.00	ND	ND	NA	100	12	NA
	Feb 1991	ND	ND	ND	NA	120	ND	NA
	May 1991	ND	ND	ND	NA	32	ND	NA
	Aug 1991	6.00	ND	ND	4,800	180	ND	NA
	Sep 1992	ND	ND	ND	NA	33	ND	NA
	May 1994	ND	ND	ND	NA	ND	ND	NA
	Nov 1994	ND	ND	ND	NA	450	ND	NA
	Jul 1995	ND	ND	ND	NA	41	ND	NA
	Oct 1997	ND	ND	2.10	NA	38.9	0.88	NA
	Jun 2001	ND	ND	ND	4,300	ND	ND	19,000
	Jun 2002	ND	ND	ND	3,800	ND	ND	21,000
	Aug 2004	ND	9.50	ND	NA	NA	NA	NA
	Jun 2007	0.35	2.00	ND	4,460	311	9.4	24,600
	Sep 2008	0.47	NA	ND	5,090	ND	ND	28,300
GMW-2	Aug 1990	ND	ND	0.99	NA	16,000	7,610	NA
	Nov 1990	ND	ND	ND	NA	34,000	8,610	NA
	Feb 1991	ND	ND	ND	NA	59,000	2,940	NA
	May 1991	ND	3.00	130.00	NA	99,000	2,600	NA
	Aug 1991	23.00	ND	112.00	19,000	79,000	2,000	NA
	Sep 1992	ND	ND	1.20	NA	81,300	3,190	NA
	May 1994	ND	ND	ND	NA	330,000	2,000	NA
	Nov 1994	1.00	ND	ND	NA	140,000	3,550	NA
	Jul 1995	16.40	ND	ND	NA	150,000	5,740	NA
	Oct 1997	26.90	ND	16.00	NA	192,000	3,910	NA
	Jun 2001	ND	ND	7.90	19,000	28,000	2,200	4,200
	Jun 2002	ND	ND	2.50	21,000	610	170	6,600
	Aug 2004	17.00	1.50	ND	NA	NA	NA	NA
	Jun 2007	9.31	ND	ND	20,300	5,660	450	10,900
	Sep 2008	14.85	NA	ND	15,800	3,610	678	10,500
GMW-3	Aug 1990	15.00	ND	1.20	NA	27,000	3,020	NA
	Nov 1990	ND	ND	ND	NA	30,000	4,000	NA
	Feb 1991	8.00	ND	ND	NA	30,000	4,620	NA
	May 1991	12.00	ND	ND	NA	48,000	4,300	NA
	Aug 1991	34.00	2.00	ND	35,000	77,000	5,100	NA
	Sep 1992	ND	ND	ND	NA	31,100	2,880	NA
	May 1994	3.00	10.00	ND	NA	190,000	4,000	NA
	Nov 1994	11.80	ND	ND	NA	69,000	5,500	NA
	Jul 1995	9.60	ND	ND	NA	84,500	2,990	NA
	Oct 1997	6.30	ND	ND	NA	58,300	1,700	NA
	Jun 2001	ND	ND	ND	23,000	4,300	440	3,100
	Jun 2002	ND	2.00	0.03	14,000	14,000	620	4,300
	Aug 2004	3.00	3.70	ND	NA	NA	NA	NA
	Jun 2007	0.78	ND	ND	19,900	10,200	775	4,300
	Sep 2008	3.14	NA	ND	15,700	11,600	261	4,710

Notes:
All data in ug/L (or ppb)
ND - Not detected
NA - Not analyzed
TVOCs - Total Volatile Organic Compounds
TSVOCs - Total Semi-Volatile Organic Compounds

Table 3
Kingsbury Landfill Site
Village of Hudson Falls, New York
Site #5-58-008

Historical Groundwater Analytical Data Summary
for Selected Wells

		TVOCs	TSVOCs	PCBs	Mg	Fe	Mn	Na
GMW-4	Aug 1990	64.00	ND	6.80	NA	1,100	2,380	NA
	Nov 1990	7.00	ND	3.20	NA	1,300	5,090	NA
	Feb 1991	153.00	ND	6.40	NA	11,000	2,800	NA
	Apr 1991	25.00	NA	23.00	NA	1,800	1,450	NA
	May 1991	169.00	ND	14.68	NA	3,400	2,300	NA
	Aug 1991	56.00	ND	12.70	29,000	28,000	2,400	NA
	Sep 1992	50.00	ND	5.00	NA	1,970	1,620	NA
	May 1994	83.70	ND	3.00	NA	620	2,200	NA
	Nov 1994	180.80	ND	1.40	NA	240	2,100	NA
	Jul 1995	122.00	ND	3.35	NA	736	2,010	NA
	Oct 1997	130.10	ND	8.20	NA	45,600	1,770	NA
	Jun 2001	410.00	ND	3.70	26,000	1,400	1,500	6,900
	Dec 2001	49.00	NA	3.30	22,000	1,600	1,100	9,000
	Jun 2002	361.00	3.00	3.40	25,000	280	1,200	23,000
	Aug 2004	196.00	12.80	20.00	NA	NA	NA	NA
	Jun 2007	249.75	2.00	9.40	15,900	1,750	1,080	15,200
	Sep 2008	123.62	NA	8.00	18,800	2,120	836	12,300
GMW-6	Jul 1988	613.30	ND	164.00	NA	4,900	3,400	64,400
	Feb 1991	970.00	36.00	66.00	NA	880	267	NA
	May 1991	696.00	ND	12.89	NA	960	260	NA
	Dec 2001	535.00	NA	5.90	58,000	820	1,400	62,000
	Jun 2002	872.00	2.00	4.90	58,000	1,400	1,400	62,000
	Aug 2004	822.00	0.90	4.30	NA	NA	NA	NA
	Jun 2007	686.20	ND	0.67	52,700	1,320	690	51,500
	Sep 2008	1,048.01	NA	7.30	57,200	831	920	55,300
MW-90-2C	Feb 1991	ND	ND	ND	NA	250	35	NA
	Oct 1997	ND	ND	ND	NA	60.20	4.5	NA
	Jun 2001	ND	ND	ND	7,700	ND	ND	17,000
	Jun 2002	ND	ND	ND	9,200	ND	ND	20,000
	Aug 2004	4.00	2.60	3.00	NA	NA	NA	NA
	Jun 2007	ND	ND	ND	7,320	158	2.3	18,200
	Sep 2008	1.15	NA	ND	77,700	ND	1.3	170,000
MW-90-6C	Feb 1991	9.00	ND	ND	NA	450	ND	NA
	Oct 1997	ND	ND	ND	NA	368	9.40	NA
	Jun 2001	ND	ND	ND	6,400	84	ND	18,000
	Jun 2002	ND	ND	ND	5,400	ND	ND	19,000
	Aug 2004	6.00	1.00	ND	NA	NA	NA	NA
	Jun 2007	1.31	ND	ND	6,830	326	2.40	24,900
	Sep 2008	1.40	NA	ND	6,500	ND	ND	27,700

Notes:
All data in ug/L (or ppb)
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TSVOCs - Total Semi-Volatile Organic Compounds

Table 3
Kingsbury Landfill Site
Village of Hudson Falls, New York
Site #5-58-008

Historical Groundwater Analytical Data Summary
for Selected Wells

		TVOCs	TSVOCs	PCBs	Mg	Fe	Mn	Na
MW-90-10C	Feb 1991	150.00	ND	ND	NA	6,200	926	NA
	May 1991	92.00	17.00	ND	NA	1,600	270	NA
	Aug 1991	125.00	2.00	ND	13	17,000	860	NA
	Sep 1992	48.00	ND	ND	NA	686	181	NA
	May 1994	31.20	ND	ND	NA	410	820	NA
	Nov 1994	33.10	ND	ND	NA	330	920	NA
	Jul 1995	24.60	ND	ND	NA	425	947	NA
	Oct 1997	10.00	ND	1.20	NA	298	919	NA
	Jun 2001	10.00	ND	0.65	21,000	220	1,000	28,000
	Jun 2002	6.00	ND	0.74	20,000	130	860	29,000
	Aug 2004	15.00	1.00	ND	NA	NA	NA	NA
	Jun 2007	11.72	ND	1.10	20,300	446	920	31,600
	Sep 2008	22.93	NA	ND	20,000	114	890	27,300
MW-90-14	Feb 1990	139.00	ND	ND	NA	20,000	761	NA
	May 1991	252.00	ND	ND	NA	27,000	930	NA
	Aug 1991	222.00	2.00	ND	50	31,000	980	NA
	Sep 1992	111.00	ND	ND	NA	50,100	1,070	NA
	May 1994	93.60	ND	ND	NA	27,000	890	NA
	Nov 1994	122.90	ND	ND	NA	28,000	870	NA
	Jul 1995	101.90	ND	ND	NA	29,200	904	NA
	Oct 1997	119.90	ND	ND	NA	27,200	883	NA
	Jun 2001	104.00	2.00	ND	59,000	36,000	1,000	110,000
	Jun 2002	81.00	1.00	ND	46,000	21,000	720	94,000
	Aug 2004	33.00	16.50	5.30	NA	NA	NA	NA
	Jun 2007	77.75	ND	ND	36,000	16,800	871	63,900
	Sep 2008	74.67	NA	ND	31,700	16,900	813	53,800
MW-8	Sep 2008	ND	NA	ND	33,900	6,480	168	13,600
MW-8A	Sep 2008	315.24	NA	ND	41,100	471	1,830	87,800
MW-15	Sep 2008	2.63	NA	ND	26,100	21,800	3,030	5,510
MW-18	Sep 2008	0.45	NA	ND	22,900	17,100	1,670	3,760

Notes:
All data in ug/L (or ppb)
ND - Not detected
NA - Not analyzed
TVOCs - Total Volatile Organic Compounds
TSVOCs - Total Semi-Volatile Organic Compounds

TABLE 4

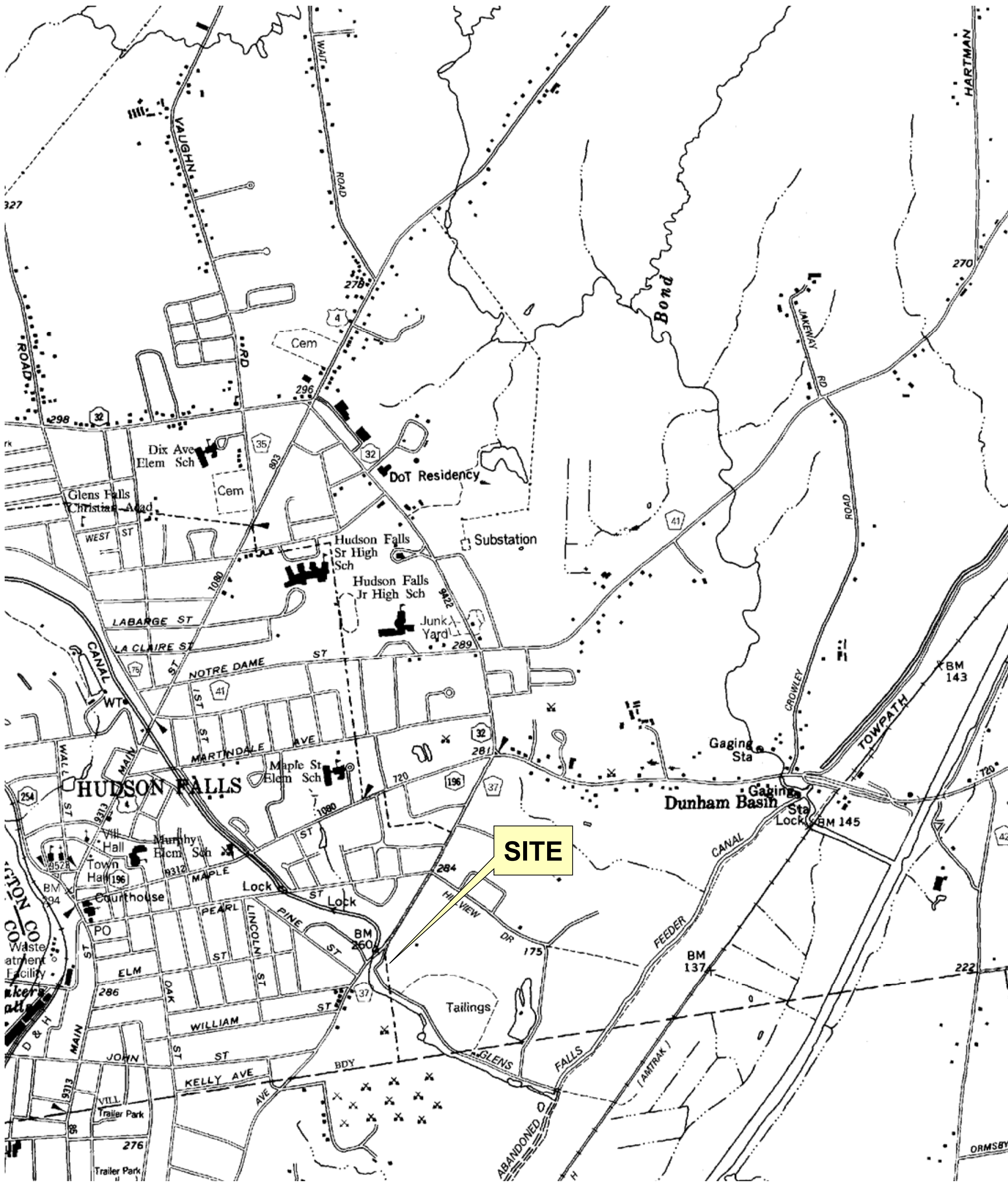
KINGSBURY LANDFILL OM (SITE 5-58-008)
INTERIM LEACHATE COLLECTION AND TREATMENT FACILITY
ANALYTICAL DATA FOR ILCTS INFLUENT/EFFLUENT SAMPLES

PARAMETER	UNITS	DISCHARGE LIMITS	INFLUENT 6/3/03	9/23/03	5/14/07	6/25/07	7/23/07	9/2/08	10/14/08	9/17/09	10/29/09	11/23/09	12/21/09	1/21/10	2/18/10
Flow	GPM	Monitor	15 – 20	7 - 10	7 - 10	3 - 9	3 - 7	4 - 7	4 - 7						
Settleable solids	mL/L	0.3	<1	<1	NA	NA	NA	NA		NA	NA	NA	NA	NA	NA
TSS	mg/L	20	68	<10	61	62	56	70	70	34	68	286	21	60	53
pH	s.u.	6.5 - 8.5	6.7	7.2	7.3	7.0	7.4	7.4	7.4	6.9	7.2	6.9	6.9	6.8	7
TOC	mg/L	-	NA	NA	29	36	35	35	35	30.6	30.2	35.4	35.1	32.7	34
COD	mg/L	-	NA	NA	94	100	100	120	120	NA	NA	NA	NA	NA	NA
BOD 5 - day	mg/L	20	19	<6	NA	8.4	<2	96	96	NA	NA	NA	NA	NA	NA
Oil & Grease	mg/L	15	<5	<5	<5	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA
METALS															
Aluminum	mg/L	-	0.955	0.444	0.076B	0.173 B	0.194 B	<0.056	<0.056	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Barium	mg/L	0.8	0.567	0.526	0.502	0.537	0.483	0.539	0.539	0.512	0.467	0.617	0.534	0.526	0.484
Calcium	mg/L	-	149	129	NA	NA	NA	NA	NA	123	126	127	124	119	118
Chromium (Total)	mg/L	0.008	0.006	<0.60	<0.0004	< 0.004	< 0.004	<0.011	<0.011	<0.005	<0.005	<0.005	<0.005	0.008	<0.005
Chromium (Hex)	mg/L	-	NA	<0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/L	0.08	0.0155B	0.017B	<0.006	< 0.006	< 0.006	0.074	0.074	0.007	0.01	<0.005	<0.005	<0.005	<0.005
Iron	mg/L	4	29.5	21.4	27.7	30.1	26.8	30.5	30.6	26	24.1	30	23.9	25.8	14.5
Magnesium	mg/L	-	85.4	77.8	NA	NA	NA	NA	NA	69.7	68.6	70.5	74	72.3	69.3
Manganese	mg/L	2	1.26	0.9	0.945	1.02	1.02	0.906	0.906	0.703	0.703	0.699	0.678	0.687	0.65
Nickel	mg/L	-	0.0115B	0.009B	NA	NA	NA	NA	NA	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Potassium	mg/L	-	130	134	NA	NA	NA	NA	NA	118	109	117	124	108	117
Sodium	mg/L	-	182	208	NA	NA	NA	NA	NA	159	130	79	164	138	138
Zinc		-	0.0465B	0.041B	NA	NA	NA	NA	NA	0.015	0.017	<0.010	<0.010	<0.010	<0.010
VOAs															
Chloroform	µg/L	-	1.2	0.56	<5	<5	<0.5	<0.5		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane		-	<0.5	<0.5	<5	<5	0.94	<0.5	2.0	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane		-	0.62	1	<5	1 J	0.64	0.85	1.2	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
cis1,2-Dichloroethene		-	2.7	3.1	<5	2 J	0.87	0.74	1.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
trans1,2-Dichloroethene			<0.5	<0.5	<5	<5	<0.5	0.21 J	0.33 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride		5	<0.5	<0.5	<5	<5	0.68	<0.5		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MTBE		-	<0.5	<0.5	<5	<5	0.3 J	<0.5	0.51	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride		-	<0.5	3	<5	3 J	1.8	<0.5	4.8	<10	<10	<10	<10	<10	<10
Benzene		5	1.7	2.5	1 J	3 J	2	2.7	3.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene		10	7.3	9.4	7	16	12	16	20	24	13	15	16	18	19
Isopropylbenzene		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethylene		10	<0.5	<0.5	<5	<5	<0.5	<0.5		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene		5	<0.5	<0.5	<5	<5	<0.5	<0.5		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Xylene (total)		-	0.57	0.55	<5	<5	<0.5	<0.5	0.22 J	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorofluromethane		-	<0.5	<5	<5	<5	0.99	<0.5	4.7	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene		-	<0.5	<0.5	<5	<5	<0.5	0.23 J		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene		-	<0.5	<0.5	<5	<5	0.45 J	0.52		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene		-	0.89	1.2	<5	<5	1	1.2		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SEMIVOAs	µg/L	-													
Acenapthene			NA	NA	<10	<10	5 J	<10	<10	NA	NA	NA	NA	NA	NA
bis(2-ethylhexyl)phthalate					<10	<10	1 J	<10	<10	NA	NA	NA	NA	NA	NA
PCBs															
Aroclor 1016	µg/L	0.3	<1.0	<1.0	8.6	7.7	<0.3	<0.33	<0.33	<0.065	<0.065	<0.32	<2.6	<2.6	<1.0
Aroclor 1221	µg/L	0.3	<1.0	<1.0	<0.3	<1.0	22	<0.33	<0.33	8.3	5.4	9.7	49	7	7.7
Aroclor 1232	µg/L	0.3	<1.0	<1.0	<0.3	<1.0	<0.3	<0.33	<0.33	<0.065	<0.065	<0.32	<2.6	<2.6	<1.0
PESTICIDES	µg/L	--	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

PARAMETER	DISCHARGE 9/26/02	10/31/02	5/3/03	6/3/03	7/21/03	9/23/03	10/3/05	5/14/07	6/25/07	7/23/07	9/2/08	10/14/08	9/17/09	10/29/09	11/23/09	12/21/09	1/20/10	2/18/10
Flow	15	15 – 20	15 – 20	15 – 20	15 – 20	7 - 10	7 - 10	7 - 10	3 - 9	3 - 7	4 - 7	4 - 7						
Settleable solids	<0.53	<1	<1	<1	<1.1	<1	<1	<1	<1	<1	<1	<1	NA	NA	NA	NA	NA	NA
TSS	<5	<1	15	71	<10	<10	<10	<10	<10	<10	<10	<10	<1.0	1	1	<1.0	2.5	5.5
pH	6.8	(R)	7.5	6.8	6.9	6.5	7.0	6.7	7.3	7.4	8.3	8.3	7.7	8	7.7	7.8	7.7	7.8
TOC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
COD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BOD 5 - day	2.08	(R)	3	11	<6	<6	<3	NA	2.2	<30	<3	<3	5	7	6	14	5	18
Oil & Grease	<5	<5	17	<5	<5	<5	5.7	<5	<5	<5	<5	<5	NA	NA	NA	NA	NA	NA
METALS																		
Aluminum	<0.062	0.258B	0.834	12.1	NA	0.060B	NA	0.3	0.518	0.046 B	0.117 B	0.117 B	NA	NA	NA	NA	NA	NA
Barium	<0.2	0.114B	0.029B	0.042B	0.093B	0.074B	0.104	0.05B	0.032B	0.154 B	204	204	0.181	0.188	0.182	0.175	0.175	0.17
Calcium	56	119	68.5	46.9	NA	79.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (Total)	<0.01	<0.003	0.001B	0.001B	0.73B	<0.6	<0.0004	<0.0004	< 0.0004	< 0.004	<0.011	<0.011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chromium (Hex)	NA	NA	NA	NA	NA	<0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	<0.042	0.029B	0.022B	0.009B	0.018B	0.011B	NA	0.0091B	0.001B	< 0.006	0.0317	0.0317	0.032	0.046	0.076	<0.005	0.018	<0.005
Iron	<0.053	<0.035	0.056B	0.412	0.175B	175B	0.233	0.106B	0.455	0.561	0.147	0.147	<0.050	<0.050	<0.050	<0.050	<0.050	0.067
Magnesium	96	88.4	64.3	79	NA	108E	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	0.41	0.978	0.315	0.193	485	464E	0.487	0.369	0.295	0.487	0.392	0.392	0.162	0.154	0.141	0.134	0.121	0.131
Nickel	<0.04	0.009B	0.007B	0.011B	NA	0.098B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	120	136E	91.2	127	NA	138	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	180	185	173	248	NA	217	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	0.14	0.034B	0.038	0.014B	NA	0.007B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
VOAs																		
Chloroform	0.001 J	(R)	<0.5	1.2	3.2	0.57	<5	<5	<5	0.28 J	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroethane	<0.01	(R)	<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<10	<10	<10	<10	<10	<10
1,1-Dichloroethane	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
cis1,2-Dichloroethene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
trans1,2-Dichloroethene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride	<0.01		4.3	<0.5	<0.5	<0.5	2	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MTBE	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<10	<10	<10	<10	<10	<10
Benzene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenzene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	0.2 J	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Isopropylbenzene													<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroethylene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	**7.6 S**	<5.0	<5.0	<5.0
Xylene (total)	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dichlorofluromethane	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3-Dichlorobenzene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,4-Dichlorobenzene	<0.01		<0.5	<0.5	<0.5	<0.5	<5	<5	<5	<0.5	<0.5	<0.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
SEMIVOAs																		
Acenapthene	NA	NA	NA	NA	NA	NA	NA	<10	<10	<10	<10	<10	NA	NA	NA	NA	NA	NA
bis(2-ethylhexyl)phthalate								<10	<10	1 J	<10	<10	NA	NA	NA	NA	NA	NA
PCBs																		
Aroclor 1016	<0.053	<1.0	<1.0	<1.0		<1.0	<1.0	<0.3	0.64	<0.3	<0.33	<0.33	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
Aroclor 1221	<0.053	<1.0	<1.0	<1.0	NA	<1.0	<1.0	<0.3	<0.20	<0.3	<0.33	<0.33	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
Aroclor 1232	<0.053	<1.0	<1.0	<1.0		<1.0	<1.0	<0.3	<0.20	<0.3	<0.33	<0.33	<0.065	<0.065	<0.065	<0.065	<0.065	<0.065
PESTICIDES	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NOTES:
For metals: B - trace below method detection limit; E - estimated due to interferences;
For organics: B - indicates blank contamination; E – value exceeded calibration range; J – estimated value below method detection limit
ND – No compound detected in parameter group; NA - not analyzed; R – data rejected due to holding time/shipping temperature

FIGURES



N

0 2,000

Approx. Scale in Feet

EarthTech

A tyco International Ltd. Company

FIGURE 1
SITE LOCATION MAP

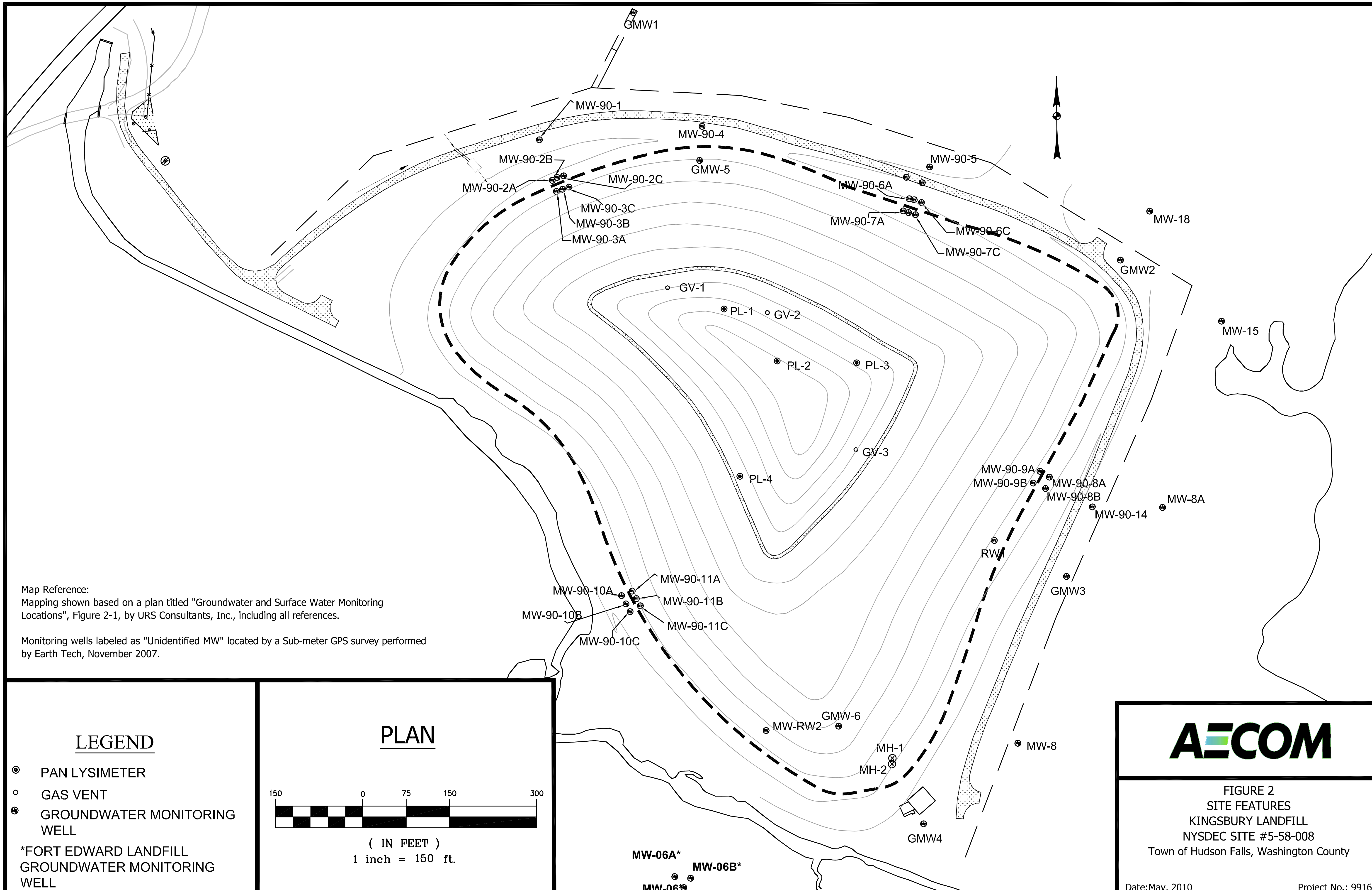
KINGSBURY LANDFILL
NYSDEC #5-58-008

Village of Hudson Falls   Washington County

Project No. 99164	**Figure No. 1**

MAP REFERENCE
STUDY AREA CAN BE FOUND ON NYSDOT QUADRANGLE HUDSON FALLS, NY.

L:\WORK\99164\CADD\GIS\99164_SiteLoc.mxd



Map Reference:
Mapping shown based on a plan titled "Groundwater and Surface Water Monitoring Locations", Figure 2-1, by URS Consultants, Inc., including all references.

Monitoring wells labeled as "Unidentified MW" located by a Sub-meter GPS survey performed by Earth Tech, November 2007.

LEGEND

- PAN LYSIMETER
- GAS VENT
- GROUNDWATER MONITORING WELL

*FORT EDWARD LANDFILL GROUNDWATER MONITORING WELL

PLAN

150 0 75 150 300

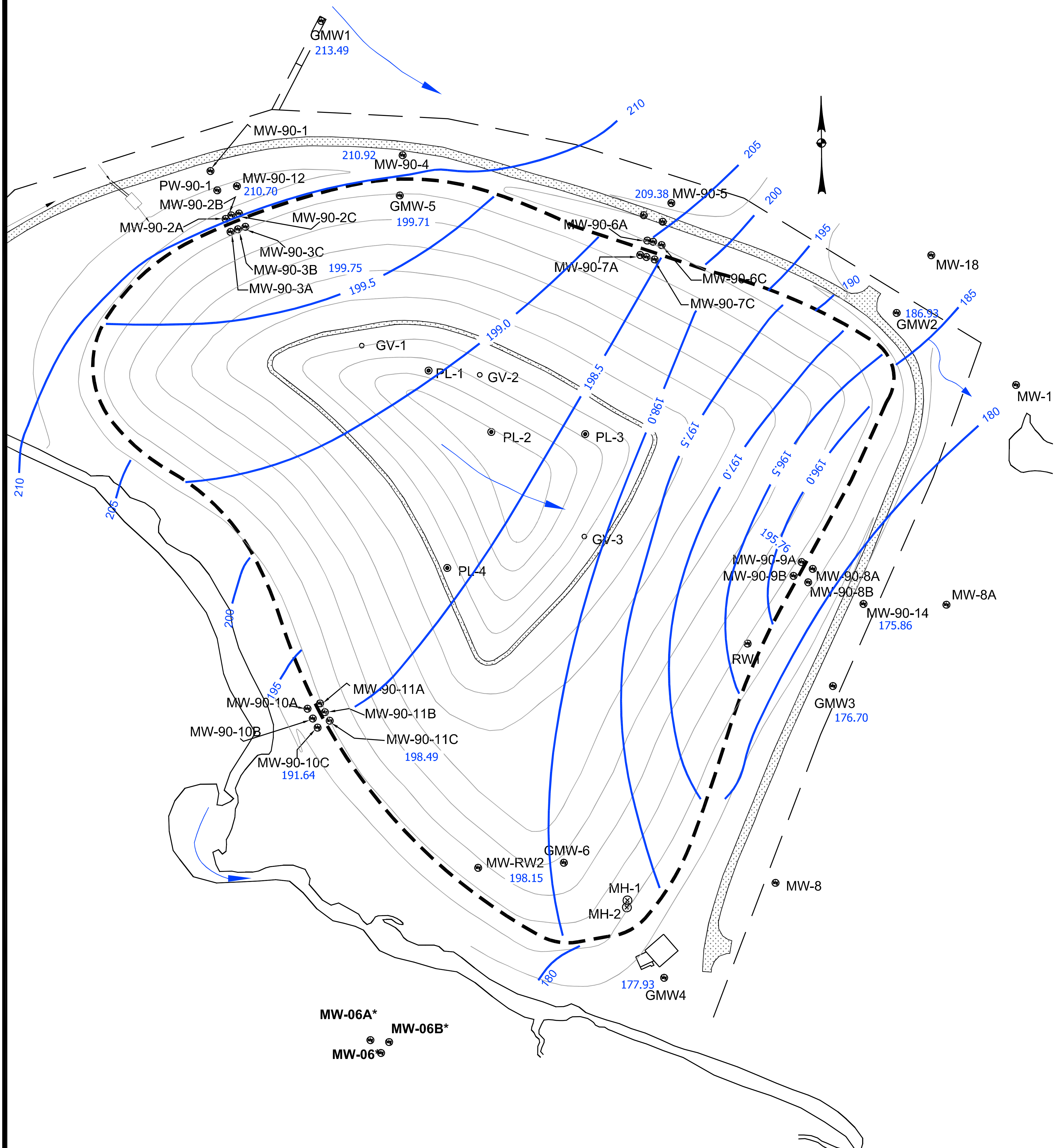
(IN FEET)
1 inch = 150 ft.

AECOM

FIGURE 2
SITE FEATURES
KINGSBURY LANDFILL
NYSDEC SITE #5-58-008
Town of Hudson Falls, Washington County

Date:May, 2010

Project No.: 99164



Map Reference:
Mapping shown based on a plan titled "Groundwater and Surface Water Monitoring Locations", Figure 2-1, by URS Consultants, Inc., including all references.

LEGEND

- 195 GROUNDWATER ELEVATION
- PAN LYSIMETER
- GAS VENT
- GROUNDWATER MONITORING WELL

*FORT EDWARD LANDFILL GROUNDWATER MONITORING WELL

PLAN

200 0 100 200 400

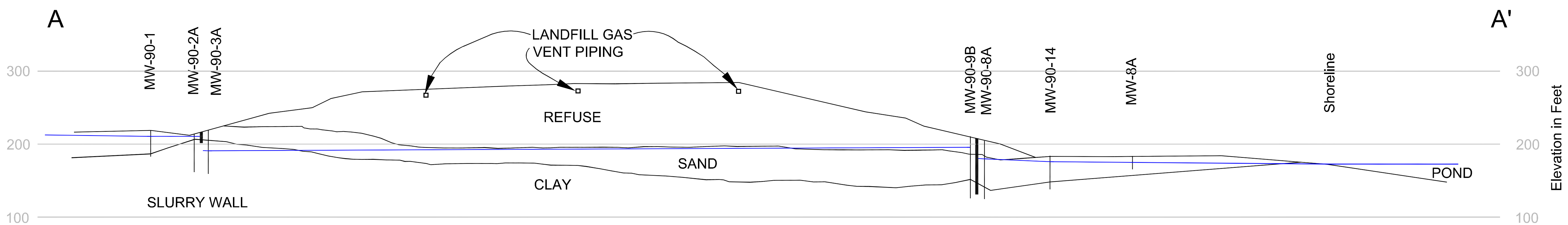
(IN FEET)
1 inch = 200 ft.

FIGURE 4
2008 GROUNDWATER ELEVATIONS

KINGSBURY LANDFILL
NYSDEC SITE #5-58-001
Town of Kingsbury, Washington County

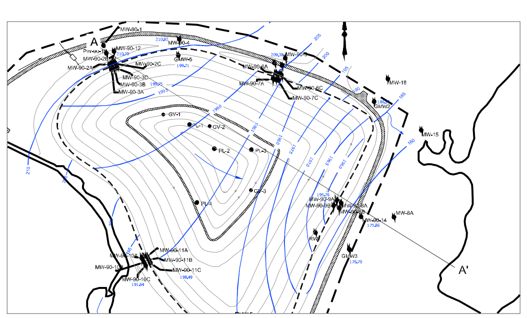
Date: November, 2009

Project No.: 99164



LEGEND

GROUNDWATER ELEVATION



PLAN

150 0 75 150 300

(IN FEET)
1 inch = 150 ft.

Map Reference:
Mapping shown based on a plan titled "Groundwater and Surface Water Monitoring Locations", Figure 2-1, by URS Consultants, Inc., including all references.

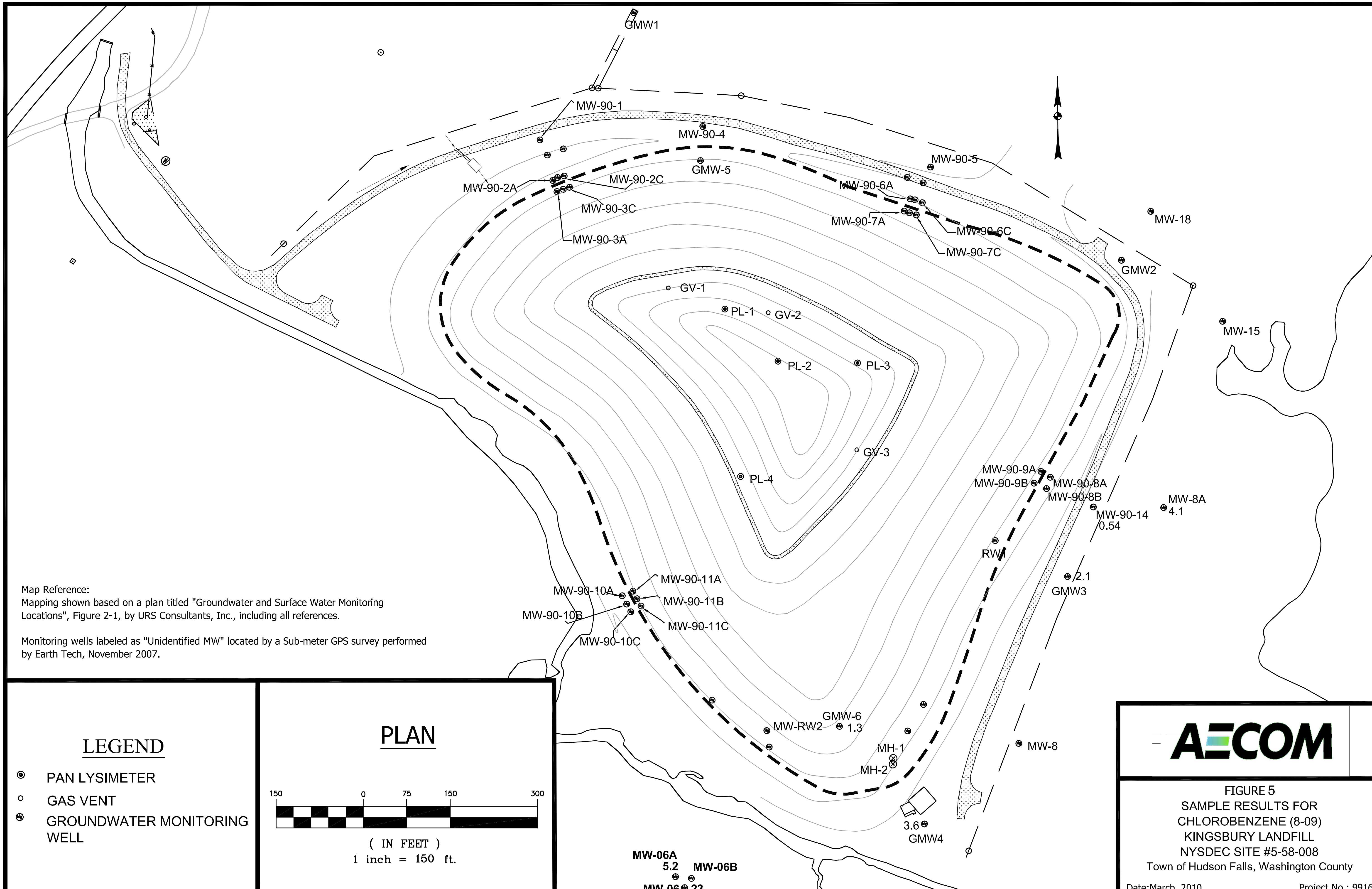
Monitoring wells labeled as "Unidentified MW" located by a Sub-meter GPS survey performed by Earth Tech, November 2007.

AECOM

FIGURE 3
CROSS SECTION
KINGSBURY LANDFILL
NYSDEC SITE #5-58-008
Town of Hudson Falls, Washington County

Date:May, 2010

Project No.: 99164



Map Reference:
Mapping shown based on a plan titled "Groundwater and Surface Water Monitoring Locations", Figure 2-1, by URS Consultants, Inc., including all references.

Monitoring wells labeled as "Unidentified MW" located by a Sub-meter GPS survey performed by Earth Tech, November 2007.

LEGEND

- PAN LYSIMETER
- GAS VENT
- GROUNDWATER MONITORING WELL

PLAN

150 0 75 150 300

(IN FEET)
1 inch = 150 ft.

AECOM

FIGURE 5
SAMPLE RESULTS FOR CHLOROBENZENE (8-09)
KINGSBURY LANDFILL
NYSDEC SITE #5-58-008
Town of Hudson Falls, Washington County

Date:March, 2010

Project No.: 99164

APPENDIX A

IC/EC Certification Forms

Enclosure 1
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form

Site Details **Box 1**

Site No. **558008**

Site Name Kingsbury Landfill

Site Address: Burgoyne Avenue Zip Code: 12839

City/Town: Kingsbury

County: Washington

Allowable Use(s) (if applicable, does not address local zoning):

Site Acreage: 9.8

Box 2

Verification of Site Details

	YES	NO
1. Are the Site Details above, correct?	☑	☐
If NO, are changes handwritten above or included on a separate sheet?	☐	
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment since the initial/last certification?	☐	☑
If YES, is documentation or evidence that documentation has been previously submitted included with this certification?	☐	
3. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property since the initial/last certification?	☐	☑
If YES, is documentation (or evidence that documentation has been previously submitted) included with this certification?	☐	
4. If use of the site is restricted, is the current use of the site consistent with those restrictions?	☑	☐
If NO, is an explanation included with this certification?	☐	
5. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid?	☐	☐
If YES, is the new information or evidence that new information has been previously submitted included with this Certification?	☐	
6. For non-significant-threat Brownfield Cleanup Program Sites subject to ECL 27-1415.7(c), are the assumptions in the Qualitative Exposure Assessment still valid (must be certified every five years)?	☐	☐
If NO, are changes in the assessment included with this certification?	☐	

SITE NO. 558008 **Box 3**

Description of Institutional Controls

Parcel	Institutional Control
S_B_L Image:	
	Building Use Restriction
	Ground Water Use Restriction
	Landuse Restriction
	Soil Management Plan
	Surface Water Use Restriction

Box 4

Description of Engineering Controls

Parcel	Engineering Control
S_B_L Image:	
	Cover System
	Fencing/Access Control
	Groundwater Containment
	Leachate Collection
	Point-of-Entry Water Treatment
	Pump & Treat
	Subsurface Barriers

Attach documentation if IC/ECs cannot be certified or why IC/ECs are no longer applicable. (See instructions)

Control Description for Site No. 558008

Parcel:

Box 5

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

   a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

   b) to the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and the information presented is accurate and compete.

YES	NO
☑	☐

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

   (a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

   (b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

   (c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

   (d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

   (e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

Scott Underhill   40 British American Blvd., Latham, NY 12110

YES	NO
☑	☐

New York State Department of Environmental Conservation

3. If this site has an Operation and Maintenance (O&M) Plan (or equivalent as required in the Decision Document);

I certify by checking "YES" below that the O&M Plan Requirements (or equivalent as required in the Decision Document) are being met.

YES	NO
☑	☐

4. If this site has a Monitoring Plan (or equivalent as required in the remedy selection document);

I certify by checking "YES" below that the requirements of the Monitoring Plan (or equivalent as required in the Decision Document) is being met.

YES	NO
☑	☐

IC CERTIFICATIONS
SITE NO. 314008

Box 6

SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 2 and/or 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ________________________________ at ____,
print name print business address

am certifying as ____(Owner or Remedial Party)

for the Site named in the Site Details Section of this form.

____ __________________
Signature of Owner or Remedial Party Rendering Certification Date

IC/EC CERTIFICATIONS

Box 7

QUALIFIED ENVIRONMENTAL PROFESSIONAL (QEP) SIGNATURE

I certify that all information in Boxes 4 and 5 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I ________________________________ at ____,
print name print business address

am certifying as a Qualified Environmental Professional for the _______________________________

(Owner or Remedial Party) for the Site named in the Site Details Section of this form.

____ ________________ __________
Signature of Qualified Environmental Professional, for the Owner or Remedial Party, Rendering Certification | Stamp (if Required) | Date