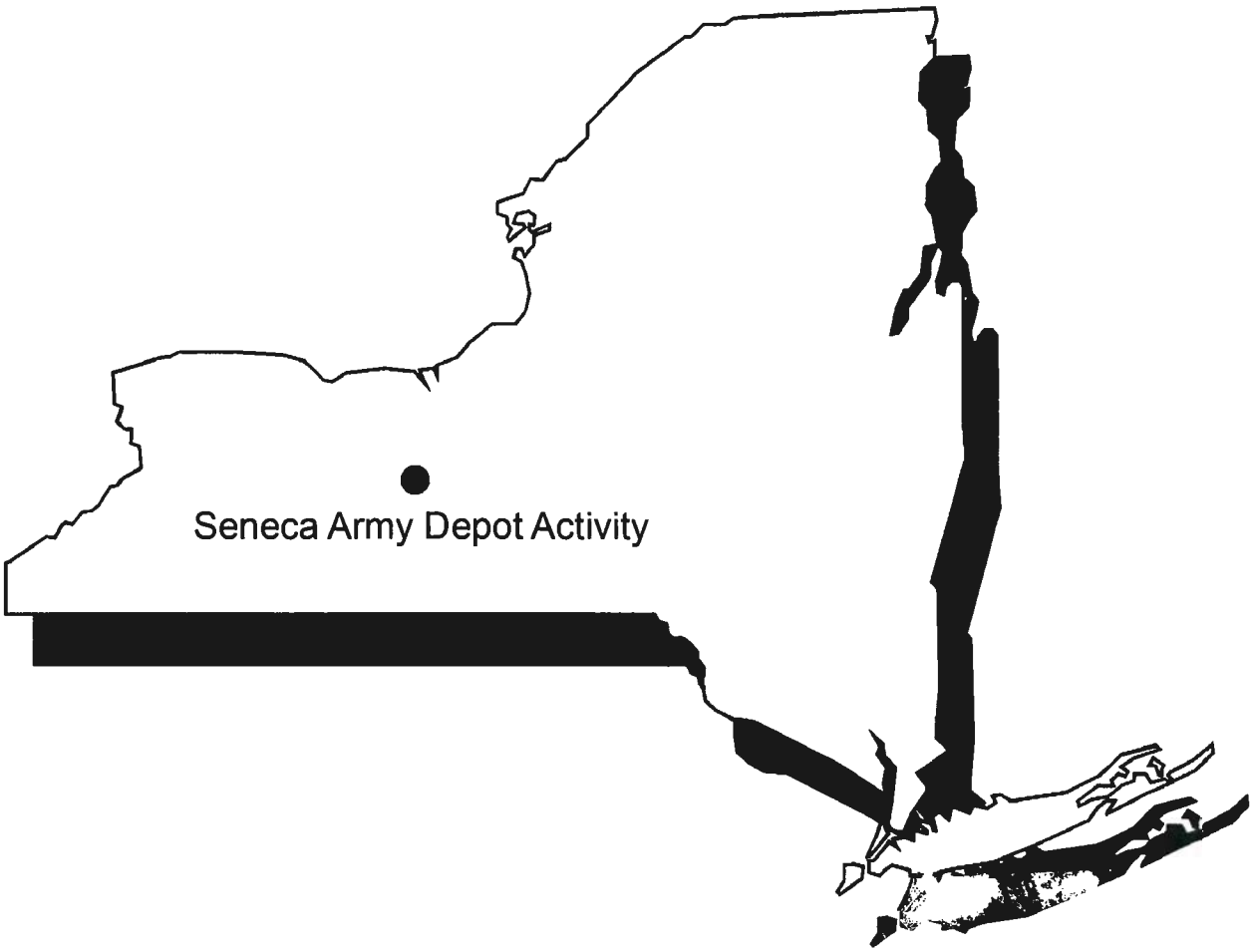
US Army, Engineering & Support Center
Huntsville, AL

Seneca Army Depot Activity
Romulus, NY
00612



DRAFT
ANNUAL REPORT AND YEAR 5 REVIEW
ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY

Contract No. W912DY-08-D-0003
Task Order No. 0012
EPA Site ID# NY0213820830
NY Site ID# 8-50-006

PARSONS
May 2012

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DRAFT

ANNUAL REPORT AND YEAR 5 REVIEW

FOR THE

ASH LANDFILL OPERABLE UNIT
SENECA ARMY DEPOT ACTIVITY, ROMULUS, NEW YORK

Prepared for:

U.S. ARMY CORPS OF ENGINEERS, ENGINEERING AND SUPPORT CENTER
HUNTSVILLE, ALABAMA

and

SENECA ARMY DEPOT ACTIVITY
ROMULUS, NEW YORK

Prepared by:

PARSONS
100 High Street
Boston, MA 02110

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1.0 INTRODUCTION

This Annual Report is for the Ash Landfill Operable Unit (OU), located at the Seneca Army Depot Activity (SEDA or the Depot) in Romulus, New York (**Figure 1**). This report provides a review of the fifth year of long-term groundwater monitoring of the full-scale biowall system installed in 2006. This report also provides recommendations for future long-term monitoring at the site. This report is based on an annual review of the effectiveness of the remedy implemented in 2006, and includes the following:

- A comparison of the groundwater data to the long-term groundwater monitoring (LTM) objectives, listed below in **Section 1.1**;
- An evaluation of the need to recharge (i.e., add substrate) the biowalls, as outlined in the Remedial Design Report (RDR) (Parsons, 2006c) in **Section 3.4**; and
- An assessment of the remedy's compliance with the United States Environmental Protection Agency's (USEPA's) "Guidance for Evaluation of Federal Agency Demonstrations (Section 12(h)(s))."

A remedial action (RA) was completed in October and November 2006 in accordance with the Record of Decision (ROD) for the Ash Landfill OU (Parsons, 2004), the Remedial Design Work Plan (Parsons, 2006b), and the RDR (Parsons, 2006c), The RA involved the following:

- Installation of three dual biowall systems, A1/A2, B1/B2, and C1/C2, to address volatile organic compounds (VOCs) in groundwater that exceed New York State Department of Environmental Conservation's (NYSDEC's) Class GA groundwater standards;
- Construction and establishment of a 12-inch vegetative cover over the Ash Landfill and the Non-Combustible Fill Landfill (NCFL) to prevent ecological receptors from coming into direct contact with the underlying soils that are contaminated with metals and polycyclic aromatic hydrocarbons (PAHs);
- Excavation and disposal of Debris Piles A, B, and C; and
- Re-grading of the Incinerator Cooling Water Pond to promote positive drainage.

As part of the RA at the Ash Landfill OU, LTM is being performed as part of the post-closure operations. Groundwater monitoring is required as part of the remedial design, which was formulated to comply with the ROD. The first of four rounds of groundwater sampling were performed in the first year of LTM and were completed in January 2007, March, 2007, June 2007, and November 2007.

The analytical and geochemical results were presented in four letter reports. The results of the Year 1 LTM were reported and evaluated in the "Annual Report and One-Year Review for the Ash Landfill" (Parsons, 2008a). As part of the Year 1 report, the Army recommended that the frequency of LTM events

at the Ash Landfill OU be reduced from quarterly to semi-annually; this recommendation was approved by the USEPA and NYSDEC.

Year 2 semi-annual monitoring, referred to as Rounds 5 and 6, were completed in June and December 2008, and the results were presented in separate semiannual letter reports for each sampling event. The results of Year 2 of the LTM program were presented in the "Annual Report and Year Two Review" (Parsons, 2009). Year 3 semi-annual monitoring, referred to as Rounds 7 and 8, were completed in June and December 2009 and the results are presented in separate letter reports for each sampling event. The results of Year 3 of the LTM program were presented in the "Annual Report and Year Three Review" (Parsons, 2010). Year 4 semi-annual monitoring, referred to as Rounds 9 and 10, were completed in June and December 2010 and the results were presented in separate letter reports. Year 5 semi-annual monitoring, referred to as rounds 11 and 12, were completed in July and December 2011 and December 15, 2011, and the results were presented in separate letter reports for each sampling event.

This Annual Report reviews the results of the fifth year of the LTM program as part of the ongoing evaluation of the remedy and provides conclusions and recommendations about the effectiveness of the remedial action, including the groundwater remedy and the vegetative landfill covers.

1.1 Long-Term Groundwater Monitoring Objectives

Three types of long-term groundwater monitoring are being performed: 1) plume performance monitoring, 2) biowall process monitoring, and 3) off-site compliance monitoring. On-site performance monitoring is being conducted to measure groundwater contaminant concentrations and to evaluate the effectiveness of the biowall remedy for the Ash Landfill OU. The objectives of performance and compliance monitoring are as follows:

- Confirm that there are no exceedances of groundwater standards for contaminants of concern (COCs) at the off-site compliance monitoring well MW-56;
- Document the effectiveness of the biowalls to remediate and attenuate the chlorinated ethene plume; and
- Confirm that groundwater concentrations throughout the plume are decreasing to eventually meet NYSDEC Class GA groundwater standards.

Biowall process monitoring is being conducted at two locations (shown in **Figure 2**) to determine if, and when, any biowall maintenance activities should be performed. The first location is within Biowalls B1/B2 (MWT-27 and MWT-28) in the segment that runs along the pilot-scale biowalls that were installed in July 2005. The second location is within Biowall C2 (MWT-23), the furthest downgradient biowall. The objectives of biowall process monitoring for operations and maintenance (O&M) activities are as follows:

- Monitor the long-term performance and sustainability of the biowalls;

- Monitor substrate depletion and geochemical conditions under which the effectiveness of the biowalls may decline; and

- Determine if, and when, the biowalls need maintenance (i.e., need to be recharge with additional organic substrate).

2.0 SITE BACKGROUND

2.1 Site Description

SEDA is a 10,587-acre former military facility located in Seneca County near Romulus, New York, that was owned by the United States Government and operated by the Department of the Army from 1941 until 2000. In 2000, the Army assumed a caretaker role at the SEDA, and since this time more than 8,500 acres of the property have been transferred to other parties. SEDA is located between Seneca Lake and Cayuga Lake and is bordered by New York State Highway 96 to the east, New York State Highway 96A to the west, and sparsely populated farmland to the north and south.

The location of the Ash Landfill OU, also referred to as the Ash Landfill, is composed of five historic solid waste management units (SWMUs). As shown in **Figure 3**, the five SWMUs that comprise the Ash Landfill OU are the Incinerator Cooling Water Pond (SEAD-3), the Ash Landfill (SEAD-6), the NCFL (SEAD-8), the former Debris Piles (SEAD-14), and the former Abandoned Solid Waste Incinerator Building (SEAD-15).

Prior to the Army's purchase of land for construction of the SEDA, the area of the Ash Landfill OU was used for farming. From 1941 (the date SEDA was constructed) to 1974, uncontaminated trash was burned in a series of burn pits located near the former abandoned incinerator building (Building 2207). According to the U.S. Army Environmental Hygiene Agency (USAEHA) Interim Final Report, Groundwater Contamination Survey No. 38-26-0868-88 (July 1987), the ash from the refuse burning pits was buried in the Ash Landfill (SEAD-6) from date of inception until the late 1950s or early 1960s.

The incinerator was built in 1974. Between 1974 and 1979, materials intended for disposal were transported to the incinerator. Each week the Depot generated approximately 18 tons of refuse, the majority of which was incinerated. The source for the refuse was domestic waste from Depot activities and family housing. Large items that could not be burned were disposed at the NCFL (SEAD-8). The NCFL encompasses approximately three acres located southeast of the former incinerator building, immediately south of a SEDA railroad line. The NCFL was used as a disposal site for non-combustible materials, including construction debris, from 1969 until 1977.

Ash and other residue from the former incinerator were temporarily disposed in an unlined cooling pond immediately north of the incinerator building. The cooling pond consisted of an unlined depression approximately 50 feet in diameter and approximately 6 to 8 feet deep. When the pond filled, the fly ash and residues were removed, transported, and buried in the adjacent ash landfill east of the cooling pond. The refuse was dumped in piles and occasionally spread and compacted. No daily or final cover was applied during operation. According to an undated aerial photograph of the incinerator during operation,

the active area of the Ash Landfill extended at least 500 feet north of the incinerator building, near a bend in a dirt road. A fire destroyed the incinerator on May 8, 1979, and the landfill was subsequently closed. Post-closure the landfill was apparently covered with native soil of various thicknesses, but was not closed with an engineered cover or cap. Other areas at the site were used as a grease pit and for burning debris.

2.2 Site Geology/Hydrogeology

The site is underlain by a broad north-to-south trending series of rock terraces covered by a mantle of glacial till. As part of the Appalachian Plateau, the region is underlain by a tectonically undisturbed sequence of Paleozoic rocks consisting of shales, sandstones, conglomerates, limestones and dolostones. At the Ash Landfill site, these rocks (the Ludlowville Formation) are characterized by gray, calcareous shales and mudstones and thin limestones with numerous zones of abundant invertebrate fossils. Locally, the shale is soft, gray, and fissile. The shale, which has a thin weathered zone at the top, is overlain by 2 to 3 feet of Pleistocene-age[1] till deposits. The till matrix varies locally, but generally consists of unsorted silt, clay, sand, and gravel.

The thickness of the till at the Ash Landfill OU generally ranges from 4 to 15 feet. At the location of the biowalls, the thickness of the till and weathered shale is approximately 10 to 15 feet. Groundwater is present in both the shallow till/weathered shale layer and in the deeper competent shale layer. In both water-bearing units, the predominant direction of groundwater flow is to the west, toward Seneca Lake. Based on the historical data, the wells at the Ash Landfill site exhibit rhythmic and seasonal fluctuations in the water table and the saturated thickness. Historic data at the Ash Landfill OU indicate that the saturated interval is thin (generally between 1 and 3 feet thick) in the month of September and is thickest (generally between 6 and 8.5 feet thick) between December and March.

The average linear velocity of the groundwater in the till/weathered shale layer was calculated during the Remedial Investigation (RI) in 1994 using the following parameters: 1) average hydraulic conductivity of 4.5×10^{-4} centimeters per second (cm/sec) (1.28 feet per day [ft/day]), 2) estimated effective porosity of 15% to 20%, and 3) groundwater gradient of 1.95×10^{-2} feet per foot (ft/ft) (Parsons Engineering Science, Inc., 1994). The average linear velocity was calculated as 0.166 ft/day or 60.7 feet per year (ft/yr) at 15% effective porosity and 0.125 ft/day or 45.5 ft/yr at 20% effective porosity. The actual velocity of on-site groundwater may be locally influenced by zones of higher-than-average permeability; these zones are possibly associated with variations in the porosity of the till/weathered shale.

2.3 Soil and Groundwater Impacts

The nature and extent of the COCs at the Ash Landfill OU were evaluated through a comprehensive RI program. It was determined that surface water and sediment were not media of concern and did not

[1] The Pleistocene Age, also known as the Late Wisconsin Age, occurred 20,000 years before present.

require remediation. A groundwater contaminant plume that emanated from the northern end of the Ash Landfill was delineated during the RI. The primary COCs in groundwater at the Ash Landfill are VOCs; the primary COCs in soil at the Ash Landfill are chlorinated and aromatic compounds, semivolatile organic compounds (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and, to a lesser degree, metals. Release of the COCs is believed to have occurred during the former activities at the Ash Landfill OU (described above).

Soil

VOCs, specifically trichloroethene (TCE), were detected in the soil in the "Bend in the Road" area. Located northwest of the Ash Landfill, this area is believed to be the source of the groundwater plume. Between 1994 and 1995, the Army conducted a Non-Time Critical Removal Action (NTCRA), also known as an Interim Removal Measure (IRM), to address VOC and PAH contamination in soil near the "Bend in the Road." The excavation limits of the NTCRA are shown on **Figure 3**. The NTCRA successfully reduced the risk associated with potential exposure to contaminated soil, and prevented continued leaching of VOCs to groundwater. Since the NTCRA, concentrations of VOCs in groundwater near the original source area have decreased by two orders of magnitude. Further remediation for VOCs in the soil at the "Bend in the Road" was not required.

The other COCs detected in the soil were PAHs and metals. PAHs were detected at concentrations above NYSDEC's Technical and Administrative Guidance Memorandum (TAGM #4046) values in the NCFL and the Debris Piles present around the former Ash Landfill. In general, the highest PAH concentrations were detected in the NCFL and small Debris Pile surface soils. The metals that were detected at elevated concentrations (significantly above TAGMs) in soils were copper, lead, mercury, and zinc. These elevated concentrations were found in the Ash Landfill, the NCFL, and the Debris Piles, with the highest concentrations of metals detected at the surface of the Debris Piles. These piles were small, localized, surface features that were visibly discernable and did not extend into the subsurface. The former debris piles were excavated and disposed offsite during the RA in 2006.

Groundwater

The primary potential impact to human health and the environment is a groundwater contaminant plume containing dissolved chlorinated solvents, primarily TCE, isomers of dichloroethene (DCE), and vinyl chloride (VC). The plume originates in the "Bend in the Road" area near the northwestern edge of the Ash Landfill and is approximately 1,100 feet long by 625 feet wide. The nearest exposure points for groundwater are three farmhouse wells located approximately 1,250 feet from the leading edge of the plume near the farmhouse. The location of the farmhouse relative to the plume at the Ash Landfill is shown on **Figure 4**. Two of the farmhouse wells draw water from the till/weathered shale aquifer and the remaining well draws water from the bedrock aquifer. As discussed in Section 4.4 of the RI (Parsons, 1994), plume profiles were constructed for geologic cross sections at the Ash Landfill; based on these profiles it was determined that the plume is vertically restricted to the upper till/weathered shale aquifer

and is not present in the deeper competent shale aquifer. As noted above, the source area of the plume was removed by the NTCRA.

2.4 Summary of the Remedial Action

2.4.1 Biowalls

Three biowall pairs were installed to address groundwater contamination on-site, as documented in the Construction Completion Report (Parsons, 2007). The biowalls were constructed by excavating a linear trench to competent bedrock then backfilling the trench to the ground surface with a mixture of mulch and sand.

Biowalls A1/A2, B1/B2, and C1/C2 (as shown in **Figure 2**) were constructed perpendicular to the chlorinated solvent plume at the locations prescribed in the RDR. The entire length of Biowalls A1/A2 and the northern portion of B1/B2 were combined into a single double-width trench (minimum of 6 feet in width) due to unstable soil conditions that caused trench widening. Approximately 2,840 linear feet (lf) of biowalls were constructed in the areas downgradient of the Ash Landfill at depths ranging from 7 feet below ground surface (bgs) to 18.5 feet bgs.

A 12-inch soil cover was placed over the entire length of the biowalls to impede surface water from preferentially flowing into the biowall trenches. Trench spoils were used as the cover material and were compacted with a backhoe. A site visit in December 20101 confirmed that the mulch backfill in the trenches has settled to ground surface.

2.4.2 Incinerator Cooling Water Pond

As specified in the RDR, the Incinerator Cooling Water Pond (ICWP) was re-graded to meet the surrounding grade to prevent the accumulation of water in this inactive pond. Prior to re-grading, the vegetation on the berms surrounding the ICWP was removed with an excavator. The soil berm was then regraded with a dozer to match the surrounding grade. The ICWP was seeded with a standard meadow mix to promote vegetation and to prevent erosion.

2.4.3 Ash Landfill and NCFL Vegetative Cover

A soil cover comprised of mulch, biowall trench spoils that met the site cleanup criteria, and off-site topsoil was placed over the 2.2 acres of the Ash Landfill. The Ash Landfill was covered with 4,380 cubic yards (cy) of fill to achieve a minimum cover thickness of 12 inches. Biowall trench spoils that met the site cleanup criteria and off-site topsoil were placed over the 3.4 acre NCFL. The NCFL was covered with 6,015 cy of fill to achieve a minimum cover thickness of 12 inches. The purpose of the covers is to prevent terrestrial wildlife from directly contacting or incidentally ingesting metal-impacted soils.

2.4.4 Debris Pile Removal

During the RA, approximately 200 cy of debris was removed from Debris Piles B and C. Approximately 1,000 cy of debris was removed from within and beyond the staked limits of Debris Pile A. The total volume of debris removed was approximately 1,200 cy (1,548 tons).

2.5 Description of Technology Used in Biowalls

Reductive dechlorination is the most important process for natural biodegradation of highly chlorinated solvents (USEPA, 1998) (see **Figure 5**). Complete dechlorination of TCE and other chlorinated solvents is the goal of anaerobic biodegradation via mulch biowall technology.

Biodegradation causes measurable changes in groundwater geochemistry that can be used to evaluate the effectiveness of substrate addition in stimulating biodegradation. For anaerobic reductive dechlorination to be an effective process, generally groundwater must be sulfate-reducing or methanogenic. Thus, groundwater in which anaerobic reductive dechlorination is occurring should have the following geochemical signature:

- Depleted concentrations of dissolved oxygen (DO), nitrate, and sulfate;
- Elevated concentrations of manganese, ferrous iron, methane, carbon dioxide, chloride, and alkalinity; and
- Reduced oxidation reduction potential (ORP).

Treatment of chlorinated ethenes in groundwater using a biowall relies on the flow of groundwater under a natural hydraulic gradient through the biowall to promote contact with slowly-soluble organic matter. As the groundwater flows through the organic matter in the biowall, an anaerobic treatment zone is established in the biowall. The treatment zone may also be established downgradient of the biowall as soluble organic matter migrates with groundwater and stimulates microbial processes.

Solid-phase organic substrates used to stimulate anaerobic biodegradation of chlorinated ethenes include plant mulch and compost. To enhance microbial activity, the mulch may be composted prior to emplacement to more readily degraded material, or mulch may be mixed with an outside source of compost. Mulch is primarily composed of cellulose and lignin, and contains "green" plant material that provides nitrogen and nutrients for microbial growth. These substrates are mixed with coarse sand and placed in a trench or excavation in a permeable reactive biowall configuration. Biodegradable vegetable oil may be added to the mulch mixture to increase the availability of soluble organic carbon.

Degradation of the organic substrate by microbial processes in the subsurface provides a number of breakdown products, including metabolic acids (e.g., butyric and acetic acids). The breakdown products and acids produced by degradation of mulch in a saturated subsurface environment provide secondary fermentable substrates for the generation of molecular hydrogen, which is the primary electron donor

utilized in anaerobic reductive dechlorination of chlorinated ethenes. Thus, a mulch biowall has the potential to stimulate reductive dechlorination of chlorinated ethenes for many years. If necessary, mulch biowalls can be periodically recharged with liquid substrates (e.g., emulsified vegetable oils) to extend the life of the biowall. Vegetable oil is a substrate that is readily available to microorganisms as a carbon source that helps establish and continually develop the microbial population. Used in combination with mulch, vegetable oil has the potential to enhance and extend the duration of organic carbon release.

3.0 LONG-TERM MONITORING DATA ANALYSIS AND GROUNDWATER REMEDY EVALUATION

3.1 Sample Collection

Four rounds of sampling were conducted during the first year of LTM, as follows:

- The first quarter, referred to as 1Q2007, was completed between January 3, 2007 and January 4, 2007;
- The second quarter, referred to as 2Q2007, was completed between March 15, 2007 and March 17, 2007;
- The third quarter, referred to as 3Q2007, was completed between June 5, 2007 and June 7, 2007; and
- The fourth quarter, referred to as 4Q2007, was completed between November 13, 2007 and November 15, 2007.

Two rounds of sampling were conducted during the second year of LTM, as follows:

- Round five, referred to as 5R2008, was completed between June 24, 2008 and June 26, 2008; and
- Round six, referred to as 6R2008, was completed between December 11, 2008 and December 15, 2008.

Two rounds of sampling were conducted during the third year of LTM, as follows:

- Round seven, referred to as 7R2009, was completed between June 1, 2009 and June 4, 2009; and
- Round eight, referred to as 8R2009, was completed between December 14, 2009 and December 18, 2009.

Two rounds of sampling were conducted during the fourth year of LTM, as follows:

- Round nine, referred to as 9R2010, was completed between June 28, 2010 and July 2, 2010; and

- Round ten, referred to as 10R2010, was completed between December 14, 2010 and December 19, 2010.

Two rounds of sampling were conducted during the fifth year of LTM, as follows:

- Round eleven, referred to as 11R2011, was completed between July 18, 2011 through July 22, 2011; and

- Round twelve, referred to as 12R2011, was completed between December 12, 2011 and December 15, 2011.

The first year of sampling was quarterly, and at that time, the sampling rounds were identified as xQyyyy, where "x" is the round number, and "yyyy" is the 4 digit year. After the first year, the sample frequency was modified to semiannual. An "R" was used to replace the "Q" to denote the round. The round number has been used sequentially since the first quarterly round.

Groundwater samples were collected using low flow sampling techniques during each of the 2011 sampling rounds. Bladder pumps were used to purge the wells and collect the samples during these rounds. Sampling procedures, sample handling and custody, holding times, and collection of field parameters were conducted in accordance with the "Final Sampling and Analysis Plan for Seneca Army Depot Activity (SAP)" (Parsons, 2006a). Field forms for 11R2011 and 12R2011 are included on a CD in **Appendix A**.

Fourteen monitoring wells were sampled and classified into three groups (listed in **Table 1**): eleven on-site plume performance monitoring wells, one off-site compliance monitoring well, and five biowall process monitoring wells. The off-site performance monitoring well, MW-56, is monitored on a semi-annual basis, and was monitored in January 2007, June 2007, June 2008, December 2008, June 2009, December 2009, June 2010, December 2010, October 2011, and December 2011. During Round 11 of groundwater sampling, 13 of the 14 monitoring wells were sampled between July 18, 2011 and July 22, 2011. Attempts were made to sample the fourteenth well, MW-56, but there was not sufficient water in the well. The Army consulted with USEPA, and the USEPA suggested that the Army monitor the water levels and attempt to sample MW-56 at a time when sufficient groundwater was observed in the aquifer. Parsons returned to the Ash Landfill on October 3, 2011 and collected a groundwater sample from MW-56. The well locations are shown on **Figure 6**.

Three of the biowall process monitoring wells are also plume performance wells (MWT-23, MWT-28, and MWT-29). These five wells are either within or immediately upgradient or downgradient of the biowalls and are used to assess if, and when, the biowalls may require additional substrate. The Annual Report – Year 1 recommended that groundwater samples collected from monitoring wells PT-17 and MWT-7 be analyzed for additional geochemical parameters that are included for the process monitoring wells to better monitor the progress of the treatment zone.

As indicated in **Table 1**, samples from the wells in the biowall process monitoring group (MWT-23, MWT-26, MWT-27, MWT-28, and MWT-29) and from two wells from the on-site plume performance group (PT-17 and MWT-7) were submitted to Test America Laboratories, Inc. in Buffalo, New York for Rounds 1 through 8 and to Test America Laboratories, Inc. in Savannah, Georgia for Rounds 11 through 12 to be analyzed for:

- VOCs by USEPA SW846 Method 8260B
- Sulfate by USEPA Method 300.1
- Total organic carbon (TOC) by USEPA SW846 Method 9060A

Samples from these wells were also submitted to Microseeps, Inc. located in Pittsburgh, Pennsylvania for analysis for methane, ethane, and ethene (MEE) by AM20GAX, Microseeps' version of Method RSK 175.

During sampling in the field, the following geochemical parameters were recorded for the duration of low-flow sampling for each groundwater sample:

- pH, ORP, and conductivity were measured with a Horiba U-52 multi-parameter instrument;
- DO and temperature were measured with a YSI 85 meter; and
- Turbidity was measured with a Lamotte 2020 turbidity meter.

In addition, a HACH® DR/850 Colorimeter was used in the field to measure manganese and ferrous iron at PT-17, MWT-7, MWT-23, MWT-26, MWT-27, MTW-28, and MWT-29. Manganese and ferrous iron were measured by USEPA Method 8034 and USEPA Method 8146, respectively. A summary of the samples collected is presented in **Table 1**.

3.2 Groundwater Elevations

Historic groundwater elevations and groundwater elevations from the four years of LTM round are presented in **Figure 7** and **Table 2**. Groundwater contours and groundwater flow direction based on twelfth round measurements taken on December 12, 2011 are provided in **Figure 8**; these data show that groundwater levels were relatively high during the twelfth sampling event

3.3 Geochemical Data

Biodegradation causes measurable changes in groundwater geochemistry that can be used to evaluate the effectiveness of substrate addition in stimulating biodegradation. For anaerobic reductive dechlorination to be an effective process, typically groundwater will be sulfate-reducing or methanogenic. As mentioned above, geochemical parameters collected in the field that also serve as water quality indicators (i.e., pH, ORP, DO, conductivity, and temperature) were recorded for all the wells in the LTM program. Analysis

for the additional geochemical parameters of TOC, sulfate, and MEE, and field tests for ferrous iron and manganese, were completed at PT-18A, MWT-7, MWT-23, MWT-26, MWT-27, MWT-28, and MWT-29. According to USEPA guidance on natural attenuation of chlorinated solvents (USEPA, 1998), analysis of these geochemical parameters conditions are conducive for anaerobic reductive dechlorination to occur if the following geochemical signatures are identified:

- Depleted concentrations of DO and sulfate;
- Elevated concentrations of methane;
- Reduced ORP;
- Elevated concentrations of soluble organic substrate as defined by TOC in groundwater; and
- An increase in the concentrations of ferrous iron and manganese relative to background conditions.

Geochemical parameter results are shown in **Table 3,** which is organized with the most upgradient well listed first and the most downgradient well listed last. A comparison of the geochemical parameters for wells MWT-26 (upgradient of Biowall B1) to MWT-28 (in Biowall B2) for Year 5, summarized below, demonstrates the change in geochemistry across the B1/B2 Biowalls.

Dissolved Oxygen

DO is the most favored electron acceptor (i.e., yields the most energy) used by microbes during biodegradation of organic carbon, and its presence can inhibit the anaerobic degradation of chlorinated ethenes. In the wells sampled within Biowalls B1/B2 and Biowall C2, DO levels are depleted (less than 1.0 milligrams per liter [mg/L]) in both Year 5 events (see **Table 3**). DO is depleted due to the biological activity encouraged by the biowall substrate. The depletion of DO enhances the potential for anaerobic degradation of chlorinated ethenes in groundwater.

Sulfate

Sulfate is used as an electron acceptor during sulfate reduction, competing with anaerobic reductive dechlorination for available substrate/electron donor. Sulfate levels lower than 20 mg/L are desired to prevent inhibition of reductive dechlorination of chlorinated ethenes (USEPA, 1998). In Year 5, concentrations were less than 20 mg/L in Biowall B1 (MWT-27), Biowall B2 (MWT-28) and Biowall C2 (MWT-23). The sulfate levels detected within the biowalls (at MWT-27, MWT-28, and MWT-23) were orders of magnitude lower than the concentration of sulfate detected upgradient of Biowalls B1/B2 at MWT-26 (see **Table 3**). These conditions indicate that sulfate is being depleted and that sulfate should not inhibit anaerobic dechlorination within the biowalls.

Methane

The presence of methane in groundwater is indicative of strongly reducing methanogenic conditions. An increase in the concentrations of methane indicates that reducing conditions are optimal for anaerobic reductive dechlorination to occur. Methane was detected in the well upgradient of Biowall B1/B2 (MWT-26) at a concentration of 39 micrograms per liter (µg/L) in Round 12. Compared to this concentration, concentrations of methane were orders of magnitude greater at the process wells located within biowall B1, B2, and C2 (see **Table 3**). These data demonstrate that there is an increase in the level of methanogenic activity within the biowalls and in downgradient areas, compared to upgradient locations.

Oxidation-Reduction Potential

ORP indicates the level of electron activity in groundwater and the tendency of groundwater to accept or transfer electrons. Low ORP, less than -100 millivolts (mV), is conducive for anaerobic reductive dechlorination to occur (USEPA, 1998). During Round 12, ORP values upgradient of Biowall B1/B2 were significantly higher than ORP values in the wells within the biowalls, which were less than or close to -100 mV (see **Table 3**). The ORP levels within Biowalls B1/B2 and C2 indicate that reducing conditions within the biowalls are sufficient to support sulfate reduction, methanogenesis, and anaerobic reductive dechlorination.

Total Organic Carbon

The presence of organic substrate is necessary to stimulate and sustain anaerobic degradation processes. In biowalls, organic carbon acts as an energy source for anaerobic bacteria and drives reductive dechlorination. Typically concentrations of TOC greater than 20 mg/L are sufficient to maintain sulfate reducing and methanogenic conditions (USEPA, 1998). As shown in **Table 3**, the TOC concentration in Biowall B1 was greater than the TOC concentrations upgradient of the biowalls. In Biowalls B2 and C2, the TOC concentrations decreased below the threshold value of 20 mg/L, but remained greater than the concentration at upgradient well, MWT-26. There is a decrease in the concentration of TOC as readily degraded organics (i.e., vegetable oil and cellulose) in the mulch mixture are consumed; however, TOC concentrations on-site remain sufficiently high enough to serve as an energy source for anaerobic bacteria in the biowalls. As discussed below, the change in TOC concentrations appears to have little impact on the efficiency at which chlorinated organics are degraded within the biowalls and does not indicate that the biowalls need to be recharged at this time.

Ferrous Iron and Manganese

As described in USEPA (1998), iron III (ferric iron) is an electron acceptor used by iron-reducing bacteria under anaerobic conditions; Iron II (ferrous iron) is the product. Iron III is relatively insoluble in groundwater relative to Iron II. Therefore, an increase in concentrations of Iron II in groundwater is a clear indication that anaerobic iron reduction is occurring. Similarly, USEPA (1998) states that

manganese (IV) is an electron acceptor used by manganese-reducing bacteria under anaerobic environments; soluble manganese (II) is the product. Under anaerobic conditions like those at the Ash Landfill, the presence of manganese and ferrous iron in groundwater at concentrations above the natural background concentrations demonstrates that manganese reduction and iron reduction are occurring at the site. These data support the conclusion that conditions within the biowalls are anaerobic and conducive to the degradation of chlorinated ethenes.

Summary

Monitoring data for wells within the biowalls during the fifth year of LTM indicate the following:

- DO remains below 1.0 mg/L at Biowalls B1/B2 and Biowall C2;
- Concentrations of TOC remain elevated in the biowalls, and greater than at the upgradient well;
- ORP values ranged from -136 mV to -71 mV;
- Sulfate remains below 20 mg/L;
- Methane concentrations range from 8.8 mg/L to 16 mg/L; and
- Ferrous iron concentrations are increasing in the biowalls, indicating that conditions are conducive to the degradation of chlorinated ethenes.

A multiple lines-of-evidence approach that evaluates geochemical parameters together with the analytical data indicates that conditions in the biowalls are sufficient to support anaerobic degradation processes. Substrate in the biowalls has not been significantly depleted and biodegradation continues to occur within the biowalls. Highly anaerobic conditions persist within the biowalls and sufficient levels of organic carbon, ORP, sulfate, and methane are being sustained for effective anaerobic degradation of chlorinated ethenes.

3.4 Chemical Data Analysis and Groundwater Remedy Evaluation

Table 4 summarizes the concentrations of chlorinated ethenes detected in groundwater during the twelve rounds of LTM. **Table 4** is organized with the most upgradient well listed first and the most downgradient well listed last. A complete presentation of the groundwater data is provided in **Appendix B**. **Figure 6** presents the chlorinated ethene data for the twelve rounds. The discussion below focuses on data collected during Year 5 (Rounds 11 and 12) of the LTM program, and addresses how the remedial action objectives are being achieved.

Achievement of first performance monitoring objective:

- *Confirm that there are no exceedances of groundwater standards for contaminants of concern (COC) at the off-site trigger monitoring well MW-56.*

Concentrations of chlorinated ethenes at off-site well MW-56 remain low or non-detect, with concentrations of TCE, cis-DCE, and VC meeting regulatory standards. As shown in **Table 4**, the fifth year of LTM confirmed that there were no exceedances of COC groundwater standards at MW-56. VC and TCE were not detected in any of the rounds at MW-56; cis-DCE was detected at MW-56 below its Class GA groundwater standard (5 µg/L) during Year 5.

Achievement of second performance monitoring objective:

- *Document the effectiveness of the biowalls to remediate and attenuate the chlorinated ethene plume.*

TCE remains above the Class GA groundwater standard (5 µg/L) at PT-18A (upgradient of biowalls). Concentrations of TCE at PT-18A varied from a maximum of 2,700 µg/L in the fourth round to a minimum of 220 µg/L in the fifth round over the first three years. In the past two years (2010 and 2011), the concentration of TCE has decreased to 120 µg/L in the ninth round, further decreasing to 6.3 µg/L in the tenth round, not detected in the eleventh round, and increasing to 7.3 µg/L in the twelfth round (see **Table 4**). Concentrations of TCE at well MWT-25 (upgradient of Biowall A) have consistently decreased from 50 µg/L in the first quarter to below the Class GA groundwater standard at a concentration of 1.6 µg/L in Round 12.

Concentrations of TCE and cis-DCE within the biowalls at MWT-27 (in Biowall B1), MWT-28 (in Biowall B2), and MWT-23 (in Biowall C2) remain below Class GA standards, which is an expected performance measure. Cis-DCE was reported below Class GA standards in the biowalls in all rounds. Concentrations of VC were recorded above the Class GA standard in Biowall B1 at a concentration of 3.0 µg/L and was detected above the Class GA standard in Biowalls B2 and C2. Continued sampling is necessary to confirm any trend for VC at MWT-27 in subsequent monitoring events.

The reduction in concentrations of TCE, coupled with concentrations of cis-DCE and VC not being elevated within the biowalls, suggests that complete mineralization of chlorinated ethenes is occurring. Therefore, the biowalls are operating as expected with no loss of performance within the biowalls.

Ethene, a final product of reductive dechlorination, is only slightly elevated within the biowalls. This suggests that multiple anaerobic degradation processes may be occurring within in the biowalls. For example, ethene is not produced by anaerobic oxidation of cis-DCE or VC, nor by abiotic transformation of chlorinated ethenes by reduced iron sulfides. Alternatively, concentrations of ethene may be low since ethene can be further reduced under highly anaerobic conditions or can off-gas with carbon dioxide or methane since it is volatile.

The overall trend in the concentrations of TCE, cis-DCE, and VC at well MWT-26 (between Biowalls A1/A2 and Biowalls B1/B2) is decreasing over time. Concentrations of TCE, cis-DCE, and VC at this well decreased during the Summer 2011 monitoring event, and increased slightly in the Winter 2011 event. The area downgradient of MWT-26 is bounded by Biowalls B1/B2 in which the majority of

concentrations of TCE, cis-DCE, and VC, except for the Round 12 exceedence of VC in Biowall B2, remain non-detect or below their respective Class GA standards. The Army will continue to monitor well MWT-26 to see if a trend in concentrations persists.

Concentrations at MWT-24 (downgradient of Biowall C2) show an overall decline over time, with some seasonal variation in TCE (from 0.94 J µg/L in the first quarter to 5.6 µg/L in the eleventh round) and cis-DCE (from 210 µg/L in the first quarter to 23 µg/L in the tenth round), and substantial decline in VC (from 45 µg/L in the second quarter to 2.3 µg/L in the twelfth round). TCE has been at or below the Class GA groundwater standard (5 µg/L) at MWT-24 in all rounds, with the exception of 6.0 µg/L in Round 6 and 5.6 µg/L in Round 11, which were likely due to seasonal fluctuation (i.e., the effects of desorption during a period with frequent precipitation and subsequent high water levels) .

The changes in groundwater concentrations of TCE, DCE, and VC as the groundwater passes through the biowalls are shown in **Figures 9A** through **9L** for Rounds 1 through 12, respectively. These figures show that the concentrations of TCE in groundwater within the biowalls are reduced to concentrations near or below detection limits. The concentration of TCE rebounds with distance downgradient of Biowalls C1/C2; this increase may be due to residual TCE that is desorbing from aquifer soils or diffusing out of low permeability soils. These results indicate that the biowalls treat the water within the biowalls and create a measurable improvement in downgradient water quality.

Anaerobic degradation of TCE may also occur in areas of the aquifer formation that are downgradient of the biowalls, where the presence of soluble organic carbon released from the biowalls enhances reductive dechlorination processes. In these downgradient areas, the concentrations of cis-DCE and VC are higher than they are within the biowalls. This suggests that sequential biotic reductive dechlorination of chlorinated organics is the primary degradation process in the downgradient reaction zones, with the presence of low concentrations of TCE being due to desorption from the aquifer matrix or from back diffusion of contaminated groundwater from low permeability soils. The elevated concentration of ethene, 47 µg/L and 7.3 µg/L observed at MWT-29 in Round 11 and 12 respectively, as compared to the upgradient concentration of 1.0 µg/L and ND at MWT-26, also indicates that downgradient biotic reductive dechlorination is occurring. Further downgradient, TCE concentrations continued to decrease at MWT-7, which is 310 feet downgradient of Biowalls C1/C2. TCE was detected at a concentration of 0.52 J µg/L in Round 11 and at 2.3 µg/L in Round 12.

Achievement of third performance monitoring objective:

- *Confirm that groundwater concentrations throughout the plume are decreasing to eventually meet GA standards.*

In general, concentrations of TCE, cis-DCE, and VC decreased over the twelve sampling events at the wells within and downgradient of the biowalls. Time plots for monitoring wells MWT-25, MWT-26, MWT-27, MWT-28, MWT-29, MWT-22, PT-22, MWT-23, MWT-24, and PT-24 are presented in **Figures 10A** through **10J**, respectively. These plots show an overall decreasing trend for the COCs. **Figures 10E**, **10F**, and **10G** show that the concentrations at MWT-29, MWT-22, and PT-22, respectively,

which are located downgradient of Biowalls B1/B2, show an overall decrease during Year 5 of LTM compared to previous years. This confirms that the higher concentrations that were observed during the winter monitoring event were likely the result of desorption during periods of seasonal high water levels, and do not reflect an overall increasing concentration trend. The time plots of the downgradient wells (MWT-29, MWT-22, MWT-24, and PT-24) show that TCE concentrations in the wells in the vicinity and downgradient of the biowalls are decreasing over time.

An exponential regression, which models first-order decay typical in biological processes, has been calculated for each monitoring well. The regression serves as a means of estimating the time required for the concentrations of chlorinated organics to meet their respective GA groundwater standards. **Table 5** summarizes the trend for each contaminant in each well. Time plots with regression lines are included as **Appendix C**.

The regression plots in Appendix C indicate that all of the wells, with the exception of PT-22 and MWT-22, either comply with the Class GA groundwater standard or are expected to achieve their respective standard by 2055. There may be limiting factors in reaching the groundwater standards, such as desorption and back diffusion from low permeability soils, as well as the effect of desorption on the groundwater concentrations observed during winter months when groundwater levels were high which may drive the actual time required to reach compliance.

Time plots of the concentration of TCE, cis-DCE, and VC for wells PT-18A, PT-17, and MWT-7 are provided in **Figures 11A**, **11B**, and **11C**, respectively; these plots include historic data prior to the installation of the biowalls. **Figures 11A**, **11B,** and **11C** indicate that there is an overall decreasing trend for TCE, cis-DCE, and VC at PT-18A. There is no trend for cis-DCE or VC at PT-17 and MWT-7. At MWT-7, there is a decreasing trend for TCE. Since PT-18A is located in the Ash Landfill source area upgradient of all biowalls, decreasing trends at this location reflect natural attenuation processes.

PT-17 and MWT-7 are located 150 ft and 310 ft from Biowalls C1/C2, respectively. As such, it is possible that treatment zones have not been established this far downgradient of the biowalls. Nevertheless, an increasing trend for cis-DCE paired with a decreasing trend for TCE may indicate that reductive dechlorination is occurring at these locations. To date, concentrations at these wells are within historic levels and the Army will continue to evaluate any impacts of the biowalls on this portion of the plume.

Other Compounds

Non-chlorinated organics were detected in the groundwater at the Ash Landfill OU, and the data are presented in **Appendix B**. Benzene, isopropylbenzene, ethyl benzene, toluene, and total xylenes were detected at PT-18A, and ethyl benzene, toluene, and total xylenes exceeded their respective Class GA Standards with concentrations of 9.2 µg/L, 130 µg/L, and 60 µg/L, respectively, during Round 11. These COCs have not been previously detected at PT-18A and were not detected in Round 12. In Round 12 benzene and ethyl benzene were each detected in one well at concentrations below their respective Class GA standards. Benzene was detected at MWT-27 at a concentration of 0.26 J µg/L, and ethyl benzene

was detected at MWT-23 at a concentration of 0.16 J µg/L (average of sample and duplicate). None of these detected compounds are historical COCs, and their detections are not believed to be associated with historic site operations.

3.5 Biowall Recharge Evaluation

The RDR calls for a recharge evaluation at the end of each year of monitoring. The evaluations completed at the end of Year 1, Year 2, Year 3, Year 4 concluded that recharge was not required and that a recharge evaluation would be performed again at the end of Year 5.

Recharge Evaluation Process

A recharge evaluation, defined on Figure 7-3 of the RDR and described below, is the determination of the need to recharge a biowall segment. The evaluation consists of the following:

- Determining the need to recharge a biowall segment requires a review of chemical concentrations and geochemical parameters by an experienced professional. A specific, absolute set of conditions or parameter values are not appropriate to determine the need to recharge. Rather, a lines-of-evidence approach will be used that correlates a decrease in the efficiency of the system to degrade chloroethenes to geochemical evidence that indicates the cause is due to substrate depletion will be used.

- The following parameters will be evaluated annually using at least two consecutive rounds of sampling data in order to determine if recharge of the biowalls is necessary:

  - COC concentrations in the biowalls (e.g., MWT-27, MWT-28, and MWT-23). If COC concentrations have rebounded by greater than 50% for any single sampling event, this indicates that recharge may need to be considered. Concentrations within the biowalls, not at downgradient locations, will be used to make this evaluation so that the effectiveness of the wall itself is being measured without the interference of effects such as desorption and mixing.

  - Geochemical parameters, specifically ORP, TOC, and DO, in the biowalls (e.g., at MWT-27, MWT-28, and MWT-23). Benchmark values will be used initially to evaluate anaerobic conditions in the groundwater. The benchmarks are:

    - ORP < -100 mV
    - TOC > 20 mg/L
    - DO < 1.0 mg/L

Parameters described in the bullets above are guidelines and will be considered in evaluating if, and when, a depletion of bioavailable organic substrate results in a rebound in geochemical redox conditions under which effective anaerobic degradation of chlorinated ethenes does not occur.

Recharge Evaluation for Year 5

The recharge evaluation for Year 5 indicates that recharging the biowalls is not necessary at this time.

Section 3.2 presents the geochemical data for Year 5. The values of geochemical parameters measured in Year 5 support the interpretation that reductive dechlorination is occurring in Biowalls A1/A2, B1/B2, and C1/C2. The tables below show that the geochemical parameters for the wells within the biowalls meet the benchmark values and that groundwater conditions remain highly reducing.

Parameter	Benchmark Value	MWT-27 (Qs 1, 2, 3, 4, Rs 5, 6, 7, 8, 9, 10, 11, 12)
ORP (mV)	< -100	-158, -145, -141, -166, -133, -126, -128, -102, -121, -111, -109, -71
TOC (mg/L)	> 20	2050, 1350, 755, 167, 89, 54, 81.7, 50, 61, 32, 42, 35
DO (mg/L)	< 1.0	0.25, 0.08, 0, 0.06, 0.18, 0.13, 0.06, 0.15, 0.05, 0.05, 0.01, 0.08

Parameter	Benchmark Value	MWT-28 (Qs 1, 2, 3, 4, Rs 5, 6, 7, 8, 9, 10, 11, 12)
ORP (mV)	< -100	-150, -113, -131, -151, -91, -95, -135, -148, -104, -100, -135, -125.9
TOC (mg/L)	> 20	1775, 171, 309, 92, 49, 28, 28.2, 25.5, 21, 12, 17, 12
DO (mg/L)	< 1.0	0.16, 0.09, 0, 0.08, 0.15, 0.10, 0.18, 0.29, 0.06, 0.07, 0.28, 0.02

Parameter	Benchmark Value	MWT-23 (Qs 1, 2, 3, 4, Rs 5, 6, 7, 8, 9, 10, 11, 12)
ORP (mV)	< -100	-122, -109, -87, -144, -129, -104, -117, -90, -115, -103, -136, -104.1
TOC (mg/L)	> 20	260, 210, 303, 151, 29, 20, 15.6, 17.4, 11, 5.9, 6.2, 6.3
DO (mg/L)	< 1.0	0.26, 0.35, 0, 0.12, 0.15, 0.20, 0.07, 0.63, 0.04, 0.29, 0.85, 0.08

Section 3.3 presents the analytical data for Year 5. As shown in the table below, concentrations of TCE, cDCE, and VC in the biowalls remain low and have not rebounded by greater than 50% for any sampling event. Further, the ability of the biowalls to sustain a high degree of reductive dechlorination is well established.

		TCE (µg/L)	cis-DCE (µg/L)	VC (µg/L)
MWT-27	Q1	ND	ND	ND
	Q2	ND	ND	ND
	Q3	ND	ND	ND
	Q4	ND	ND	ND
	R5	ND	ND	ND
	R6	ND	ND	ND
	R7	ND	ND	ND
	R8	ND	ND	3.1 J
	R9	ND	0.18 J	ND
	R10	0.51 J	1.1	2.1
	R11	ND	0.21 J	ND
	R12	ND	1.4	3.0

		TCE (µg/L)	cis-DCE (µg/L)	VC (µg/L)
MWT-28	Q1	ND	ND	ND
	Q2	ND	ND	ND
	Q3	ND	ND	ND
	Q4	ND	ND	ND
	R5	ND	ND	ND
	R6	ND	ND	ND
	R7	ND	ND	ND
	R8	ND	ND	ND
	R9	ND	ND	ND
	R10	ND	0.51 J	0.64 J
	R11	ND	ND	ND
	R12	ND	0.28 J	0.56 J
MWT-23	Q1	ND	60	23
	Q2	ND	11	4.8
	Q3	ND	3.1	ND
	Q4	ND	3.6 J	3.65
	R5	ND	ND	ND
	R6	0.4	2.4	2.8
	R7	ND	0.42 J	ND
	R8	ND	0.47 J	ND
	R9	ND	0.41 J	ND
	R10	0.29 J	4.6	5.3
	R11	ND	0.57 J	0.33 J
	R12	0.18 J	2.0	1.85

The analytical data at MWT-27 shows TCE was not detected in Rounds 11 and 12. The concentration of VC was measured above the Class GA groundwater standard at a concentration of 3.0 µg/L in Round 11; however, this concentration was less than the maximum detected VC concentration at MWT-27 (i.e. 3.1 J µg/L in Round 8). The Army will continue to monitor MWT-27 in subsequent monitoring events to determine any trend for VC at this well.

At MWT-28, concentrations of cDCE and VC remain below Class GA groundwater standards, and the concentration of TCE remains below detections limits. At MWT-23 TCE, cDCE, and VC concentrations were below Class GA groundwater standards.

Overall, the multiple lines-of-evidence approach that evaluates geochemical parameters together with the chemical analytical data indicates that conditions in the biowalls are sufficiently anaerobic to support reductive chlorination of chlorinated ethenes. Substrate in the biowalls has not been significantly depleted and biodegradation continues to occur. Although TOC levels are below the benchmark value at MWT-28 and MWT-23, they remain higher than TOC concentrations in the upgradient well. Low DO concentrations and overall low ORPs indicate that highly reducing conditions are being maintained with the current levels of TOC. Reductions in sulfate and the production of methane further indicate that highly anaerobic conditions are being sustained.

There are some geochemical parameters that are not as strong in the last couple of monitoring rounds and there is some relatively low variations in VOC concentrations. However, recharge should be considered when conditions are such that consistent trends develop that show the geochemical parameters continue to weaken and that concentrations of TCE and DCE are increasing above the GA standard over multiple events.

Based on the review of the analytical and geochemical data, the biowalls do not need to be recharged at this time, and the biowall system continues to meet the long-term monitoring objectives established in the RDR (Parsons, 2006).

3.6 Soil Remedy Evaluation

Part of the remedial action was installing a 12-inch vegetative cover over the Ash Landfill and the NCFL. The covers have been inspected and field observations from Year 5 note that the landfills are vegetated with grass and clover. At the NCFL, visual observations noted a small amount of soil erosion and the presence of rodent trails; however, the erosion and the trails cut less than 6 inches into the cover. Therefore, underlying soil has not been exposed to the environment and corrective action is not required. The Army will continue to monitor the integrity of the covers and ensure that the vegetative covers have not been breached and that the underlying soil is not exposed.

3.7 Land Use Controls (LUCs)

The remedy for the Ash Landfill OU requires the implementation and maintenance of land use controls (LUCs). The LUC requirements are detailed in the "Land Use Control Remedial Design for SEAD-27, 66, and 64A, *Addendum 3*" (2008b). The selected LUCs for the Ash Landfill OU are as follows:

- Prevent access to or use of the groundwater until cleanup levels are met;
- Maintain the integrity of any current or future remedial or monitoring system, such as monitoring wells and permeable reactive barriers;
- Prohibit excavation of the soil or construction of inhabitable structures (temporary or permanent) above the area of the existing groundwater plume; and
- Maintain the vegetative soil layer over the ash fill areas and the NCFL to limit ecological contact.

As part of the LTM program, the Army inspected the site to determine that the LUCs are being maintained. While performing the groundwater sampling, it was confirmed that no prohibited facilities have been constructed and no access to or use of groundwater was evident other than that needed for monitoring. As discussed in **Section 3.5**, the vegetative covers are limiting ecological contact with the underlying soil.

During 11R2011 and 12R2011, groundwater monitoring wells were inspected by field personnel. The integrity of all wells at the Ash Landfill is intact and each well is viable for groundwater elevation readings and groundwater sampling, where appropriate. Monitoring wells not required as part of the LTM were decommissioned between September 2010 and January 2011.

3.8 Operating Properly and Successfully

The implemented design has met the requirements for "operating properly and successfully" (OPS) as outlined in Section 12(h)(s) of the USEPA "Guidance for Evaluation of Federal Agency Demonstrations" (USEPA, 1996). Parsons submitted a letter on behalf of the Army to USEPA, dated June 6, 2008, declaring that the Army had determined that the remedy met the OPS requirements. The Army submitted a letter under separate cover on February 26, 2009 further certifying that the "information, data and analysis provided in Parsons' June 6, 2008 letter was true and accurate." On March 11, 2009, the USEPA transmitted a letter to the Army approving the Army's OPS demonstration. The data for Year 5 of the LTM program are consistent with the data for Year 1, Year 2, and Year 3 and demonstrate that the remedy is OPS, as described below.

The remedial action is operating "properly."

The USEPA guidance describes that "a remedial action is operating 'properly' if it is operating as designed." The Construction Completion Report (CCR) (Parsons, 2007) details that the vegetative covers were installed as designed, meeting or exceeding the 12-inch of soil cover requirement. **Section 3.5** describes that the covers are intact and effectively prevent ecological contact with the underlying soil; therefore, the vegetative covers are operating properly.

The CCR also details the construction of the biowalls. Deviation from the intended design resulted in wider-than-intended biowalls that required the emplacement of additional mulch; since this is an enhancement of the design, it is fair to say that the biowalls were constructed as designed. The geochemical data presented and discussed in **Section 3.1** indicate that conditions that are favorable to anaerobic reductive dechlorination have been established within and near the biowalls, which was the expectation of the design of the biowall system.

The remedial action is operating "successfully."

A remedial action may receive the USEPA's designation of "operating successfully" (1) if "a system will achieve the cleanup levels or performance goals delineated in the decision document" and (2) if the remedy is protective of human health and the environment. The data presented in **Section 3.3** demonstrate that concentrations of VOCs are decreasing and will eventually meet the Class GA groundwater standards. The time plots presented in **Figures 10A** through **10J** show a decreasing trend for the COCs at the Ash Landfill OU; **Table 5** summarizes the trends in concentrations of COCs over time, demonstrating that the concentrations in groundwater will eventually meet the groundwater standards.

Recent inspection of the vegetative covers at the Ash Landfill and the NCFL indicate that the covers are preventing ecological receptors from contacting the underlying soil; therefore, there is no threat to the environment. The LUCs have been maintained and no one is accessing the groundwater; therefore, there is no threat to human health. Based on a review of the site data, an inspection of the condition of the vegetative covers, and a confirmation that the LUCs are being maintained, the Army believes that the remedial action is operating successfully.

Based on an assessment of the design and construction of the remedial action, as well as an evaluation of the geochemical and analytical data from the three years of groundwater monitoring, the Army believes that the remedial action at the Ash Landfill meets the requirements to be designated as "operating properly and successfully".

4.0 LONG-TERM MONITORING CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Based on the results of the long-term monitoring at the Ash Landfill since the installation of the full-scale biowalls, the Army has made the following conclusions:

- TCE within the biowalls remains below or close to detection limits;
- TCE, cis-DCE, and VC are present in the groundwater at the site at concentrations above respective Class GA groundwater standards;
- Chemical results indicate that the concentrations of chlorinated ethenes are decreasing as they pass through the biowall systems;
- Geochemical parameters indicate that groundwater redox conditions are highly conducive for reductive dechlorination to occur within the biowalls;
- Concentrations of chlorinated ethenes at off-site well MW-56 are below Class GA groundwater standards;
- Continued monitoring is required to determine trends in concentrations of COCs at PT-18A, PT-17, and MWT-7;
- Recharge of the biowalls is not necessary at this time;
- The remedial action continues to meets the requirements of the USEPA's "operating properly and successfully" designation; and
- The Army will continue to monitor the performance of the biowall system, including semi-annual periodic evaluations of the potential need to recharge the biowalls.

4.2 Recommendations

Based on the first five years of long-term monitoring at the Ash Landfill OU, the Army recommends continuing the semi-annual frequency of monitoring based on the process shown in **Figure 12** (which is also Figure 7-3 of the RDR). The recommendations for LTM during year four of monitoring are as follows:

- Biowall process monitoring wells (MWT-26, MWT-27, MWT-28, MWT-29, and MWT-23) will be monitored on a semi-annual basis. Each year a recharge evaluation will be completed. As stated in the RDR (Parsons, 2006b), if a recharge is conducted, MWT-26, MWT-27, and MWT-29 would be excluded from the LTM program, as detailed in **Figure 12**. MWT-28 and MWT-23 will continue to be monitored as part of the performance monitoring wells to supplement data that will be used to determine whether additional biowall recharge is required. The recharge evaluation(s) conducted each year after the first biowall recharge would review the chemical and geochemical data at MWT-28 and MWT-23, and determine if the contaminant increase is a result of poor biowall performance or due to other issues such as seasonal variations in groundwater levels, unusual precipitation events, or desorption and back diffusion.

- Performance monitoring wells (PT-17, PT-18A, PT-22, PT-24, MWT-7, MWT-22, MWT-24, and MWT-25) will continue to be monitored on a semi-annual basis in a manner consistent with the Year 3 LTM program. In the five years of LTM events at the Ash Landfill OU, the concentrations of COCs, specifically TCE, in the wells downgradient of the source area (near PT-18A) have decreased.

- The off-site performance monitoring well (MW-56) will continue to be monitored on a semi-annual basis.

- The vegetative covers at the Ash Landfill and the NCFL will be inspected annually to ensure that they remain intact and protective of ecological receptors.

- The frequency of monitoring and the need to recharge the biowalls will be reviewed in the annual report submitted after the completion of the fifth year of LTM, based on the process outlined in **Figure 12**.

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TABLES

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Table 1
Groundwater Sample Collection
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Monitoring Wells	Monitoring Well Group			Laboratory Analysis				Field Test	
	On-Site Plume Performance Monitoring	Biowall Process Monitoring	Off-Site Performance Monitoring	VOC 8260B	TOC 9060A	MEE RSK-175	Sulfate EPA 300.1	Ferrous Iron (mg/L)	Manganese (mg/L)
PT-18A	X			X				X	X
MWT-25	X			X					
MWT-26		X		X	X	X	X	X	X
MWT-27		X		X	X	X	X	X	X
MWT-28	X	X		X	X	X	X	X	X
MWT-29	X	X		X	X	X	X	X	X
MWT-22	X			X					
PT-22	X			X					
MWT-23	X	X		X	X	X	X	X	X
MWT-24	X			X					
PT-17	X			X	X	X	X	X	X
MWT-7	X			X	X	X	X	X	X
PT-24	X			X					
MW-56			X	X					

Notes:
1. All samples were analyzed for field parameters including pH, ORP, dissolved oxygen, conductivity, temperature and turbidity.
2. All samples were collected between December 12, 2011 and December 15, 2011.

Table 2
Groundwater Elevation Data
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Monitoring Well	Top of Riser Elevation (ft)	Well Depth (rel. TOC) (ft)	LTM R12 - December 2011			Historical Data		
			Saturated Thickness (ft)	Depth to Groundwater (ft)	Water Level Elevation (ft)	Groundwater Elevation (ft)		
						Maximum	Minimum	Range
PT-17	640.14	7.57	4.89	2.68	637.46	637.50	632.74	4.76
PT-18A	659.05	12.87	6.69	6.18	652.87	653.25	649.65	3.60
PT-22	648.61	11.95	6.47	5.48	643.13	644.30	637.47	6.83
PT-24	636.40	11.92	7.06	4.86	631.54	632.76	627.80	4.96
MW-56	630.51	6.52	3.06	3.46	627.05	627.58	624.39	3.19
MWT-7	638.34	13.73	8.73	5.00	633.34	633.50	626.58	6.92
MWT-22	650.663	14.92	10.39	4.53	646.13	648.13	642.29	5.84
MWT-23	646.772	13.76	7.18	6.58	640.19	640.45	636.40	4.05
MWT-24	641.564	13.01	6.89	6.12	635.44	635.84	632.11	3.73
MWT-25	654.507	13.29	8.85	4.44	650.07	650.65	645.93	4.72
MWT-26	652.191	13.22	8.81	4.41	647.78	648.59	644.58	4.01
MWT-27	652.993	12.79	7.48	5.31	647.68	648.23	644.27	3.96
MWT-28	652.685	12.88	7.55	5.33	647.36	647.84	644.20	3.65
MWT-29	651.816	13.12	8.29	4.83	646.99	647.39	643.18	4.21

Table 3
Groundwater Geochemical Data
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Well ID	Location Description	Sample ID	Sample Round	pH	Turbidity (NTU)	Specific Conductance (mS/cm)	DO (mg/L)	ORP (mV)	TOC (mg/L)	Sulfate (mg/L)	Ethane (ug/L)	Ethene (ug/L)	Methane (ug/L)	Manganese (ug/L)	Ferrous Iron (ug/L)
PT-18A	upgradient of walls	ALBW20059	1Q2007	6.63	141	1.69	1.33	93							
		ALBW20074	2Q2007	6.44	110	2.87	0.76	-177							
		ALBW20088	3Q2007	6.71	5	1.66	0	-23							
		ALBW20103	4Q2007	6.41	0.0	1.25	0.04	-5							
		ALBW20117	5R2008	6.36	1.9	1.75	0.22	-10						8.2	> 3.3
		ALBW20132	6R2008	6.58	0.56	2.04	1.76	83							
		ALBW20147	7R2009	6.77	0.45	2.01	0.12	66							
		ALBW20162	8R2009	6.71	0.00	2.04	0.62	154							
		ALBW02177	9R2010	6.7	1.00	2.05	0.1	62						1.5	0.15
		ALBW20192	10R2010	6.66	1.50	1.25	0.16	84							
		ALBW20207	11R2011	6.62	3.30	1.27	0.19	-17							
		ALBW20222	12R2011	6.62	0.40	1.751	0.09	59.9							
MWT-25	upgradient of Biowall A	ALBW20064	1Q2007	8	9.6	0.29	2.83	63							
		ALBW20079	2Q2007	7.27	14	2.2	2.8	52							
		ALBW20093	3Q2007	7.36	6.2	2.43	4.14	100							
		ALBW20108	4Q2007	6.9	0	1.2	0.21	65							
		ALBW20123	5R2008	6.91	0.52	1.47	0.15	-41						1.4	0.75
		ALBW20138	6R2008	6.69	1.32	1.36	2.91	90							
		ALBW20153	7R2009	7.03	1.6	1.46	0.1	-31							
		ALBW20168	8R2009	7.21	0	0.792	3.35	98							
		ALBW20183	9R2010	7.06	0.7	1.48	0.2	-116							
		ALBW20198	10R2010	7.11	2.59	1.23	0.48	-94							
		ALBW20213	11R2011	6.72	13	1.13	0.03	13							
		ALBE20228	12R2011	7	5.2	1.503	1.5	-54.9							
MWT-26	**upgradient of Biowalls B1/B2**	ALBW20066	1Q2007	6.89	10	2.01	1.84	-3	3.9 J	958	ND	ND	ND		
		ALBW20081	2Q2007	7.26	9	1.9	0.48	-135	15.2	738	0.4	7.8	210	2.1	> 3.3
		ALBW20095	3Q2007	6.89	2.2	1.94	0.21	-170	10.3	473	1	13	390	3.1	> 3.3
		ALBW20111	4Q2007	7.08	50	1.9	0.89	-40	6.1	1060	0.16	0.4	44	0.0	1.09
		ALBW20126	5R2008	7.05	0.67	1.88	0.31	-71	5.6	600	0.82	2.9	210	1.3	0.81
		ALBW20141	6R2008	7.01	28.7	1.58	3.54	60	4.4	541	0.046	0.028	10	0.6	0.22
		ALBW20156	7R2009	6.95	2.7	1.75	0.34	-11	6.9	570	3.2	2.7	1,100	0.5	0.71
		ALBW20171	8R2009	7.01	10	2.45	4.66	71	5.6	912	2.2	1.8	610	0.7	0.18
		ALBW20186	9R2010	6.99	1.4	2.04	0.14	-81	4.6	680	2.2	0.71	740	1.7	2.67
		ALBW20202	10R2010	6.77	0.6	1.71	0.5	109	5.5	690	3.7	3.3	1600	0	0.13
		ALBW20216	11R2011	6.64	2.4	1.67	0.07	-31	6.3	510	4.5	1	960	6.3	0.89
		ALBW20232	12R2011	7.05	2.2	1.867	0.54	12.1	4.5	860	0.23	ND	39	0.5	0
MWT-27	**in Biowall B1**	ALBW20067	1Q2007	6.34	120	5.31	0.25	-158	2,050 J	ND	ND	ND			
		ALBW20082	2Q2007	6.65	87	4.37	0.08	-145	1350	ND	0.15	2.7	15,000	> 22	> 3.3
		ALBW20096	3Q2007	6.59	154	3.35	0	-141	755	1.9 J	0.081	0.33	13,500	> 22	> 3.3
		ALBW20112	4Q2007	6.43	58	5.76	0.06	-166	167	31.7	ND	0.014 J	13,000	> 22	2.19
		ALBW20127	5R2008	6.49	40	3.07	0.18	-133	88.9	ND	2.3	0.049	13,000	> 22	3.23
		ALBW20142	6R2008	5.95	24.5	2.59	0.13	-126	53.5	24	1.6	0.13	15,000	> 22	3.05
		ALBW20157	7R2009	6.68	38	2.99	0.06	-128	81.7	0.93 J	5.1	0.15	14,000	22	1.88
		ALBW20172/73	8R2009	6.32	5.1	2.38	0.15	-102	50.0	14.0	4.4	1.2	15,500	9	1.26
		ALBW20187	9R2010	6.52	1.4	2.55	0.05	-121	61	0.95 J	3.8	0.12	13,000	> 22	2.54
		ALBW20203	10R2010	6.42	8.91	2.22	0.05	-111	32	25.0	3.0	0.88	18,000	48	3.30
		ALBW20217/18	11R2011	6.3	3.2	1.75	0.01	-109	42	0.69 J	6.2	0.077	14,000	>22	>3.3
		ALBW20233	12R2011	5.55	16	1.982	0.08	-71	35	19.0	2.0	1.6	16,000	>22	1.23

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MWT-28	in Biowall B2	ALBW20068	1Q2007	7.5	163	0.61	0.16	-150	1,775 J	1.7	ND	ND	12,500 J		
		ALBW20083	2Q2007	6.6	21	2.3	0.09	-113	171	ND	0.67	0.48	19,000	7.5	> 3.3
		ALBW20098	3Q2007	6.56	100	2.74	0	-131	309	ND	0.01 J	0.057	11,000	> 22	> 3.3
		ALBW20113	4Q2007	6.48	10	1.72	0.08	-151	92	ND	0.014 J	ND	11,000	> 22	2.15
		ALBW20128	5R2008	6.31	14	2.16	0.15	-91	49.2	ND	0.65	0.044	12,000	> 22	> 3.3
		ALBW20144	6R2008	5.76	17	1.58	0.10	-95	27.9	48.3	2	0.12	19,000	5.3	1.98
		ALBW20158/59	7R2009	6.49	8.5	1.73	0.18	-135	28.2	ND	1.8	0.064	13,000	20.8	2.87
		ALBW20174	8R2009	6.4	10.8	1.88	0.29	-148	25.5	3.16	1.6	0.12	15,000	6.5	2.15
		ALBW20188/89	9R2010	6.36	5.5	1.62	0.06	-104	21	ND	1.6	0.059	13,500	18.6	0.57
		ALBW20204	10R2010	6.28	4.5	0.802	0.07	-100	12	4.8	1.4	0.17	12,000	5.8	2.58
		ALBW20219	11R2011	6.14	3.93	1.44	0.28	-135	17	0.63 J	0.9	0.0085 J	8,800	8.9	>3.3
		ALBW20234	12R2011	5.76	6.2	0.773	0.02	-125.9	12	19	1.6	ND	12,000	1.1	0.48
MWT-29	downgradient of Biowall B2	ALBW20070	1Q2007	6.49	7.2	2.1	0.33	-76	25.1 J	113	ND	ND	ND		
		ALBW20084/5	2Q2007	6.8	1.7	2.21	0.39	-53	36.7	173	25	150	8,100	7.5	> 3.3
		ALBW20099	3Q2007	6.64	1.8	1.68	0.11	-79	15.7	151	13	160	2,800	8.1	2.84
		ALBW20114	4Q2007	7.04	12.2	1.88	0.21	-101	20.9	289	19	200	2,600	8.6	> 3.3
		ALBW20129/30	5R2008	6.44	2.7	1.85	0.17	-115	14.1	174	14.5	140	3,100	0.0	> 3.3
		ALBW20145	6R2008	6.57	3.69	1.58	1.32	67	13.6	312	14	19	2,700	3.3	0.20
		ALBW20160	7R2009	6.8	1.9	1.8	0.15	-105	11.8	300	10	47	3,000	6.8	2.97
		ALBW20175	8R2009	6.87	0	2.05	0.58	-75	8.2	644	6.7	12	1,500	6.3	0.96
		ALBW20190	9R2010	6.77	2	1.74	0.06	-86	10	170	18	88	5,400	9.1	2.54
		ALBW20205	10R2010	6.71	1.07	1.31	0.56	22	7.4	300	5.1	7.9	3,100	6.4	2.60
		ALBW20220	11R2011	6.55	2.8	1.37	0.05	-90	7.7	170	8.3	47	3,100	12.1	0.03
		ALBW20235	12R2011	6.26	1.9	0.898	0.29	-30.2	4.9	210	1.7	7.3	760	1	0.04
MWT-22	downgradient of Biowall B2	ALBW20071	1Q2007	7.7	4.5	0.13	0.09	-80							
		ALBW20075	2Q2007	6.72	41	2.16	0.3	-65							
		ALBW20100	3Q2007	6.45	2.7	2.03	0.05	-107							
		ALBW20115	4Q2007	6.53	7.5	1.81	0.18	-132							
		ALBW20121	5R2008	6.38	14	2.21	0.3	-34						18.2	> 3.3
		ALBW20136	6R2008	6.44	8.17	1.86	0.57	-19							
		ALBW20151	7R2009	6.59	13	2.14	0.31	-91							
		ALBW20166	8R2009	6.5	15	0.898	0.34	-65							
		ALBW20181	9R2010	6.52	16.8	2.2	0.22	-63							
		ALBW20196	10R2010	6.39	6.8	1.34	0.07	-58							
		ALBW20211	11R2011	6.2	3.6	1.27	0.16	-71							
		ALBW20226	12R2011	5.65	7.7	1.806	0.05	10							
PT-22	between Biowalls B and C	ALBW20060	1Q2007	7.70	4.5	0.13	0.09	-80							
		ALBW20086	2Q2007	6.78	7	1.18	0.78	-54							
		ALBW20089	3Q2007	6.67	0	1.44	0.09	-97							
		ALBW20104	4Q2007	6.73	5.1	1.26	0.17	-166							
		ALBW20118	5R2008	6.69	7.4	1.38	0.29	-119						0.3	1.38
		ALBW20133	6R2008	6.79	1.96	1.20	0.69	-37							
		ALBW20148	7R2009	6.76	11	1.53		-123							
		ALBW20163	8R2009	6.74	6.3	1.45	1.0	-73							
		ALBW20178	9R2010	6.87	3.6	1.39	0.4	-75							
		ALBW20193	10R2010	6.75	0.8	1.14	0.18	15							
		ALBW20208	11R2011	6.65	2	0.88	0.39	-62							
		ALBW20223	12R2011	5.95	0.38	1.57	0.27	205.8							

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MWT-23	in Biowall C2	ALBW20065	1Q2007	7.2	5	0.2	0.26	-122	260 J	ND	ND	ND	12,000		
		ALBW20080	2Q2007	6.51	30	1.8	0.35	-109	210	ND	45	5.9	23,000	5.4	2.73
		ALBW20094	3Q2007	6.3	69.3	1.82	0	-87	303	ND	4.1	0.28	18,000	> 22	2.99
		ALBW20109	4Q2007	6.32	21	2.21	0.12	-144	151	2.8	0.58	0.35	16,000	> 22	2.32
		ALBW20125	5R2008	6.27	29	1.54	0.15	-129	28.4	ND	0.53	0.048	18,000	> 22	> 3.3
		ALBW20140	6R2008	6.44	32	1.86	0.20	-104	20.1	6.3	4.6	1.2	19,000	> 22	2.75
		ALBW20155	7R2009	7.72	16	1.5	0.07	-117	15.6	ND	1.6	0.16	21,000	22	2.08
		ALBW20170	8R2009	6.78	10	2.1	0.63	-90	17.4	ND	1	0.058	18,000	7	3.3
		ALBW20185	9R2010	6.38	9	1.57	0.04	-115	11	ND	2.4	0.038	18,000	>22	1.71
		ALBW20200/201	10R2010	6.41	2.8	1.07	0.29	-103	5.9	16	16	2.85	16,000	13	> 3.3
		ALBW20215	11R2011	6.21	5.97	1.2	0.85	-136	6.2	1.5	2.3	0.1	15,000	8	>3.3
		ALBW20230/231	12R2011	5.64	6.7	0.999	0.08	-104.1	6.3	14	8.9	1.2	16,000	12.6	1.17
MWT-24	downgradient of Biowalls C1/C2	ALBW20063	1Q2007	7.02	10	0.762	0.27	-160							
		ALBW20078	2Q2007	6.91	59	1.08	0.32	-146							
		ALBW20092	3Q2007	6.8	5.4	1.48	0.03	-115							
		ALBW20107	4Q2007	6.81	134	1.32	0.41	-114							
		ALBW20122	5R2008	6.65	45	1.21	0.35	-43						9.1	1.54
		ALBW20137	6R2008	6.40	10	1.31	0.09	40							
		ALBW20152	7R2009	6.81	6.7	1.34	0.11	-20							
		ALBW20164	8R2009	6.61	23	0.558	1.31	59							
		ALBW20182	9R2010	6.63	6.8	1.45	0.06	-21							
		ALBW20197	10R2010	6.78	8.9	0.919	0.14	10							
		ALBW20212	11R2011	6.67	75	0.735	0.39	27							
		ALBW20227	12R2011	6.56	8.67	0.627	0.10	46.2							
PT-17[1]	downgradient of biowalls	ALBW20058	1Q2007	8	3.8	92	0.23	-111							
		ALBW20073	2Q2007	7.1	14	0.729	0.76	-151							
		ALBW20087	3Q2007	6.99	0.4	0.732	0.9	-157							
		ALBW20102	4Q2007	7.12	8.7	2	NS	-24							
		ALBW20116	5R2008		70		0.24		6	15.2	98	66	5700		
		ALBW20131	6R2008	6.68	0.85	0.796	0.30	26	2.6	45.8	6.9	6.6	380	2.8	0.43
		ALBW20146	7R2009	7.19	0.2	1	0.30	-20	4.9	28	50	56	8300	7.5	0.53
		ALBW20161	8R2009	6.75	4	0.345	0.58	-52	2.4	46.2	9.9	5	1,500	2.1	0.07
		ALBW20176	9R2010	6.73	0.9	0.816	0.11	-13	2.4	36	16	20	4,300	5.8	0.29
		ALBW20191	10R2010	6.72	0.45	0.619	0.21	42	1.5	31	4.8	3.5	900	4.0	0.06
		ALBW20206	11R2011	6.57	4	0.573	0.85	-22	3.4	24	1.8	3.8	780	>22	0.64
		ALBW20221	12R2011	6.73	3.03	0.686	2.63	91	1.6	27	1.7	2.4	810	0.6	0.01
MWT-7	immed. upgradient of ZVI wall	ALBW20062	1Q2007	6.8	19.6	0.581	0.01	62							
		ALBW20077	2Q2007	6.95	8	0.763	0.76	52							
		ALBW20091	3Q2007	6.91	4	0.586	0.19	22							
		ABLW20106	4Q2007	6.88	0	0.9	0.16	14							
		ALBW20120	5R2008	6.85	15	0.974	0.43	37	2.3	29.1	6.7	2	400	0.2	0.09
		ALBW20135	6R2008	6.85	7.37	0.859	0.28	66	29.1	3	11	0.27	670	0.8	0.16
		ALBW20150	7R2009	7.61	2.6	0.786	0.05	16	3.1	27	7.8	0.76	1100	0	0.05
		ALBW20165	8R2009	7.12	0.9	0.555	0.46	32	4.5	29.3	17	0.52	2,900	0.01	0.14
		ALBW20180	9R2010	6.85	1.35	1.04	0.02	-21	1.5	29	9	0.55	1,700	0.2	0.19
		ALBW20195	10R2010	6.85	3.3	0.758	0.06	35	1.3	31	4.5	0.2	400	1.1	0.18
		ALBW20210	11R2011	6.7	0.85	0.784	0.08	-85	2	39	4.9	0.21	1,600	0.4	0.45
		ALBW20225	12R2011	6.56	3.9	0.619	0.17	197	1.7	26	0.84	ND	79	0.2	0.05

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PT-24	downgradient of ZVI wall	ALBW20061	1Q2007	8.1	10	70	0.37	-59							
		ALBW20076	2Q2007	7.58	0	0.464	2.2	-59							
		ALBW20090	3Q2007	7.22	1.3	0.557	0.13	-80							
		ALBW20105	4Q2007	7.35	9.7	2.38	0.19	-46							
		ALBW20119	5R2008	6.99	4.3	0.9	0.16	-104						0.5	0.55
		ALBW20134	6R2008	6.84	5.8	0.656	0.11	-10							
		ALBW20149	7R2009	7.14	4.1	0.679	0.05	-101							
		ALBW20164	8R2009	7.32	1	0.41	0.34	-192						1.9	0.2
		ALBW20179	9R2010	7.07	8.3	0.78	0.19	-37							
		ALBW20194	10R2010	7.05	6.14	0.568	0.09	-29							
		ALBW20208	11R2011	6.69	1.6	0.528	0.82	-16							
		ALBW20224	12R2011	6.79	0.48	0.391	0.13	26.2							
MW-56 (2)	off-site well	ALBW20072	1Q2007	6.85	3.3	0.462	0.37	-102							
		ALBW20101	3Q2007	6.9	0	0.603	NS	-65							
		ALBW20124	5R2008	6.73	2	0.763	0.18	-132						0.4	1.18
		ALBW20139	6R2008	6.85	6	0.545	0.81	-125							
		ALBW20154	7R2009	7.01	0.1	0.623	0.23	-186							
		ALBW20169	8R2009	6.59	7.3	0.311	1.86	-149							
		ALBW20184	9R2010	6.85	3.19	0.403	0.16	-131							
		ALBW20199	10R2010	6.88	1.26	0.659	0.32	-105							
		ALBW20214	11R2011	6.89	4.8	0.662	0.21	-105							
		ALBW20229	12R2011	7.15	5.5	0.415	0.45	-74.2							

Notes:
> = The concentration exceeded the range of the Hach DR/850 Colorimeter field kit.
J = the reported value is an estimated concentration.
ND = Non-detect.
NS = Not sampled; water level was below the indicator probe.
1Q2007 - First round of LTM (January 2007)
2Q2007 - Second round of LTM (March 2007)
3Q2007 - Third round of LTM (June 2007)
4Q2007 - Fourth round of LTM (November 2007)
5R2008 - Fifth Round of LTM (June 2008)
6R2008 - Sixth Round of LTM (December 2008)
7R2009 - Seventh Round of LTM (June 2009)
8R2009 - Eighth Round of LTM (December 2009)
9R2010 - Ninth Round of LTM (June 2010)
10R2010 - Tenth Round of LTM (December 2010)
11R2011 - Eleventh Round of LTM (July 2011)
12R2011 - Twelfth Round of LTM (December 2011)

Empty cells indicate that the specified analysis was not completed for that well. The bolded wells are the five wells included in the biowall process monitoring group.
Analysis of TOC, sulfate, methane, ethane, and ethene were completed for the biowall process wells only.
1. During the 5R2008 event the water level in PT-17 was extremely low and water quality readings were not collected.
2. During the 11R2011 event, data was collected at MW-56 in October 2011.

Table 4
Chlorinated Organics in Groundwater
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	Sample Identification		Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)
		Class GA Standard (ug/L)		5	5	5	5	5	2	5
Upgradient	PT-18A	upgradient of walls	3-Jan-07	1 U	2000	0.64 J	220	1.6	2.4	1 U
			17-Mar-07	1 U	1000	0.73 J	170	1.4	2.9	1 U
			5-Jun-07	1 U	1100	1.4	430	3.3	3.3	1 U
			15-Nov-07	1 U	2700	2.1	720	3.4	8.2	1 U
			24-Jun-08	1 U	220	1 U	200	0.9 J	1.4	1 U
			12-Dec-08	0.36 U	1400	1.3	510	2.4	4.6	0.75 U
			4-Jun-09	0.36 U	810 J	0.8 J	260	1.8	2.6	0.75 U
			17-Dec-09	1.5 U	2100	1.5 U	630	3.5 J	7.1	2 J
			1-Jul-10	0.15 U	120	0.11 U	28	0.2 U	0.18 U	0.25 U
			19-Dec-10	0.15 U	6.3	0.11 U	0.54 J	0.2 U	0.18 U	0.25 U
			22-Jul-11	1 U	0.13 U	1.5	15	0.2 U	120	62
			15-Dec-11	0.15 U	7.3	0.11 U	0.53 J	0.2 U	0.18 U	0.25 U
	MWT-25	upgradient of Biowall A	3-Jan-07	1 U	50	1 U	41	0.56 J	1.6	1 U
			17-Mar-07	1 U	55	1 U	84	1.2	9.6	1 U
			6-Jun-07	1 U	28	1 U	36	0.5 J	2.1	1 U
			15-Nov-07	1 U	26	1 U	17	1 U	0.64 J	1 U
			24-Jun-08	1 U	19	1 U	17	1 U	1 U	1 U
			15-Dec-08	0.36 U	3.2	0.29 U	0.63 J	0.13 U	0.24 U	0.75 U
			3-Jun-09	0.36 U	12	0.29 U	10	0.13 U	0.24 U	0.75 U
			17-Dec-09	0.36 U	4.2	0.38 U	3.3	0.42 U	0.24 U	0.29 U
			30-Jun-10	0.15 U	7.7	0.11 U	13	0.49 J	0.18 U	0.25 U
			19-Dec-10	0.15 U	1.9	0.11 U	0.97 J	0.2 U	0.18 U	0.25 U
			20-Jul-11	0.15 U	4.4	0.11 U	14	0.45 J	0.72 J	0.25 U
			15-Dec-11	0.15 U	1.6	0.11 U	0.30 J	0.20 U	0.18 U	0.25 U
	MWT-26	upgradient of Biowalls B1/B2	3-Jan-07	1 U	10	1 U	19	0.6 J	2	1 U
			17-Mar-07	1 U	11	1 U	17	1	6.1	1 U
			5-Jun-07	1 U	3.2	1 U	11	0.7 J	4.4	1 U
			15-Nov-07	1 U	2.8	1 U	2.8	1 U	1 U	1 U
			24-Jun-08	1 U	1.7	1 U	3.3	1 U	1 U	1 U
			15-Dec-08	0.36 U	1.9	0.29 U	1	0.13 U	0.24 U	0.75 U
			3-Jun-09	0.36 U	3.6	0.29 U	6	0.13 U	3.5	0.75 U
			17-Dec-09	0.36 U	5.8	0.38 U	8.1	0.42 U	4.2	0.29 U
			29-Jun-10	0.15 U	1.7	0.11 U	5.5	0.37 J	0.18 U	0.25 U
			19-Dec-10	0.15 U	4.2	0.11 U	12	0.67 J	7.6	0.25 U
			20-Jul-11	0.15 U	1.6	0.11 U	9.8	0.81 J	4.4	0.25 U
			15-Dec-11	0.15 U	1.2	0.11 U	1.1	0.2 U	0.47 J	0.25 U
	MWT-27	in Biowall B1	3-Jan-07	20 U	20 UJ	20 UJ	49 J	20 UJ	20 UJ	20 UJ
			16-Mar-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U
			5-Jun-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U
			15-Nov-07	10 U	10 U	10 U	10 U	10 U	10 U	10 U
			24-Jun-08	4 U	4 U	4 U	4 U	4 U	4 U	4 U
			15-Dec-08	3.6 U	1.8 U	2.9 U	1.6 U	1.3 U	2.4 U	7.5 U
			3-Jun-09	3.6 U	1.8 U	2.9 U	1.6 U	1.3 U	2.4 U	7.5 U
			16-Dec-09	1.8 U	2.3 U	1.9 U	1.9 U	2.1 U	3.1 J	1.5 U
			29-Jun-10	0.15 U	0.13 U	0.11 U	0.18 J	0.2 U	0.18 U	0.25 U
			20-Dec-10	0.15 U	0.51 J	0.11 U	1.1	0.2 U	2.1	0.25 U
			20-Jul-11	0.15 U	0.13 U	0.11 U	0.21 J	0.28 J	0.18 U	0.25 U
			14-Dec-11	0.15 UJ	0.13 U	0.11 U	1.4	0.2 U	3.0	0.25 U
	MWT-28	in Biowall B2	3-Jan-07	20 U	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ	20 UJ
			16-Mar-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U
			5-Jun-07	20 U	20 U	20 U	20 U	20 U	20 U	20 U
			15-Nov-07	5 U	5 U	5 U	5 U	5 U	5 U	5 U
			25-Jun-08	4 U	4 U	4 U	4 U	4 U	4 U	4 U
			15-Dec-08	3.6 U	1.8 U	2.9 U	1.6 U	1.3 U	2.4 U	7.5 U
			3-Jun-09	0.36 U	0.18 U	0.29 U	0.16 U	0.13 U	0.24 U	0.75 U
			18-Dec-09	1.8 U	2.3 U	1.9 U	1.9 U	2.1 U	1.2 U	1.5 U
			29-Jun-10	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U
			18-Dec-10	0.15 U	0.13 U	0.11 U	0.51 J	0.2 U	0.64 J	0.25 U
			19-Jul-11	0.15 U	0.13 U	0.11 U	0.15 U	0.2 U	0.18 U	0.25 U
			14-Dec-11	0.15 UJ	0.13 U	0.11 U	0.28 J	0.2 U	0.56 J	0.25 U
	MWT-29	downgradient of Biowall B2	3-Jan-07	2 U	22	2 U	280	6.5	140	2 U
			16-Mar-07	4 U	19	4.5 U	220	7.75	165	4.5 U
			5-Jun-07	2 U	7.6	2 U	100	2.1	81	2 U
			14-Nov-07	1 U	4.4	1 U	96	0.83 J	74	1 U
			25-Jun-08	1 U	3.3	1 U	84	0.65 J	74	1 U
			15-Dec-08	0.36 U	6.6	0.29 U	91	0.6 J	80	0.75 U
			3-Jun-09	0.36 U	4.5	0.29 U	61	0.67 J	43	0.75 U
			16-Dec-09	0.36 U	3.5	0.38 U	37	0.65 J	29	0.29 U
			30-Jun-10	0.15 U	1.3	0.26 J	78	1.1	69	0.25 U
			19-Dec-10	0.15 U	2.1	0.4 J	38	0.77 J	27	0.25 U
			20-Jul-11	0.15 U	0.79 J	0.11 U	33	1.6	43	0.25 U
Downgradient			14-Dec-11	0.15 UJ	2.4	0.11 U	8.5	0.26 J	5.9	0.25 U

Table 4
Chlorinated Organics in Groundwater
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Upgradient

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Downgradient

Sample Identification		Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)
Class GA Standard (ug/L)			5	5	5	5	5	2	5
MWT-22	downgradient of Biowall B2	3-Jan-07	2 U	5.2	2 U	130	2.7	98	2 U
		17-Mar-07	4 U	3.8 J	4 U	90	4 U	64	4 U
		6-Jun-07	1 U	6.5	1 U	120	3.2	81	1 U
		14-Nov-07	1 U	2.6	1 U	99	0.85 J	180	1 U
		25-Jun-08	5 U	3 J	5 U	68	5 U	42	5 U
		15-Dec-08	1.8 U	5.9	1.4 U	160	0.65 U	140	3.8 U
		3-Jun-09	0.36 U	2.2	0.29 U	66	0.77 J	89	0.75 U
		16-Dec-09	1.8 U	2.3 U	1.9 U	57	2.1 U	52	1.5 U
		1-Jul-10	0.15 U	0.6 J	0.12 J	41	1.3	57	0.25 U
		17-Dec-10	0.15 U	1.8	0.66 J	130	2.8	98	0.25 U
		20-Jul-11	0.15 U	0.32 J	0.11 U	23	2.0	59	0.25 U
		14-Dec-11	0.15 UJ	2.3	0.38 J	140	3.9	83	0.25 U
PT-22	between Biowalls B and C	3-Jan-07	1 U	11	1 U	57	0.86 J	22	1 U
		15-Mar-07	1 U	16	1 U	41	0.51 J	13	1 U
		5-Jun-07	1 U	8.5	1 U	61	0.72 J	32	1 U
		14-Nov-07	1 U	9.7	1 U	30	0.67 J	11	1 U
		26-Jun-08	1 U	4.1	1 U	26	0.57 J	13	1 U
		15-Dec-08	0.36 U	35	0.29 U	52	0.41 J	1.3	0.75 U
		2-Jun-09	0.36 U	6.9	0.29 U	41	0.81 J	11	0.75 U
		16-Dec-09	0.36 U	8.7	0.38 U	29	0.42 U	9.5	0.29 U
		30-Jun-10	0.15 U	4.6	0.11 U	43	0.75 J	11	0.25 U
		17-Dec-10	0.15 U	29	0.11 U	42	0.48 J	2.1	0.25 U
		22-Jul-11	0.15 U	31	0.11 U	42	0.2 U	0.18 U	0.25 U
		14-Dec-11	0.15 UJ	34	0.11 U	32	0.37 J	0.68 J	0.25 U
MWT-23	**in Biowall C2**	3-Jan-07	4 U	4 U	4 U	60	4 U	23	4 U
		16-Mar-07	4 U	4 U	4 U	11	4 U	4.8	4 U
		6-Jun-07	2 U	2 U	2 U	3.1	2 U	2 U	2 U
		16-Nov-07	7 U	7 U	2.6 U	3.6 J	7 U	7 U	7 U
		25-Jun-08	1 U	1 U	1 U	1 U	1 U	1 U	1 U
		12-Dec-08	0.36 U	0.41 J	0.29 U	2.4	0.13 U	2.8	0.75 U
		2-Jun-09	0.36 U	0.18 U	0.29 U	0.42 U	0.13 U	0.24 U	0.75 U
		15-Dec-09	0.36 U	0.46 U	0.38 U	0.47 J	0.42 U	0.24 U	0.29 U
		29-Jun-10	0.15 U	0.13 U	0.11 U	0.41 J	0.2 U	0.18 U	0.25 U
		19-Dec-10	0.15 U	0.29 J	0.11 U	4.6	0.49 J	5.3	0.52 J
		19-Jul-11	0.15 U	0.13 U	0.11 U	0.57 J	0.22 J	0.33 J	0.25 U
		14-Dec-11	0.15 UJ	0.18 J	0.11 U	2.0	0.35 J	1.85	0.33 J
MWT-24	downgradient of Biowalls C1/C2	3-Jan-07	1 U	0.94 J	1 U	210	2.1	19	0.81 J
		15-Mar-07	1 U	1 U	1 U	68	0.88 J	45	0.83 J
		5-Jun-07	2 U	2 U	2 U	19	2 U	22	1.1 J
		13-Nov-07	1 U	1.6	1 U	6.7	1 U	3.8	1 U
		26-Jun-08	5 U	5 U	5 U	31	5 U	5 U	5 U
		12-Dec-08	0.36 U	[redacted]	0.29 U	52	0.13 U	3.6	0.75 U
		2-Jun-09	0.36 U	4.8	0.29 U	38	0.13 U	7.3	0.75 U
		15-Dec-09	0.36 U	4.7	0.7 J	32	0.42 U	4	0.29 U
		1-Jul-10	0.15 U	5	0.11 U	31	0.41 J	7.5	0.79 J
		17-Dec-10	0.15 U	3.3	0.11 U	23	1	4.3	0.58 J
		21-Jul-11	0.15 U	5.6	0.11 U	39	1.6	17	0.25 U
		13-Dec-11	0.15 U	3.1	0.11 U	16	0.39 J	2.3	0.44 J
PT-17	downgradient of biowalls	2-Jan-07	1 U	6	1 U	62	1 U	21	1 U
		15-Mar-07	2 U	11	2 U	26	2 U	21	2 U
		5-Jun-07	1 U	3.4	1 U	43	0.77 J	9.9	1 U
		13-Nov-07	1 U	15	1 U	27	0.54 J	22	1 U
		26-Jun-08	1 U	8.5	1 U	21	1 U	23	1 U
		11-Dec-08	0.36 U	9.2	0.29 U	24	0.46 J	10	0.75 U
		2-Jun-09	0.36 U	8	0.29 U	56	1.1	55	0.75 U
		15-Dec-09	0.36 U	7.8	0.38 U	65	1.8	20	0.29 U
		1-Jul-10	0.15 U	3	0.24 J	81	3.2	53	0.25 U
		18-Dec-10	0.15 U	8.1	0.42 J	39	2.2	16	0.25 U
		21-Jul-11	1 U	4.5	0.11 U	94	7.0	56	0.25 UJ
		13-Dec-11	0.15 U	11	0.11 U	25	1.8	12	0.25 U
MWT-7	immed. upgradient of ZVI wall	4-Jan-07	1 U	490	1 U	35	1 U	0.51 J	1 U
		15-Mar-07	1 U	440	1 U	42	1 U	9.7	1 U
		5-Jun-07	1 U	410	1 U	61	1 U	18	1 U
		13-Nov-07	1 U	510	1 U	90	1 U	24	1 U
		25-Jun-08	1 U	440	1 U	90	1 U	12	1 U
		15-Dec-08	0.36 U	410	0.29 U	79	0.13 U	13	0.75 U
		2-Jun-09	0.36 U	330	0.29 U	68	0.13 U	9.3	0.75 U
		15-Dec-09	0.36 U	350	0.38 U	140	0.55 J	21	0.48 J
		1-Jul-10	0.15 U	330	0.78 J	170	0.91 J	15	0.25 U
		18-Dec-10	0.15 U	310	0.98 J	120	0.75 J	15	0.25 U
		22-Jul-11	0.15 U	0.52 J	0.11 U	12	0.34 J	2.6	0.94 J
		13-Dec-11	0.15 U	2.3	0.11 U	56	0.24 J	4.3	1.2

Table 4
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	Sample Identification		Sample Date	PCE (ug/L)	TCE (ug/L)	1,1-DCE (ug/L)	cis-DCE (ug/L)	trans-DCE (ug/L)	VC (ug/L)	1,1-DCA (ug/L)
		Class GA Standard (ug/L)		5	5	5	5	5	2	5
Upgradient	PT-24	downgradient of ZVI wall	2-Jan-07	1 U	4	1 U	54	0.86 J	0.6 J	0.68 J
			15-Mar-07	1 U	2.8	1 U	38	0.81 J	1 U	1 U
			5-Jun-07	1 U	3.1	1 U	60	1.6	2.6	0.75 J
			13-Nov-07	1 U	3.8	1 U	39	1 U	1 U	0.56 J
			26-Jun-08	1 U	2.4	1 U	48	1.1	1.9	0.69 J
			12-Dec-08	0.36 U	2.2	0.29 U	34	0.36 J	0.26 J	0.75 U
			2-Jun-09	0.36 U	1.7	0.29 U	32	0.83 J	2	0.75 U
			15-Dec-09	0.36 U	1.7	0.38 U	28	0.61 J	1.6	0.29 U
			30-Jun-10	0.15 U	0.39 J	0.11 U	33	1.1	3.8	0.54 J
			17-Dec-10	0.15 U	0.53 J	0.11 U	30	1.4	7.7	0.54 J
			21-Jul-11	0.15 U	0.38 J	0.11 U	37	1.4	7.9	0.78 J
			13-Dec-11	0.15 U	0.82 J	0.11 U	21	0.63 J	2.9	0.48 J
	MW-56	off-site well	4-Jan-07	1 U	1 U	1 U	1.2	1 U	1 U	1 U
			6-Jun-07	1 U	1 U	1 U	1.7	1 U	1 U	1 U
			26-Jun-08	1 U	1 U	1 U	1.3	1 U	1 U	1 U
			11-Dec-08	0.36 U	0.33 J	0.29 U	0.4 J	0.13 U	0.24 U	0.75 U
			4-Jun-09	0.36 U	0.18 U	0.29 U	1	0.13 U	0.24 U	0.75 U
			18-Dec-09	0.36 U	0.46 U	0.38 U	0.56 J	0.42 U	0.24 U	0.29 U
			1-Jul-10	0.15 U	0.13 U	0.11 U	0.61 J	0.2 U	0.18 U	0.25 U
			19-Dec-10	0.15 U	0.13 U	0.11 U	0.86 J	0.2 U	0.18 U	0.25 U
Downgradient			4-Oct-11	0.15 U	0.13 U	0.11 U	2.3	0.2 U	0.18 U	0.25 U
			12-Dec-11	0.15 U	0.13 U	0.11 U	0.95 J	0.2 U	0.18 U	0.25 U

Notes:

1. Sample duplicate pairs were collected at MWT-28 in Jan-07 and June-10; MWT-29 in Mar-07, Jun-08, and Dec-09; MWT-27 in Jun-07, Dec-08, Dec-09, July-11; and MWT-23 in Nov-07, Dec-10, and Dec-11. If an analyte was detected in the sample but not detected in the duplicate (or vice versa) the non-detect value was taken at half the detection limit averaged with the detect value.
2. Wells in bold are the biowall process monitoring wells.
3. Grey shading indicates that the concentration was detected above its Class GA groundwater standard. The Class GA Groundwater standard for TCE and cis-DCE is 5 ug/L; for VC the Class GA standard is 2 ug/L.

U = compound was not detected.
J = the reported value is an estimated concentration.
UJ = the compound was not detected; the associated reporting limit is approximate.

Table 5
Groundwater Trends
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Sampled Wells	Location		TCE	cis-1,2-DCE	VC
PT-18A	upgradient of walls	Sample Date: 15-Dec-11 Trend:	7.3 Decreasing	0.53 J Compliant	0.18 U Compliant
MWT-25	upgradient of Biowall A	Sample Date: 15-Dec-11 Trend:	1.6 Compliant	0.3 J Compliant	0.18 U Compliant
MWT-26	upgradient of Biowalls B1/B2	Sample Date: 15-Dec-11 Trend:	1.2 Compliant	1.1 Compliant	0.47 J Compliant
MWT-27	in Biowall B1	Sample Date: 14-Dec-11 Trend:	0.13 J Compliant	1.4 Compliant	3 No Trend
MWT-28	in Biowall B2	Sample Date: 14-Dec-11 Trend:	0.13 U Compliant	0.28 J Compliant	0.56 J Compliant
MWT-29	downgradient of Biowall B2	Sample Date: 14-Dec-11 Trend:	2.4 Compliant	8.5 Decreasing	5.9 Decreasing
MWT-22	downgradient of Biowall B2	Sample Date: 14-Dec-11 Trend:	2.3 Compliant	140 No Trend	83 Decreasing
PT-22	between Biowalls B and C	Sample Date: 14-Dec-11 Trend:	34 Increasing	32 Decreasing	0.68 J Compliant
MWT-23[1]	in Biowall C2	Sample Date: 14-Dec-11 Trend:	0.18 J Compliant	2 Compliant	1.9 Compliant
MWT-24	downgradient of Biowalls C1/C2	Sample Date: 13-Dec-11 Trend:	3.1 Compliant	16 Decreasing	2.3 Decreasing
PT-17	downgradient of biowalls	Sample Date: 13-Dec-11 Trend:	11 No Trend	25 Decreasing	12 No Trend
MWT-7	immed. upgradient of ZVI wall	Sample Date: 13-Dec-11 Trend:	2.3 Compliant	56 Increasing	4.3 No Trend
PT-24	downgradient of ZVI wall	Sample Date: 13-Dec-11 Trend:	0.82 J Compliant	21 Decreasing	2.9 Decreasing
MW-56	off-site well	Sample Date: 15-Dec-11 Trend:	0.13 U Compliant	0.95 J Compliant	0.18 U Compliant

Notes:

1. The concentrations presented were an average of the sample duplicate pair.
2. Overall concentrations follow a decreasing trend; however further monitoring is needed to elucidate the dates at which compounds can be expected to reach groundwater standards.

U = compound was not detected.

J = the reported value is an estimated concentration.

FIGURES

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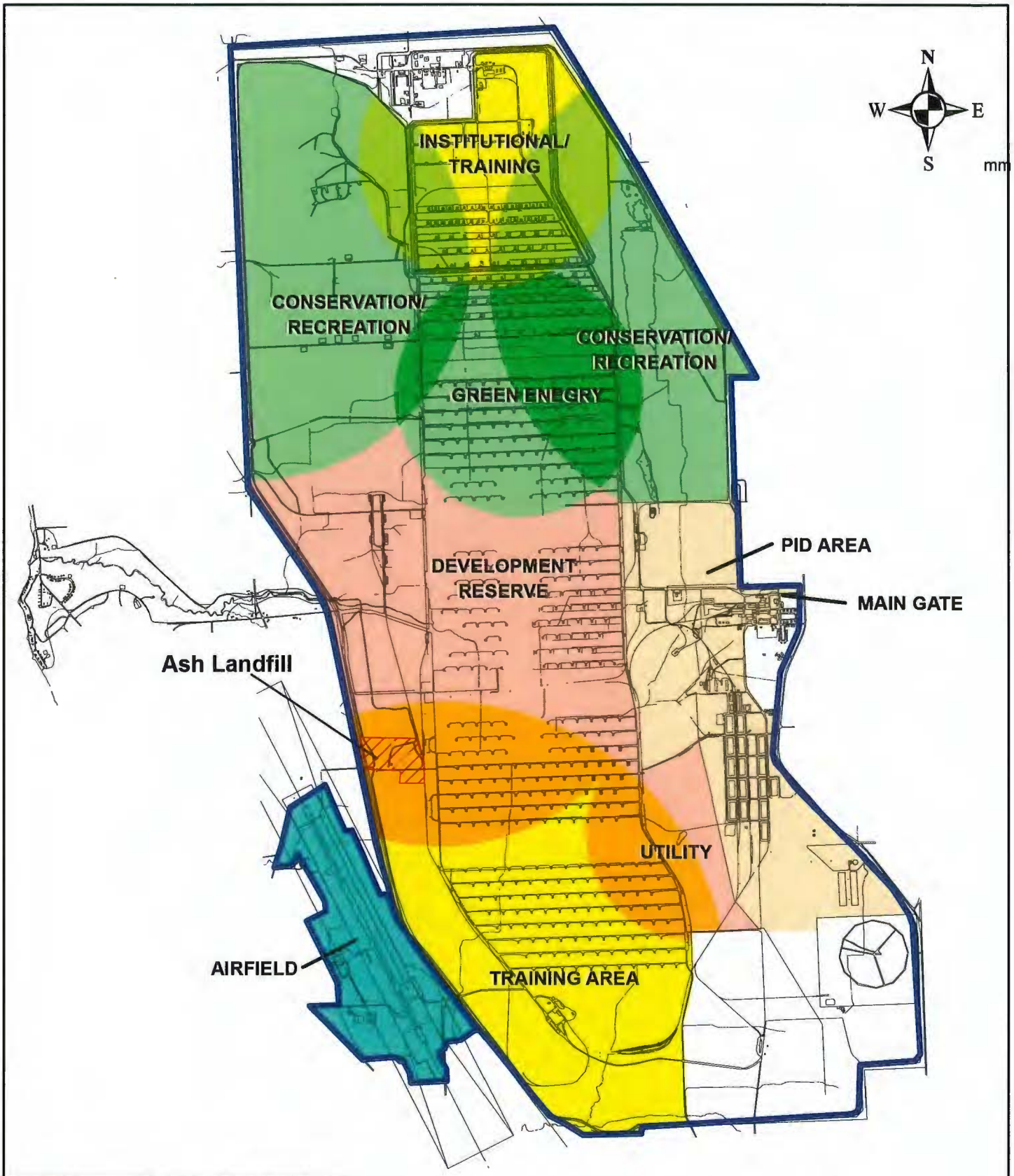

PARSONS

SENECA ARMY DEPOT ACTIVITY

ASH LANDFILL ANNUAL REPORT

FIGURE 1

ASH LANDFILL LOCATION AT SEDA

MAY 2012

Seneca Army Depot Boundary

Ash Landfill (SEADs 3, 6, 8, 14 & 15)
Operational Unit Boundary

Path: P:\PIT\Projects\Huntsville Cont W912DY-08-D-0003\TO#01 - LTM Ash Landfill\Annual Report Y4\Figures\Ash_SEDA_Loc_Map.mxd

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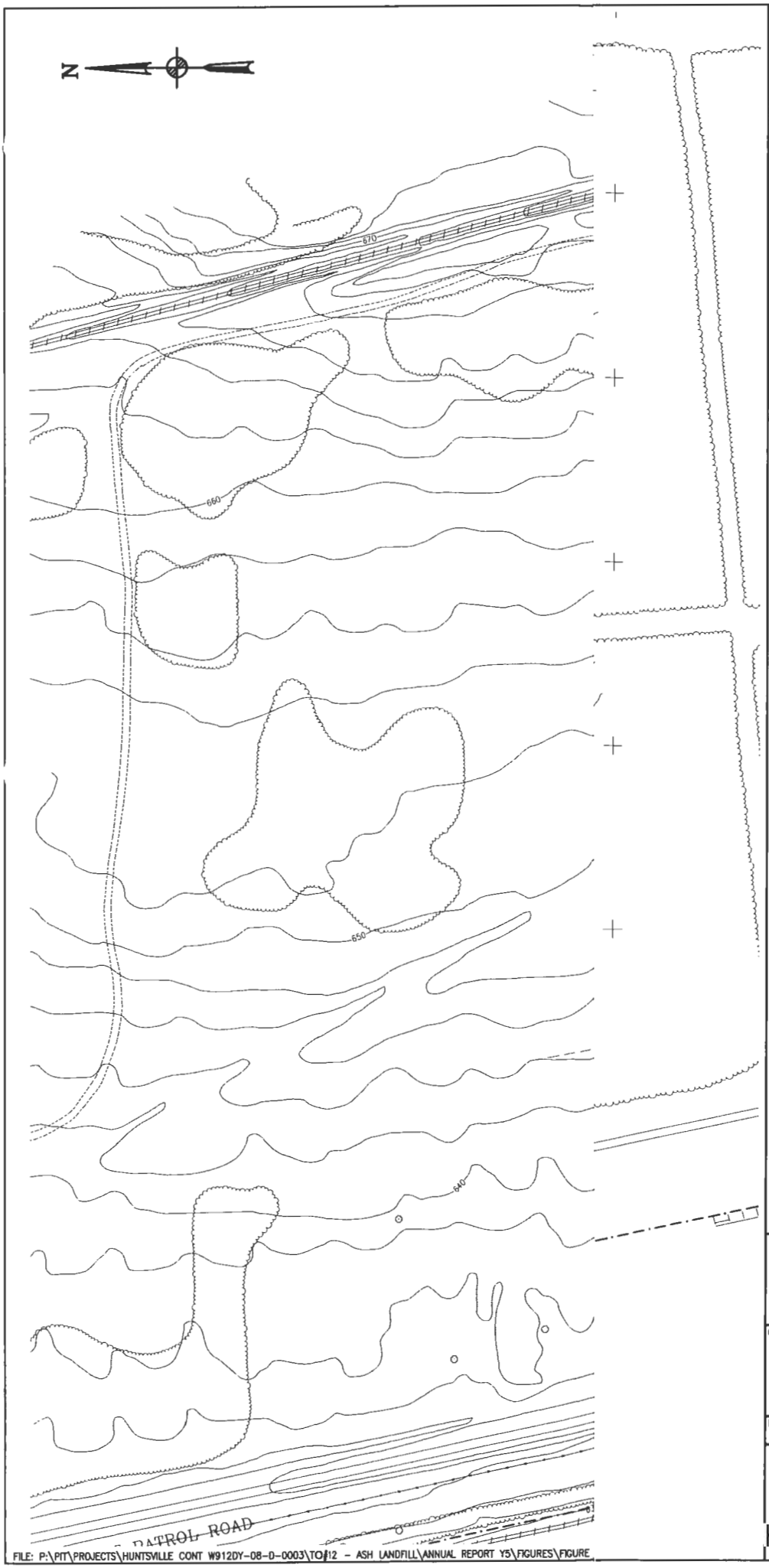


LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION (650)
- TREE
- WETLAND & DESIGNATION (W-B)
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT (SEAD-1 EL.630.90')
- MONITORING WELL AND DESIGNATION (PT-22)
- RAILROAD TRACKS
- WATER MAIN
- POST CONSTRUCTION AS BUILT GROUND ELEVATION CONTOUR (670)
- PILOT STUDY BIOWALL (2005)
- SINGLE BIOWALL (2006)
- DOUBLE-WIDE BIOWALL (2006)
- ZERO VALENT IRON WALL (1998)
- LIMITS OF LANDFILL
- SEDA PROPERTY BOUNDARY
- OU BOUNDARY

100 0 100 200
(feet)

PARSONS

CLIENT/PROJECT TITLE

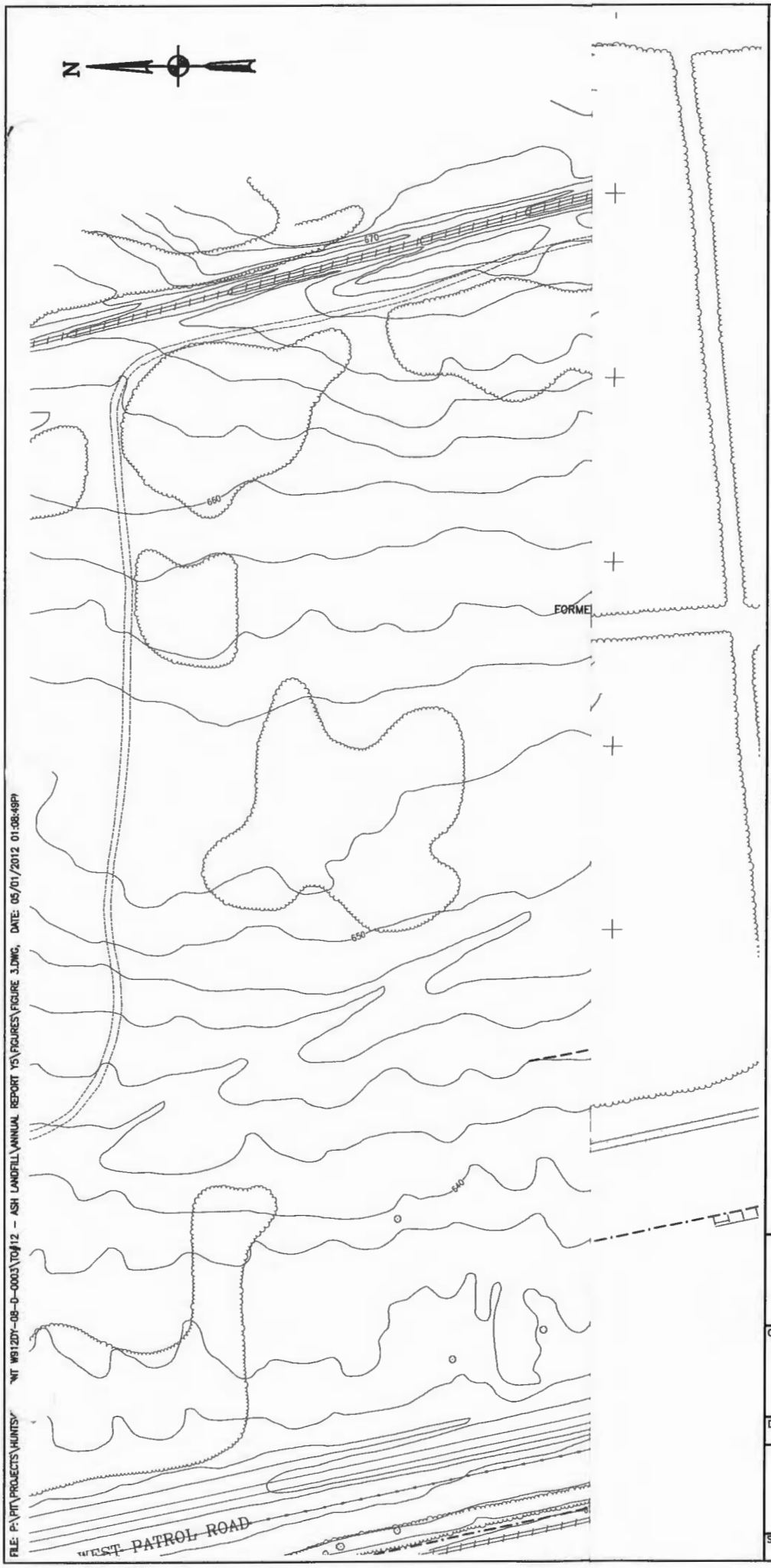
SENECA ARMY DEPOT
ASH LANDFILL
ASH LANDFILL ANNUAL REPORT

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No.

FIGURE 2
ASH LANDFILL
SITE PLAN

SCALE | DATE MAY 2012 | REV -

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#12 - ASH LANDFILL\ANNUAL REPORT Y5\FIGURES\FIGURE



LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION (650)
- TREE
- WETLAND & DESIGNATION (W-8)
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT (SEAD-1 EL.630.90')
- MONITORING WELL AND DESIGNATION (PT-22)
- RAILROAD TRACKS
- WATER MAIN
- APPROXIMATE EXTENT OF IRM SOIL TREATMENT AND EXCAVATION
- APPROXIMATE AREA REQUIRING LAND USE CONTROLS
- SEDA PROPERTY BOUNDARY
- OU BOUNDARY

NOTE:
FIGURE SHOWS PRE-CONSTRUCTION CONDITIONS

100 0 100 200
(feet)

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT
ASH LANDFILL
ASH LANDFILL ANNUAL REPORT

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	

FIGURE 3
ASH LANDFILL
HISTORIC SITE MAP

SCALE	DATE	REV
	MAY 2012	

FILE: P:\PIT\PROJECTS\HUNTSV\WT W91207-08-D-0003\TO#12 - ASH LANDFILL\ANNUAL REPORT YS\FIGURES\FIGURE 3.DWG, DATE: 05/01/2012 01:08:49PM

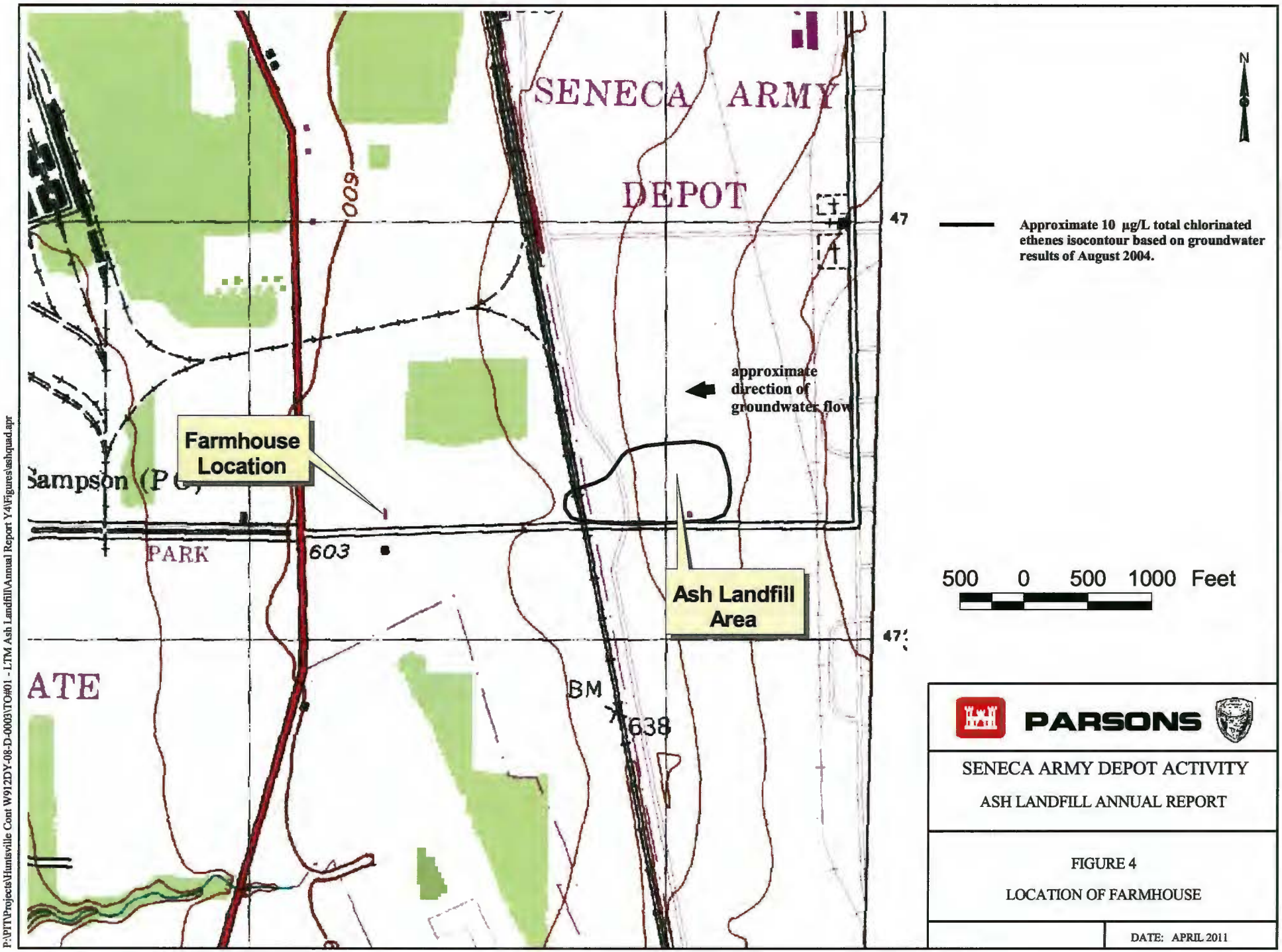
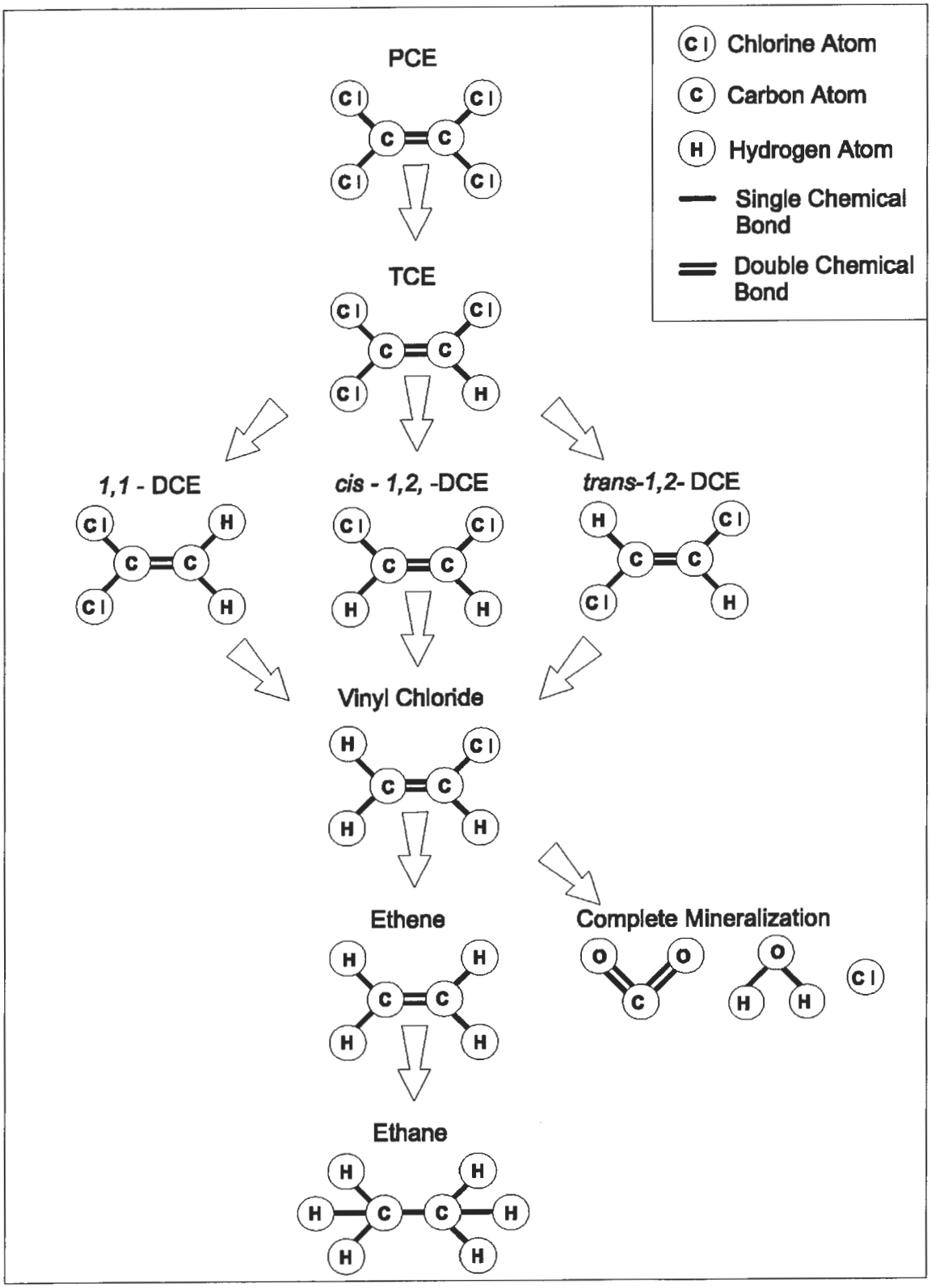
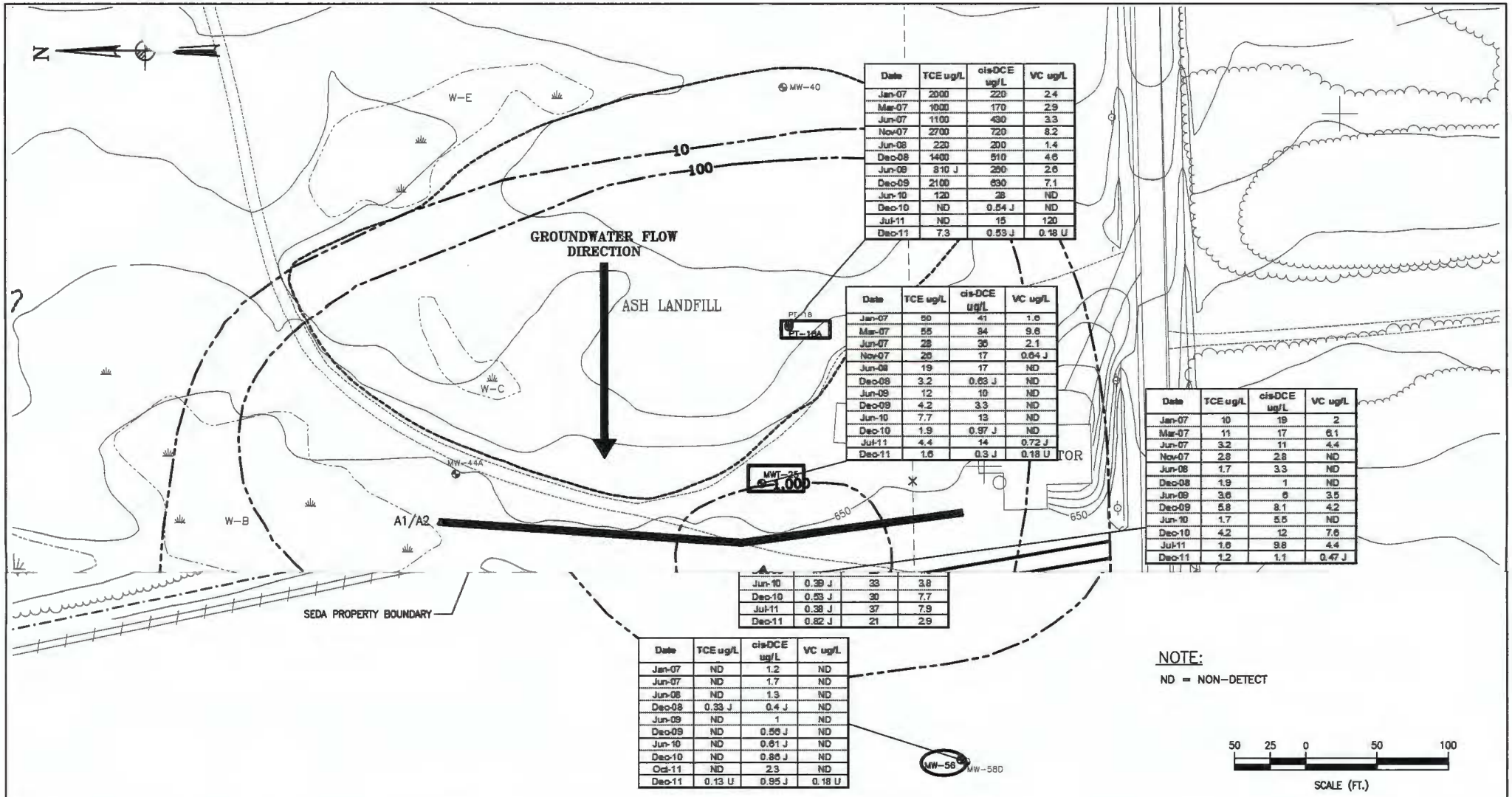

SENECA ARMY
DEPOT
600
47
603
638
BM
PARK
ATE
Farmhouse Location
Ash Landfill Area
approximate direction of groundwater flow
Approximate 10 µg/L total chlorinated ethenes isocontour based on groundwater results of August 2004.
N
500 0 500 1000 Feet
PARSONS
SENECA ARMY DEPOT ACTIVITY
ASH LANDFILL ANNUAL REPORT
FIGURE 4
LOCATION OF FARMHOUSE
DATE: APRIL 2011
P:\PIT\Projects\Huntsville Cont W912DY-08-D-0003\TO#01 - LTM Ash Landfill\Annual Report Y4\Figures\ashquad.apr

Figure 5
Reductive Dechlorination of Chlorinated Ethenes
Ash Landfill Annual Report
Seneca Army Depot Activity



(USEPA, 1998)



Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Jan-07	2000	220	2.4
Mar-07	1000	170	2.9
Jun-07	1100	430	3.3
Nov-07	2700	720	8.2
Jun-08	220	200	1.4
Dec-08	1400	510	4.6
Jun-09	810 J	260	2.6
Dec-09	2100	690	7.1
Jun-10	120	28	ND
Dec-10	ND	0.54 J	ND
Jul-11	ND	15	120
Dec-11	7.3	0.53 J	0.18 U

Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Jan-07	50	41	1.6
Mar-07	55	84	9.6
Jun-07	28	36	2.1
Nov-07	20	17	0.64 J
Jun-08	19	17	ND
Dec-08	3.2	0.63 J	ND
Jun-09	12	10	ND
Dec-09	4.2	3.3	ND
Jun-10	7.7	13	ND
Dec-10	1.9	0.97 J	ND
Jul-11	4.4	14	0.72 J
Dec-11	1.6	0.3 J	0.18 U

Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Jan-07	10	19	2
Mar-07	11	17	6.1
Jun-07	3.2	11	4.4
Nov-07	2.8	2.8	ND
Jun-08	1.7	3.3	ND
Dec-08	1.9	1	ND
Jun-09	3.6	6	3.5
Dec-09	5.8	8.1	4.2
Jun-10	1.7	5.5	ND
Dec-10	4.2	12	7.6
Jul-11	1.8	9.8	4.4
Dec-11	1.2	1.1	0.47 J

Jun-10	0.39 J	33	3.8
Dec-10	0.53 J	30	7.7
Jul-11	0.38 J	37	7.9
Dec-11	0.82 J	21	2.9

Date	TCE ug/L	cis-DCE ug/L	VC ug/L
Jan-07	ND	1.2	ND
Jun-07	ND	1.7	ND
Jun-08	ND	1.3	ND
Dec-08	0.33 J	0.4 J	ND
Jun-09	ND	1	ND
Dec-09	ND	0.56 J	ND
Jun-10	ND	0.61 J	ND
Dec-10	ND	0.86 J	ND
Oct-11	ND	2.3	ND
Dec-11	0.13 U	0.95 J	0.18 U

NOTE:

ND = NON-DETECT

50 25 0 50 100

SCALE (FT.)

LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- MONITORING WELL AND DESIGNATION
- RAILROAD TRACKS
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- APPROXIMATE LOCATION OF WATER MAIN
- PILOT STUDY BIOWALL (2005)
- SINGLE BIOWALL (2006)
- DOUBLE-WIDE BIOWALL (2006)
- ZERO VALENT IRON WALL (1998)
- GROUNDWATER ISOCONTOUR (UG/L) BASED ON JANUARY 2000 DATA
- OFF-SITE PERFORMANCE MONITORING WELL IN L.T.M. PROGRAM
- ON-SITE PLUME PERFORMANCE MONITORING WELL IN L.T.M. PROGRAM
- BIOWALL PROCESS MONITORING WELL IN L.T.M. PROGRAM

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT

ASH LANDFILL

LONG TERM MONITORING REPORT

DEPT. ENVIRONMENTAL ENGINEERING | Dwg. No.

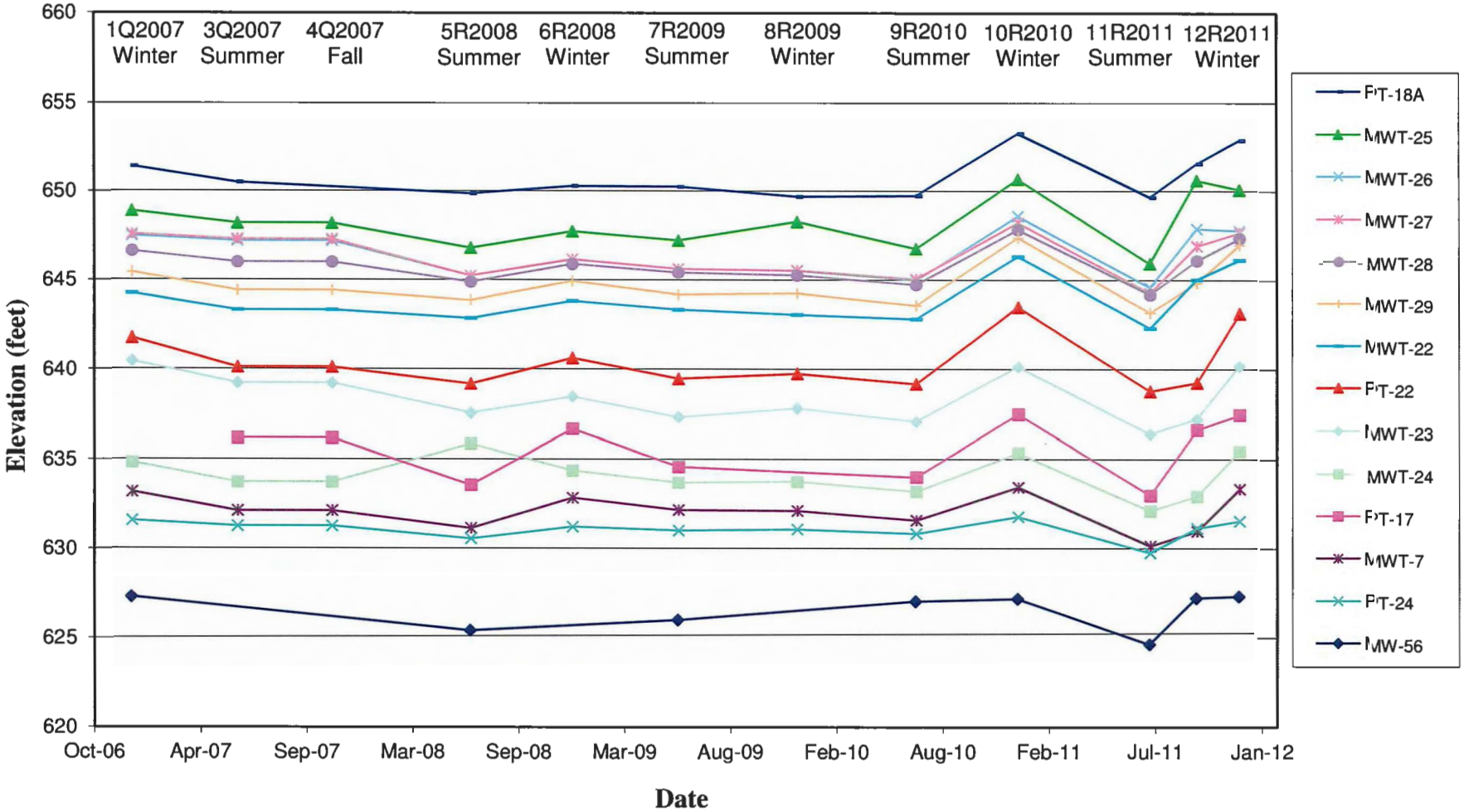
FIGURE 6

CHLORINATED ETHENES CONCENTRATIONS IN GROUNDWATER

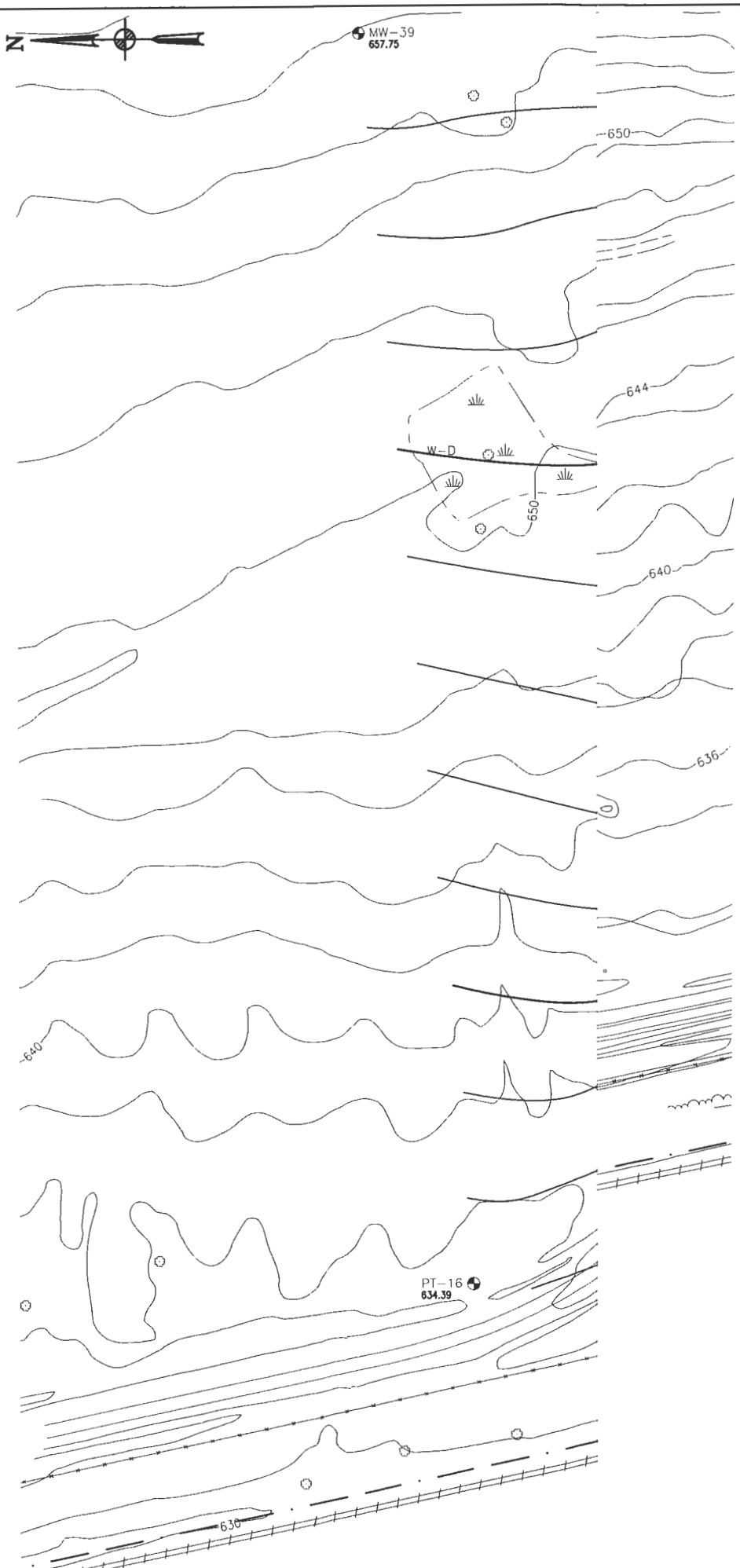
SCALE | DATE MAY 2012 | REV -

FILE: P:\PIT\PROJECTS\HUNTSVILLE CONT W912DY-08-D-0003\TO#12 - ASH LANDFILL\ANNUAL REPORT YS\FIGURES\FIGURE 6.DWG, DATE: 05/01/2012 12:59:43PM, p001489A

Figure 7
Groundwater Elevations
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note: Groundwater levels were measured on: December 12-15, 2006; June 4, 2007; November 7, 2007; June 23, 2008; December 23, 2008; June 1, 2009; December 14, 2009; June 28, 2010, December 13, 2010, and December 12, 2011. In Round 11, Groundwater levels were collected on July 18, 2011, and again on October 3, 2011 when Parsons returned to sample MW-56. Groundwater elevations were not measured at well MW-56 during 3Q2007, 4Q2007, 6R2008, or 8R2009; at PT-17 during 1Q2007 or 8R2008; or at PT-18A during 4Q2007. Groundwater levels were not recorded during 2Q2007.



LEGEND:

- PAVED ROAD
- DIRT ROAD
- GROUND CONTOUR AND ELEVATION
- TREE
- WETLAND & DESIGNATION
- MONITORING WELL AND DESIGNATION
- RAILROAD TRACKS
- BRUSH
- CHAIN LINK FENCE
- UTILITY POLE
- APPROXIMATE LOCATION OF FIRE HYDRANT
- FUEL OR UNDERGROUND STORAGE TANK
- SURVEY MONUMENT
- ABANDONED MONITORING WELL
- APPROXIMATE LOCATION OF WATER MAIN
- PILOT STUDY BIOWALL (2005)
- SINGLE BIOWALL (2006)
- DOUBLE-WIDE BIOWALL (2006)
- ZERO VALENT IRON WALL (1998)
- GROUNDWATER CONTOUR
- GROUNDWATER FLOW DIRECTION

70 0 70 140
(FEET)

PARSONS

CLIENT/PROJECT TITLE

SENECA ARMY DEPOT
ASH LANDFILL
LONG TERM MONITORING REPORT

DEPT.	Dwg. No.
ENVIRONMENTAL ENGINEERING	

FIGURE 8
ASH LANDFILL GROUNDWATER CONTOURS & GROUNDWATER FLOW DIRECTION DEC. 2011

SCALE	DATE	REV
	MAY 2012	–

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Figure 9A
Concentrations of VOCs Along the Biowalls - Quarter 1, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

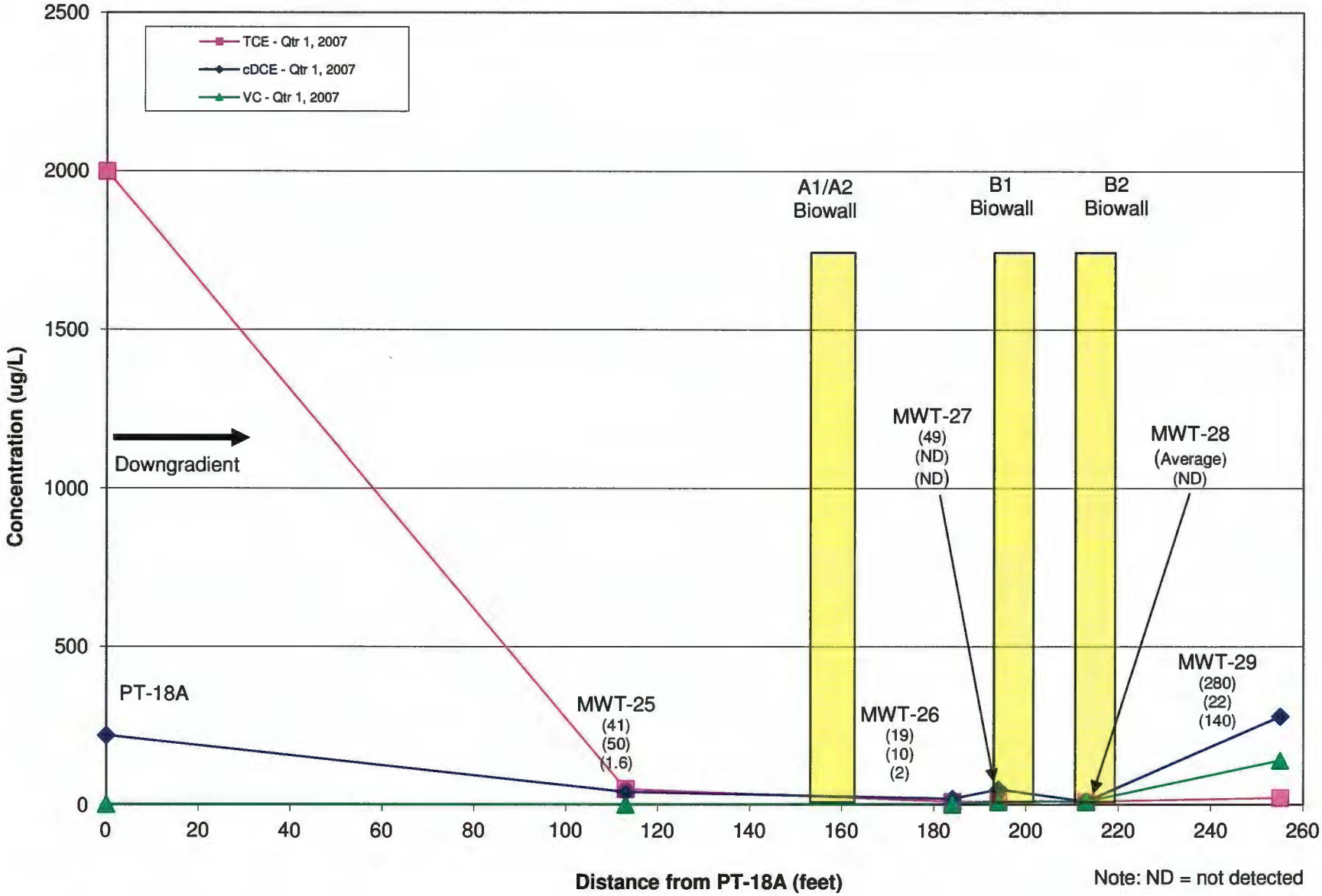


Figure 9B
Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

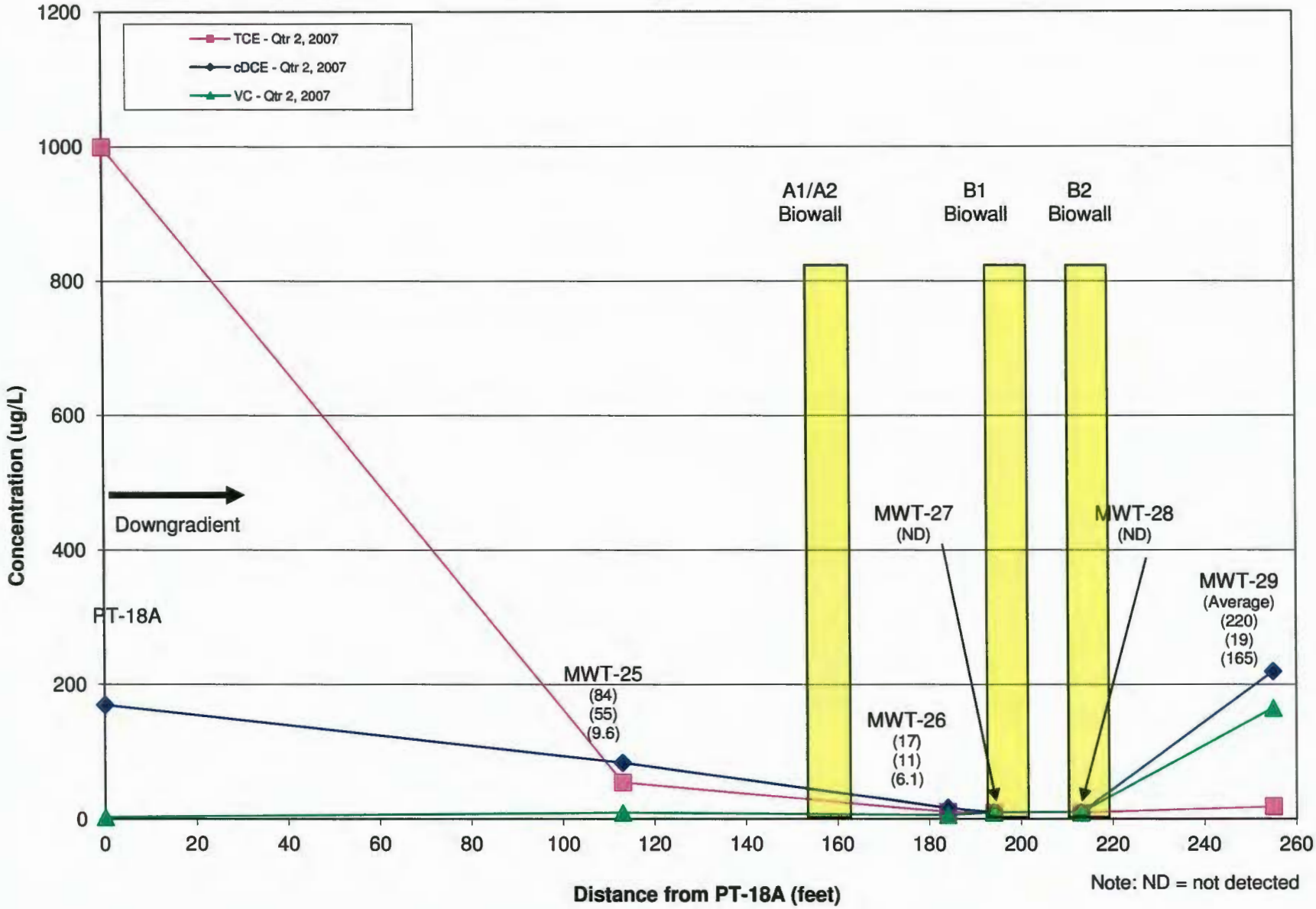


Figure 9C
Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

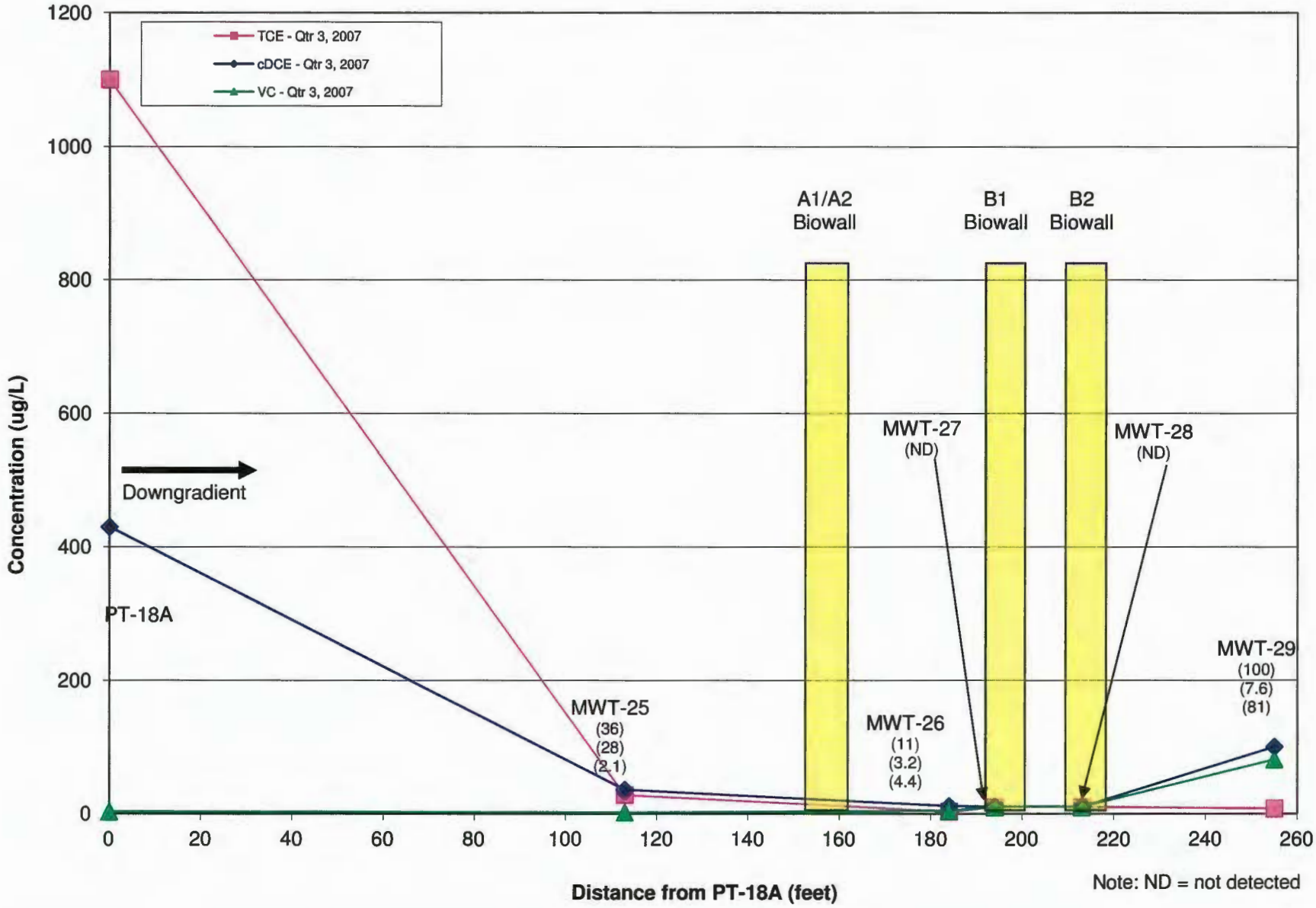


Figure 9D
Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

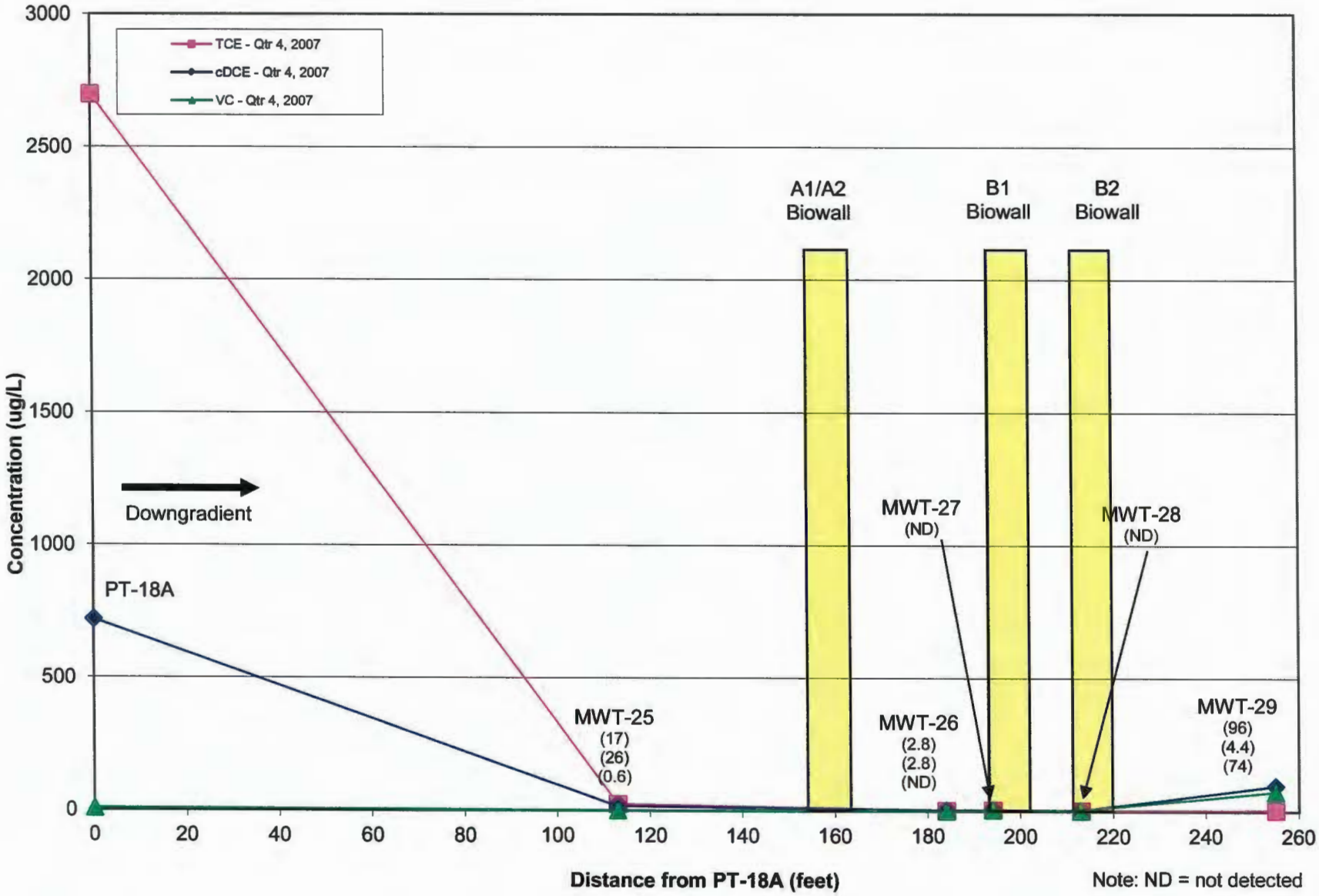


Figure 9A
Concentrations of VOCs Along the Biowalls - Quarter 1, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

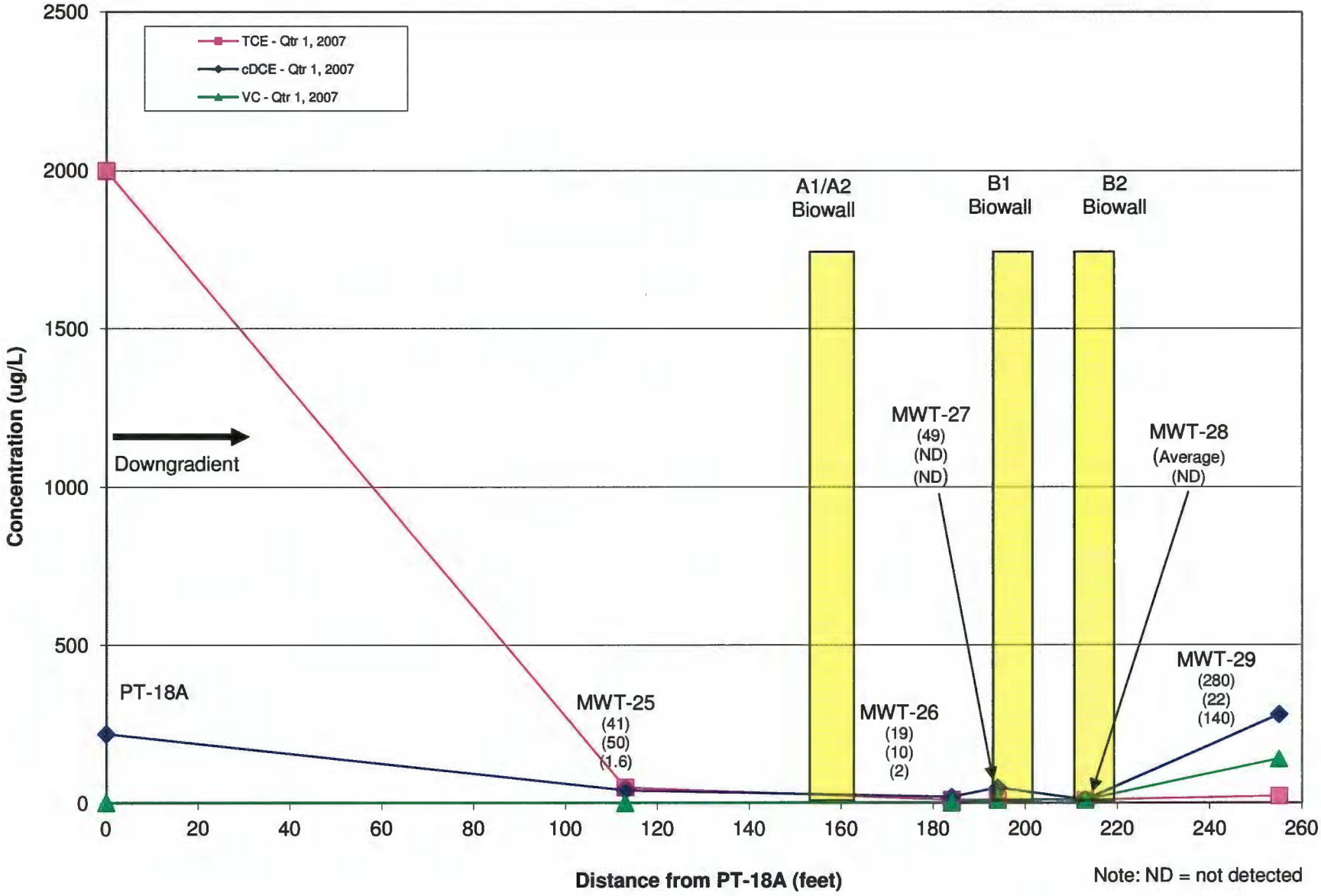
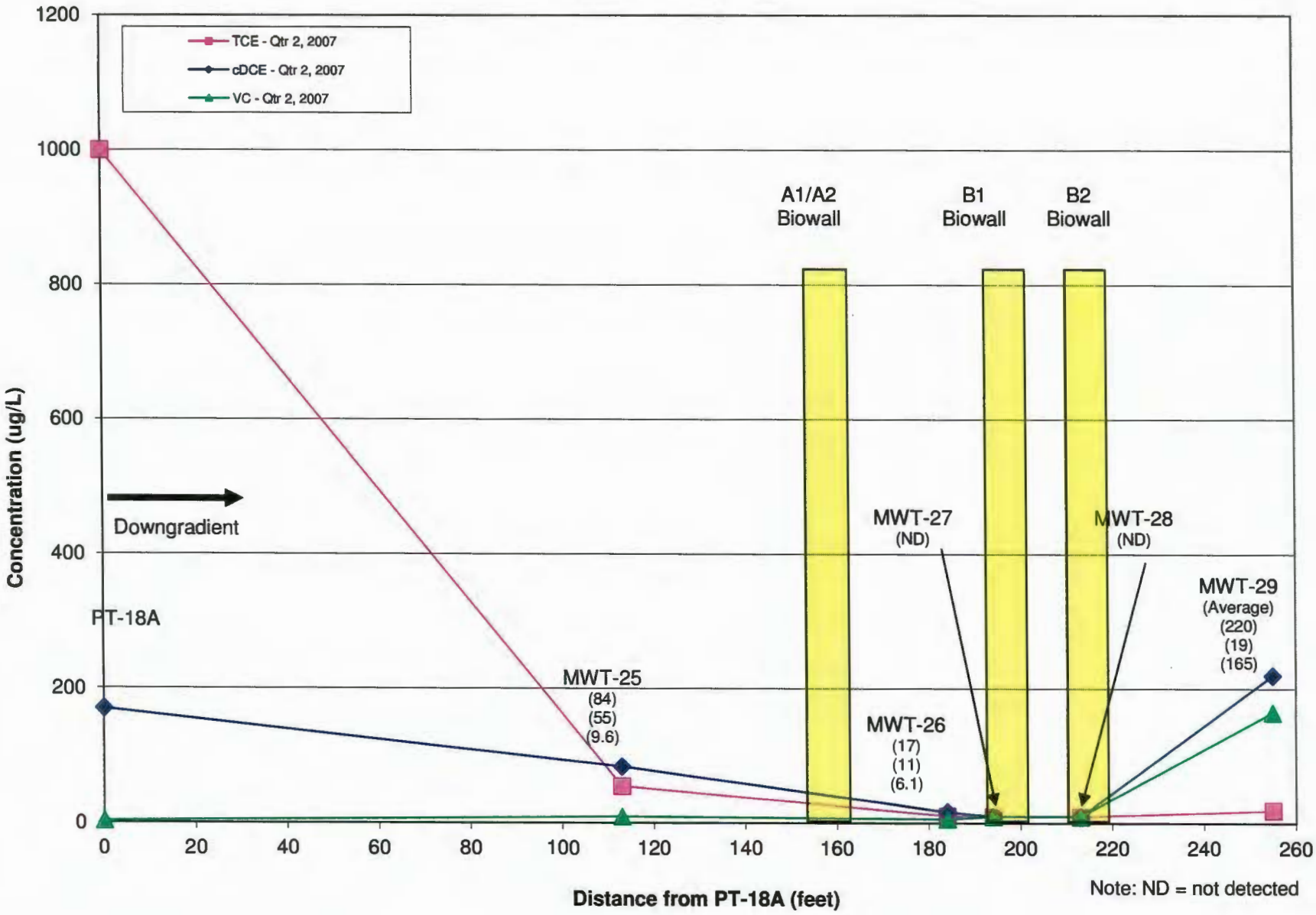


Figure 9B
Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



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5/1/2012

Figure 9C
Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

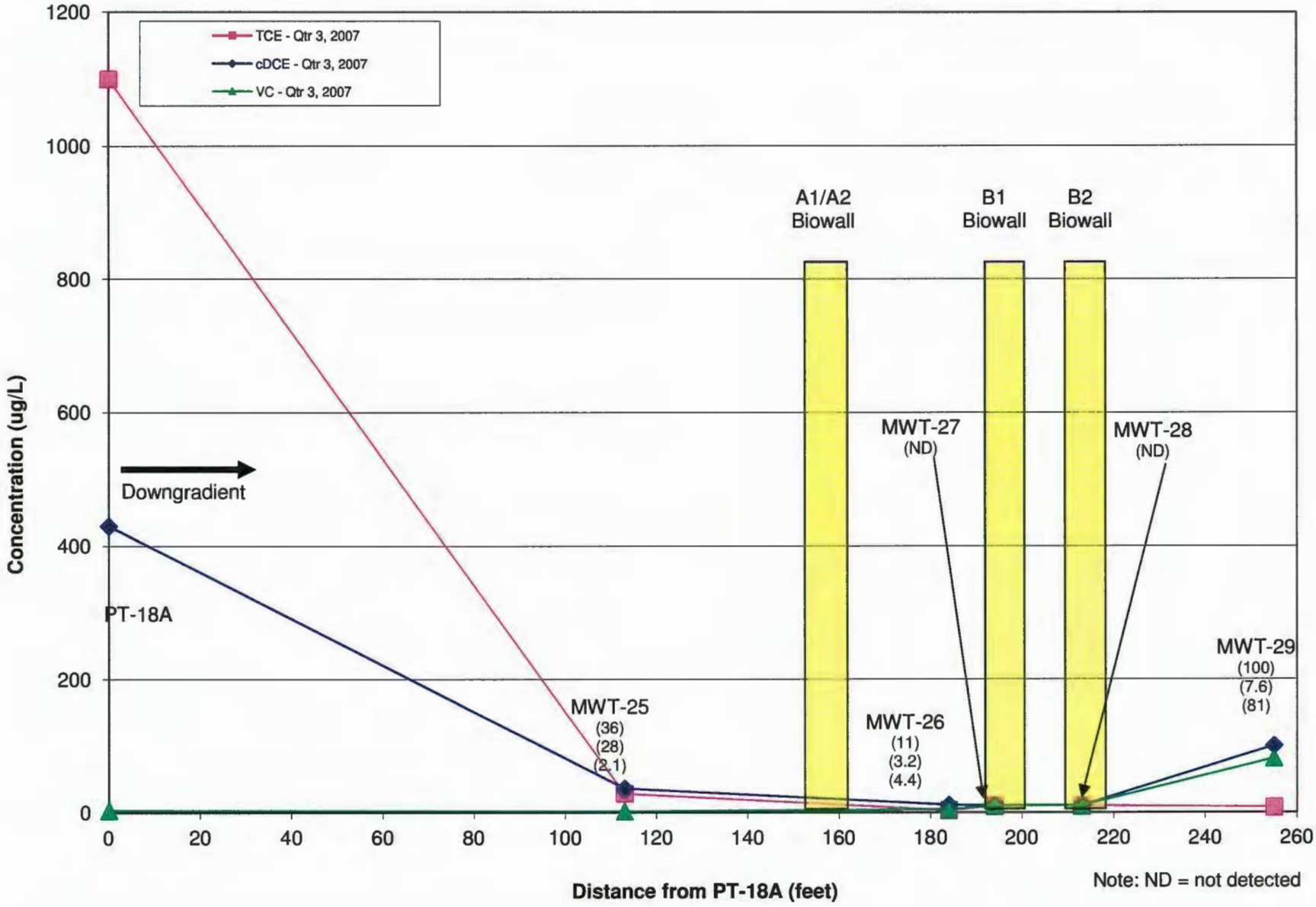


Figure 9D
Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

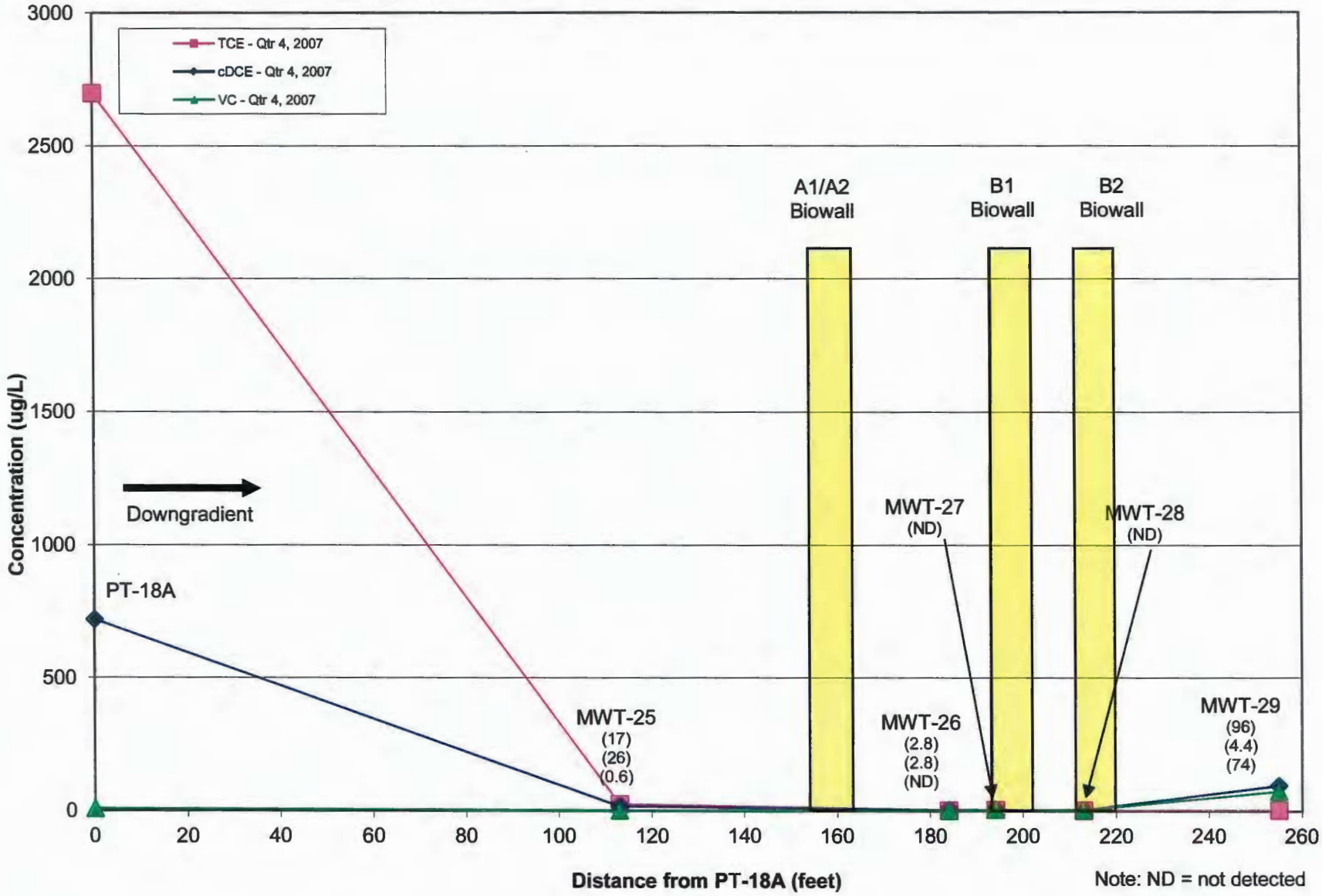


Figure 9E
Concentrations of VOCs Along the Biowalls - Round 5, 2008
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

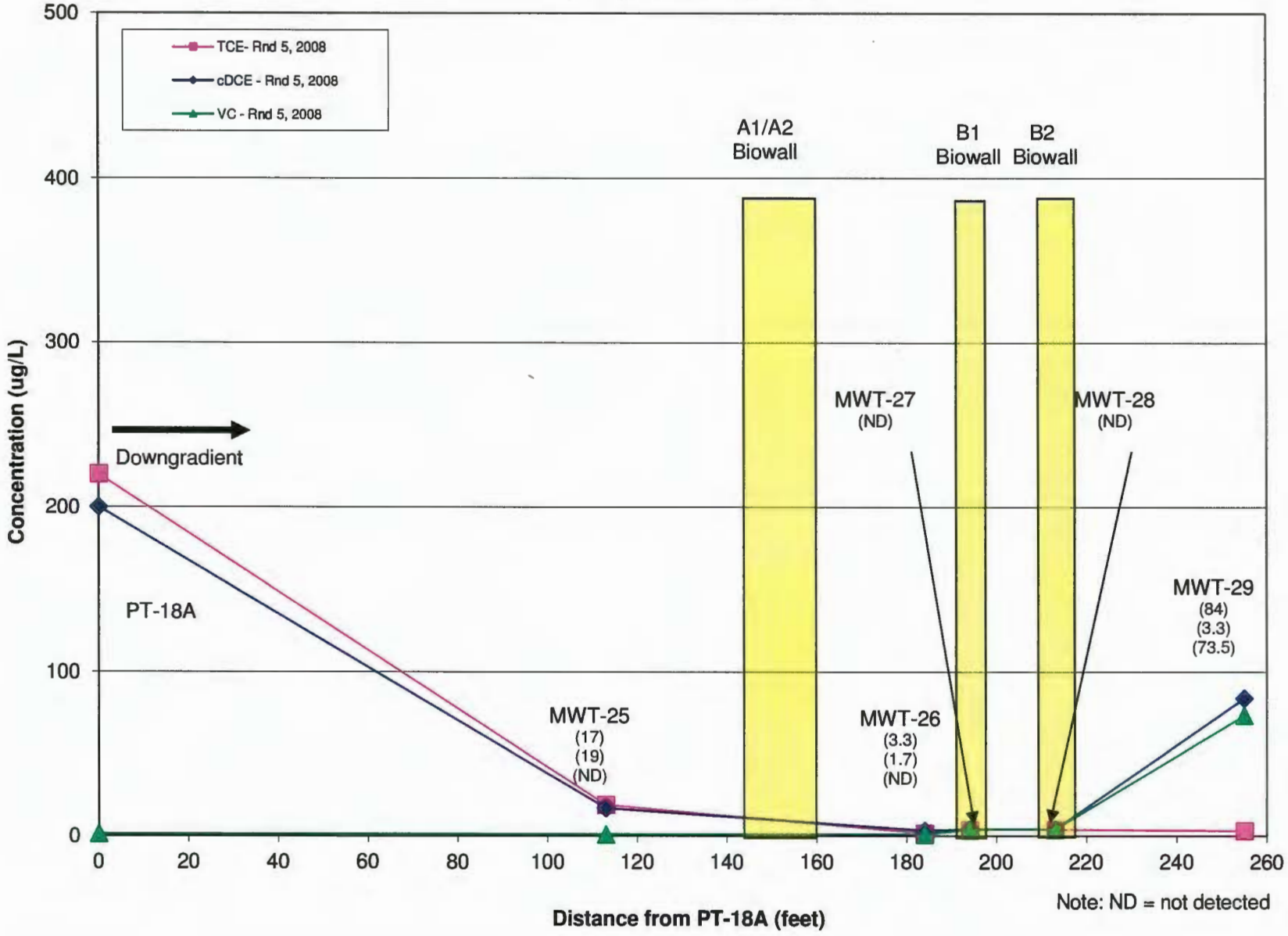


Figure 9F
Concentrations of VOCs Along the Biowalls - Round 6, 2008
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

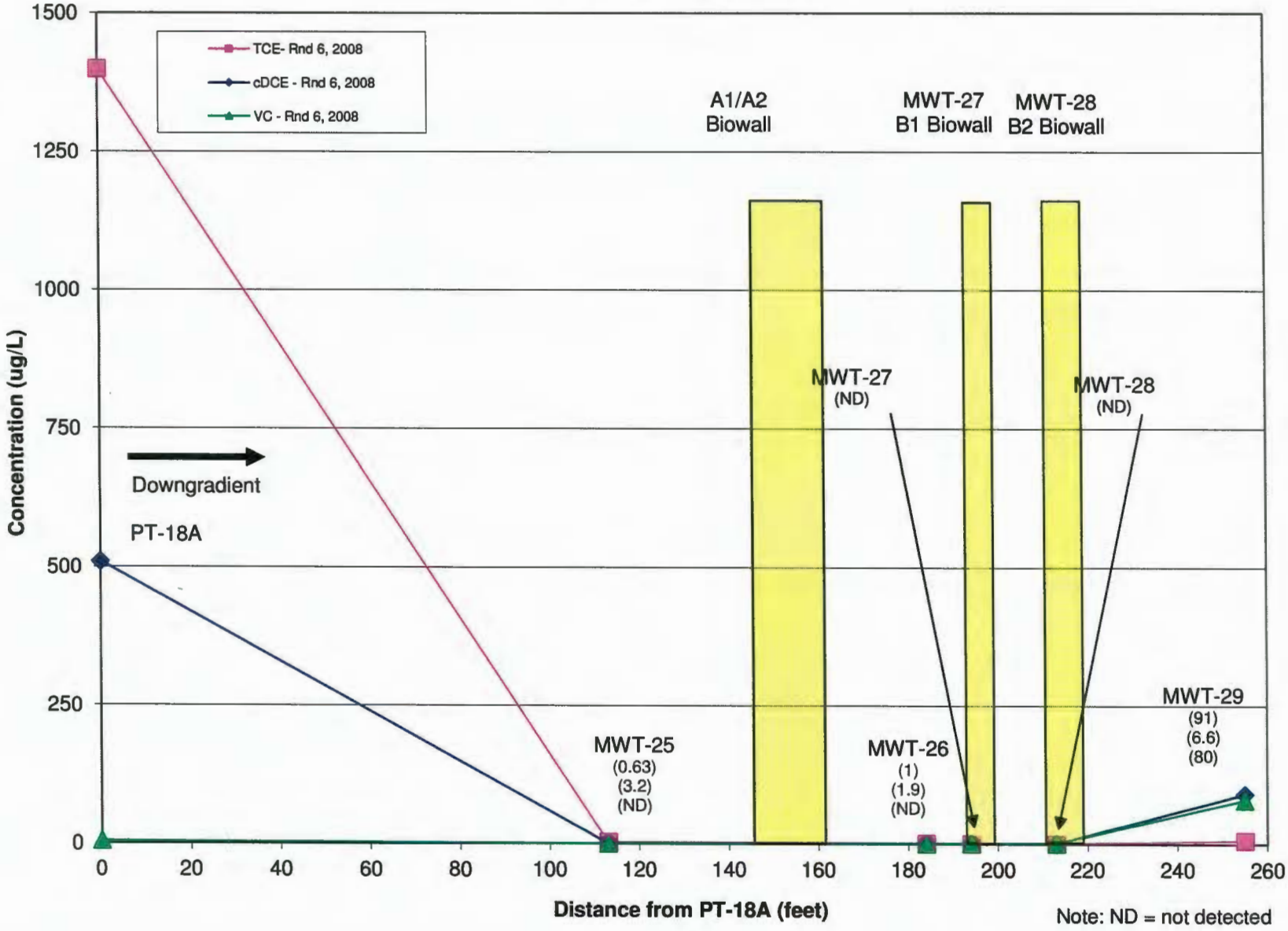


Figure 9G
Concentrations of VOCs Along the Biowalls - Round 7, 2009
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

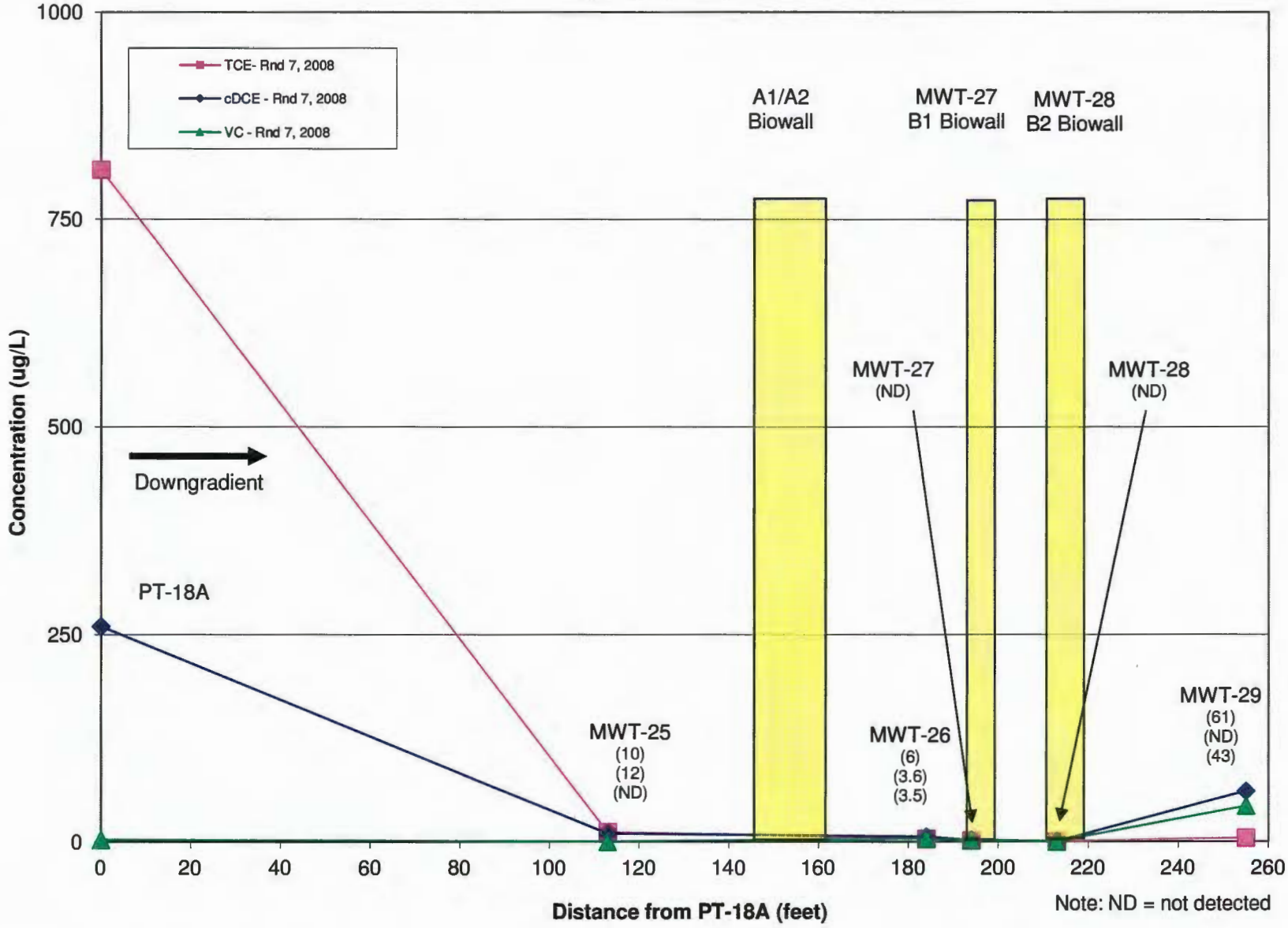


Figure 9H
Concentrations of VOCs Along the Biowalls - Round 8, 2009
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

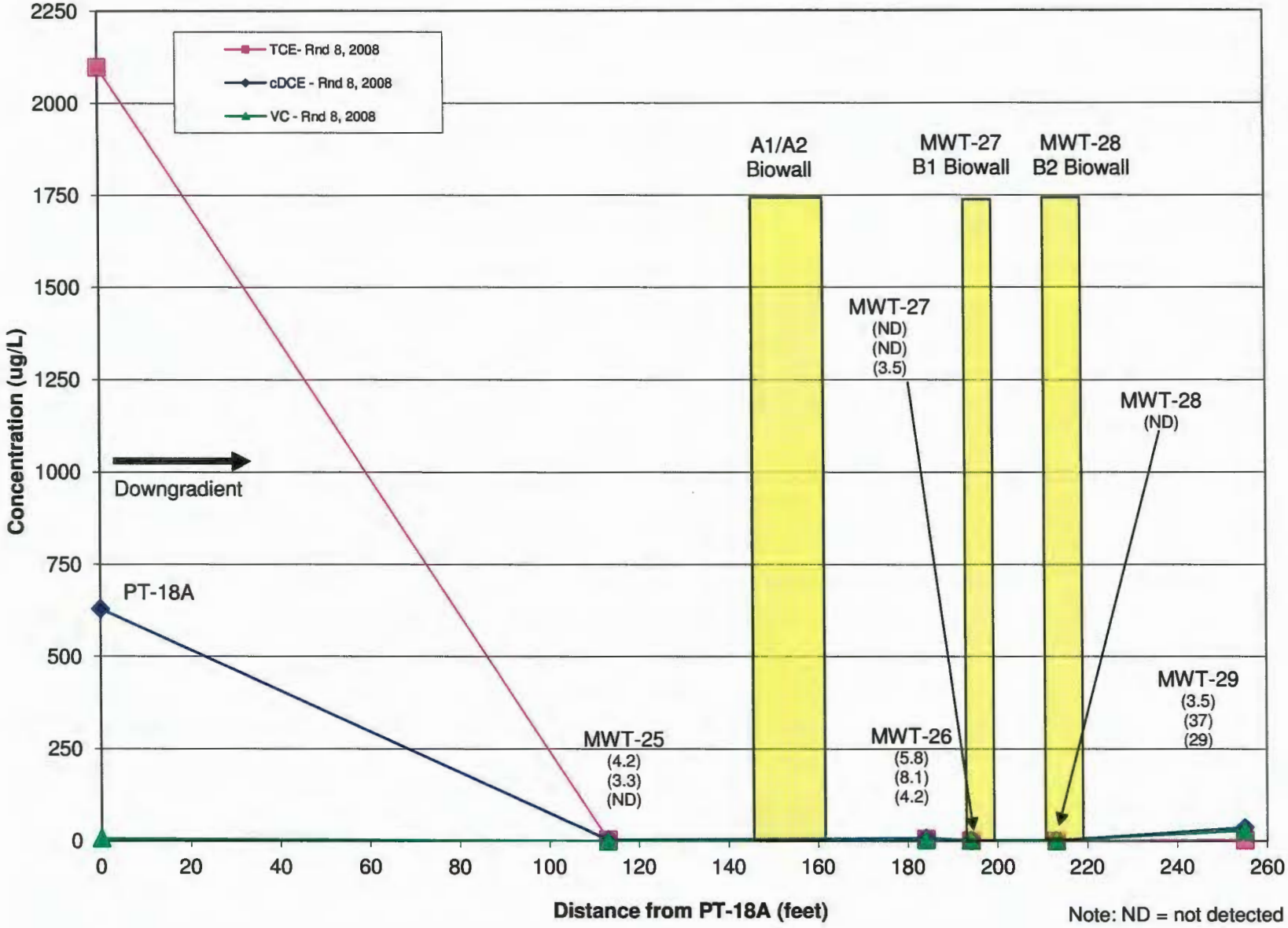
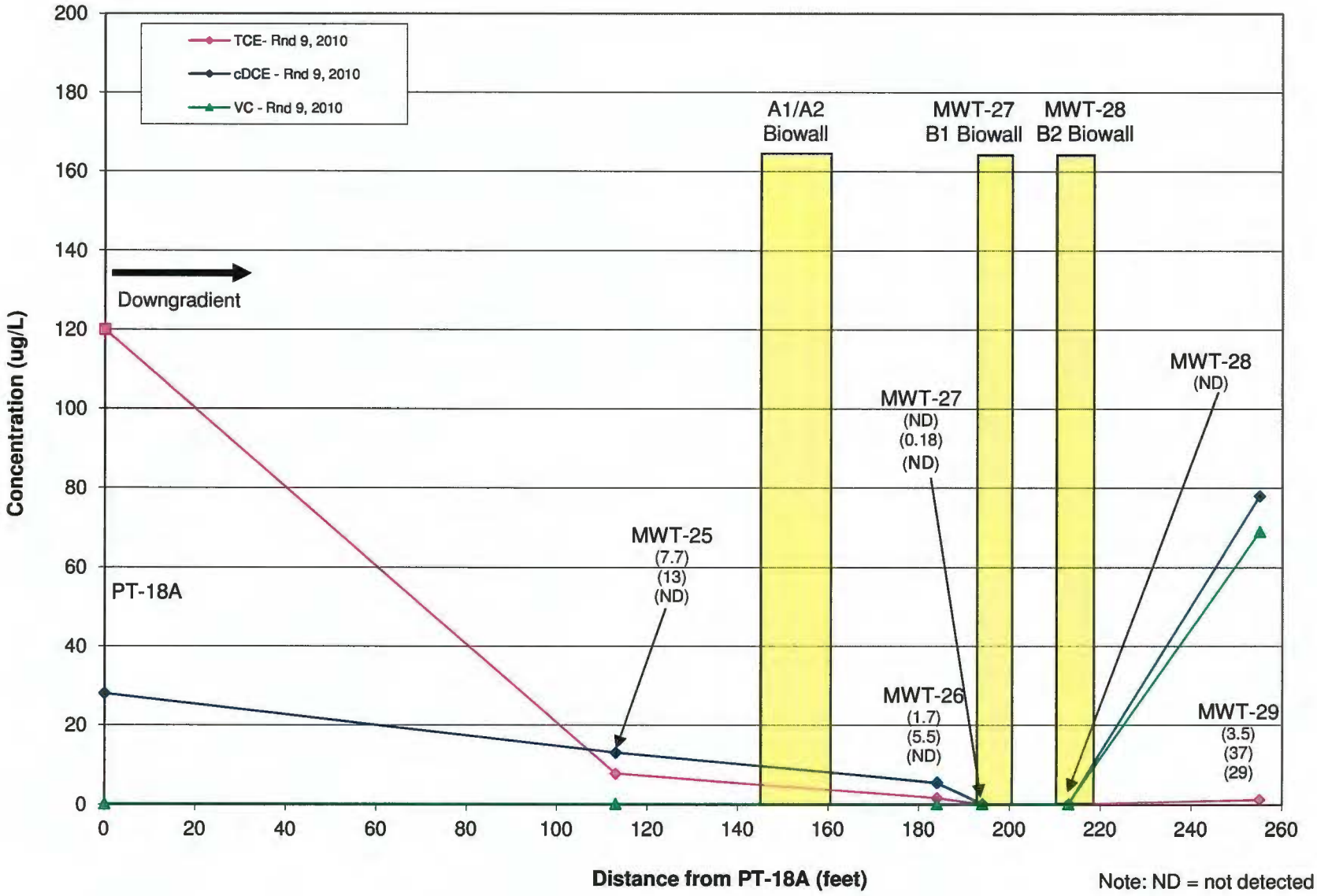


Figure 9I
Concentrations of VOCs Along the Biowalls - Round 9, 2010
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note: ND = not detected

Figure 9A
Concentrations of VOCs Along the Biowalls - Quarter 1, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

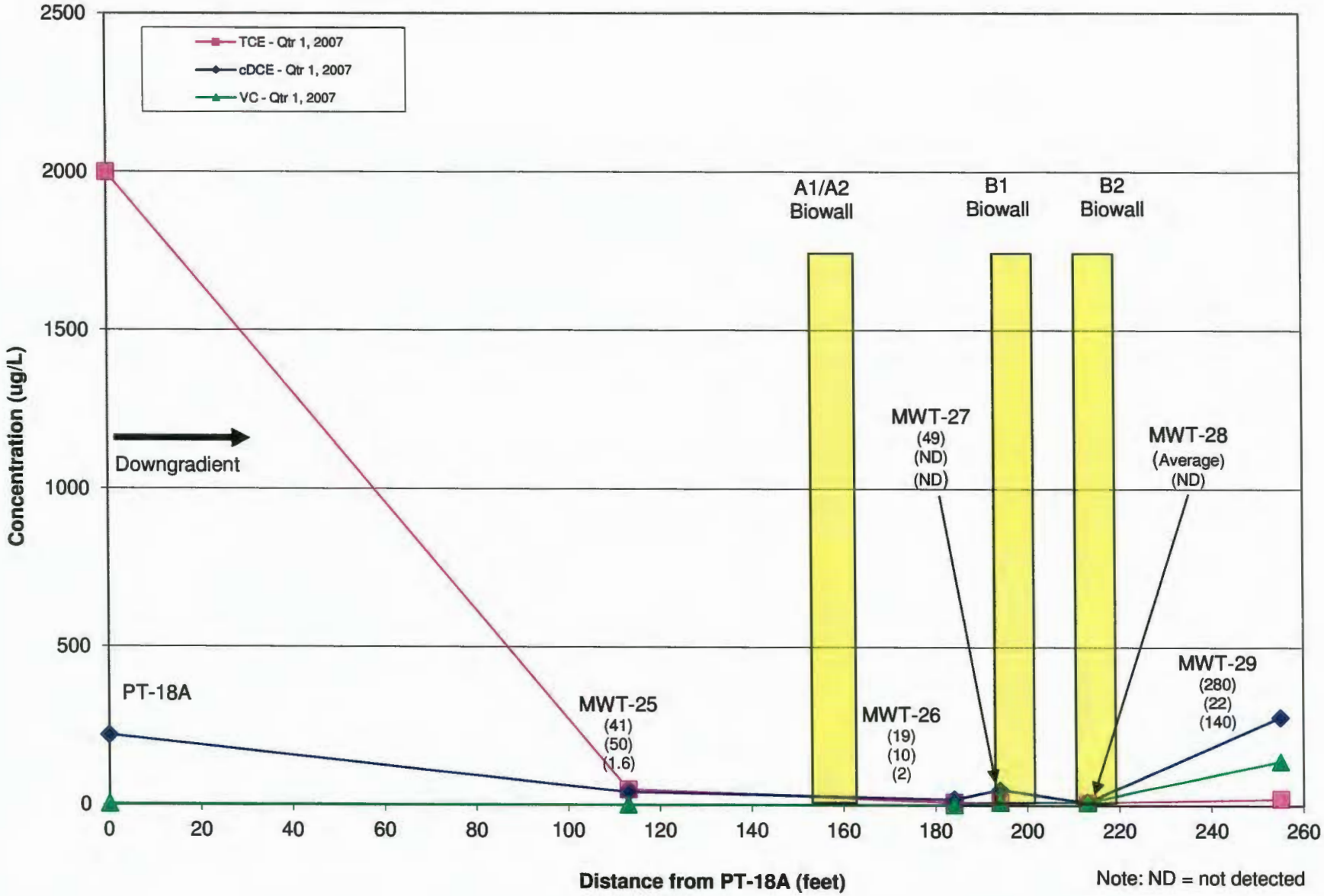
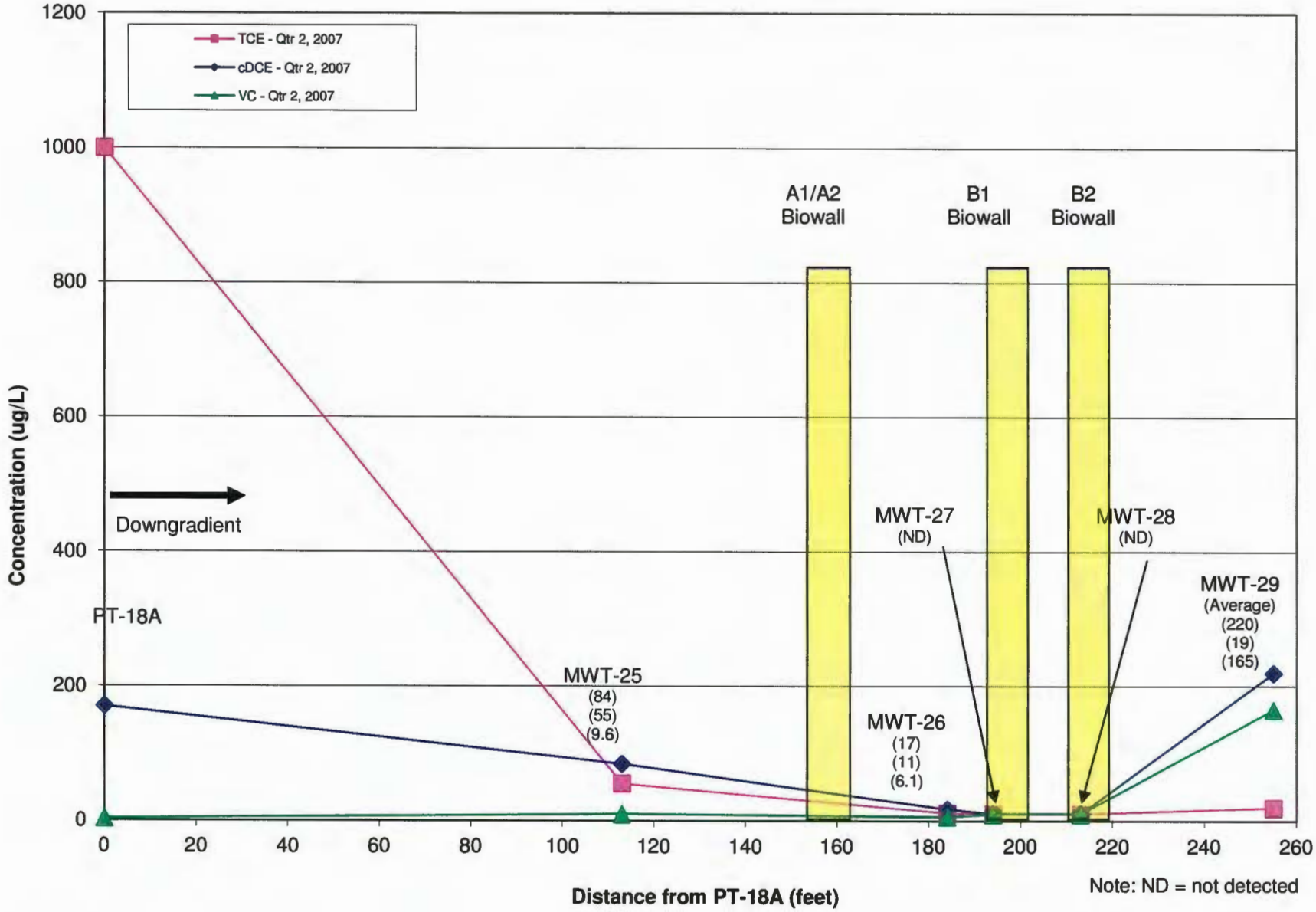


Figure 9B
Concentrations of VOCs Along the Biowalls - Quarter 2, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



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5/1/2012

Figure 9C
Concentrations of VOCs Along the Biowalls - Quarter 3, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

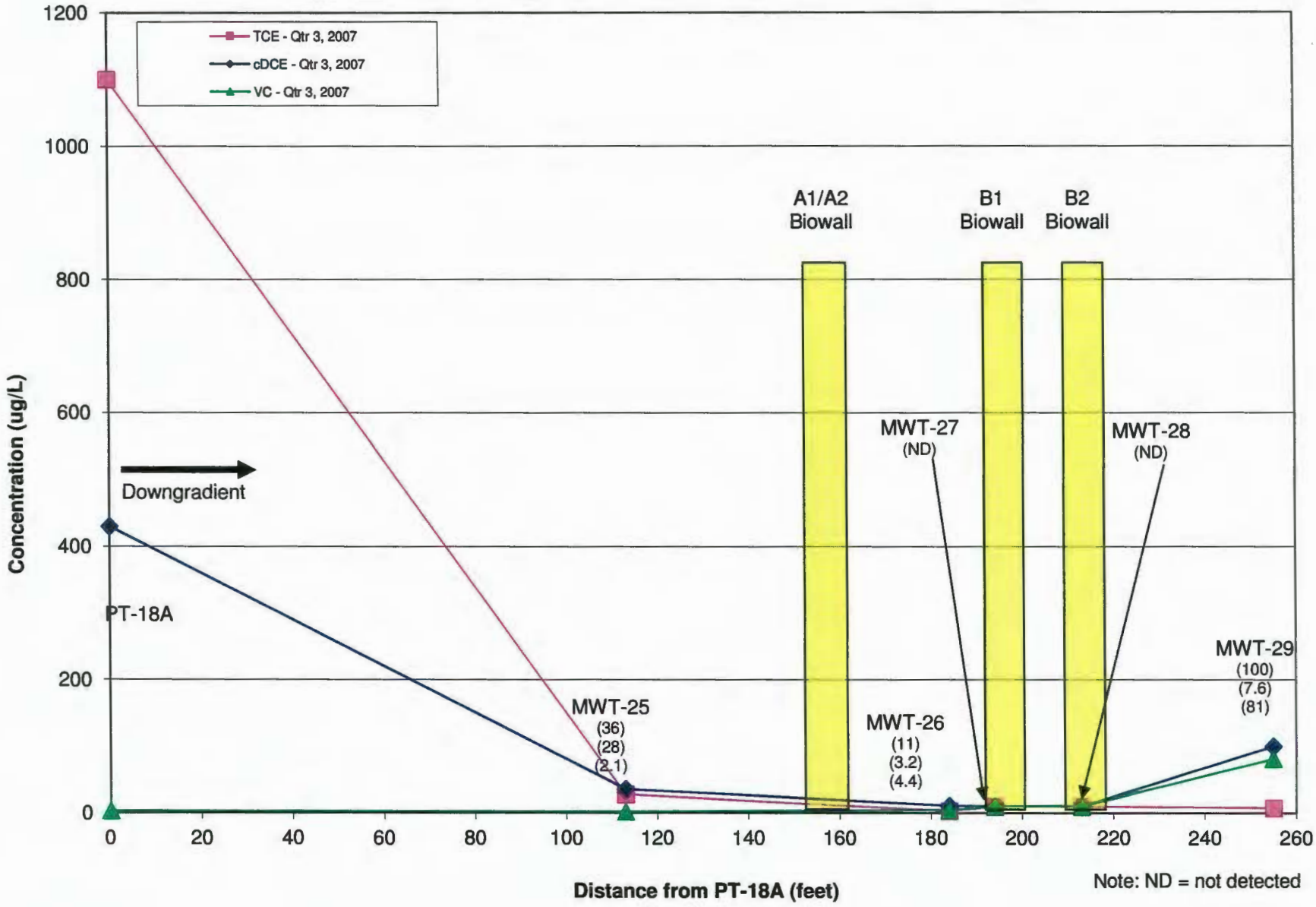


Figure 9D
Concentrations of VOCs Along the Biowalls - Quarter 4, 2007
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

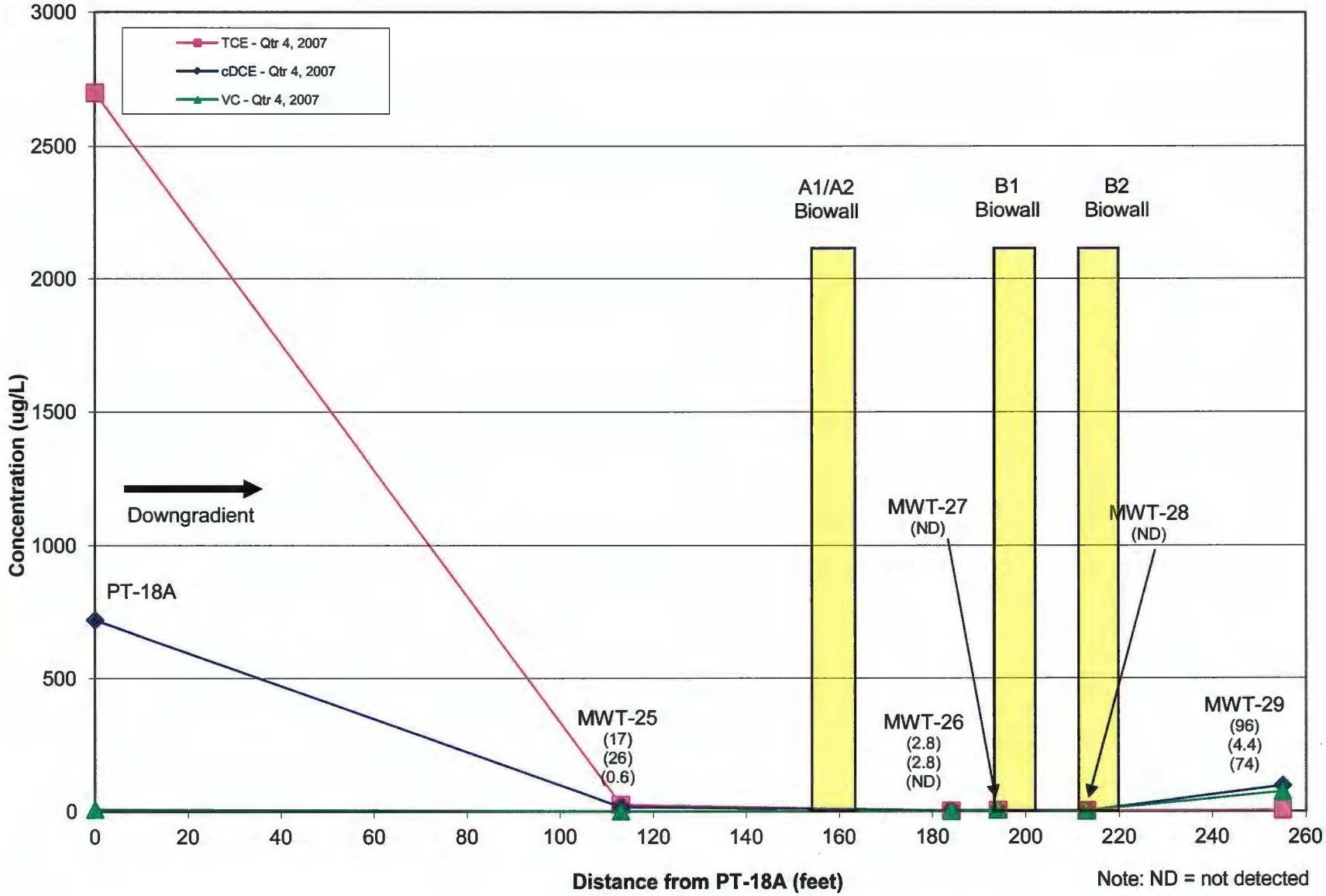


Figure 9E
Concentrations of VOCs Along the Biowalls - Round 5, 2008
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

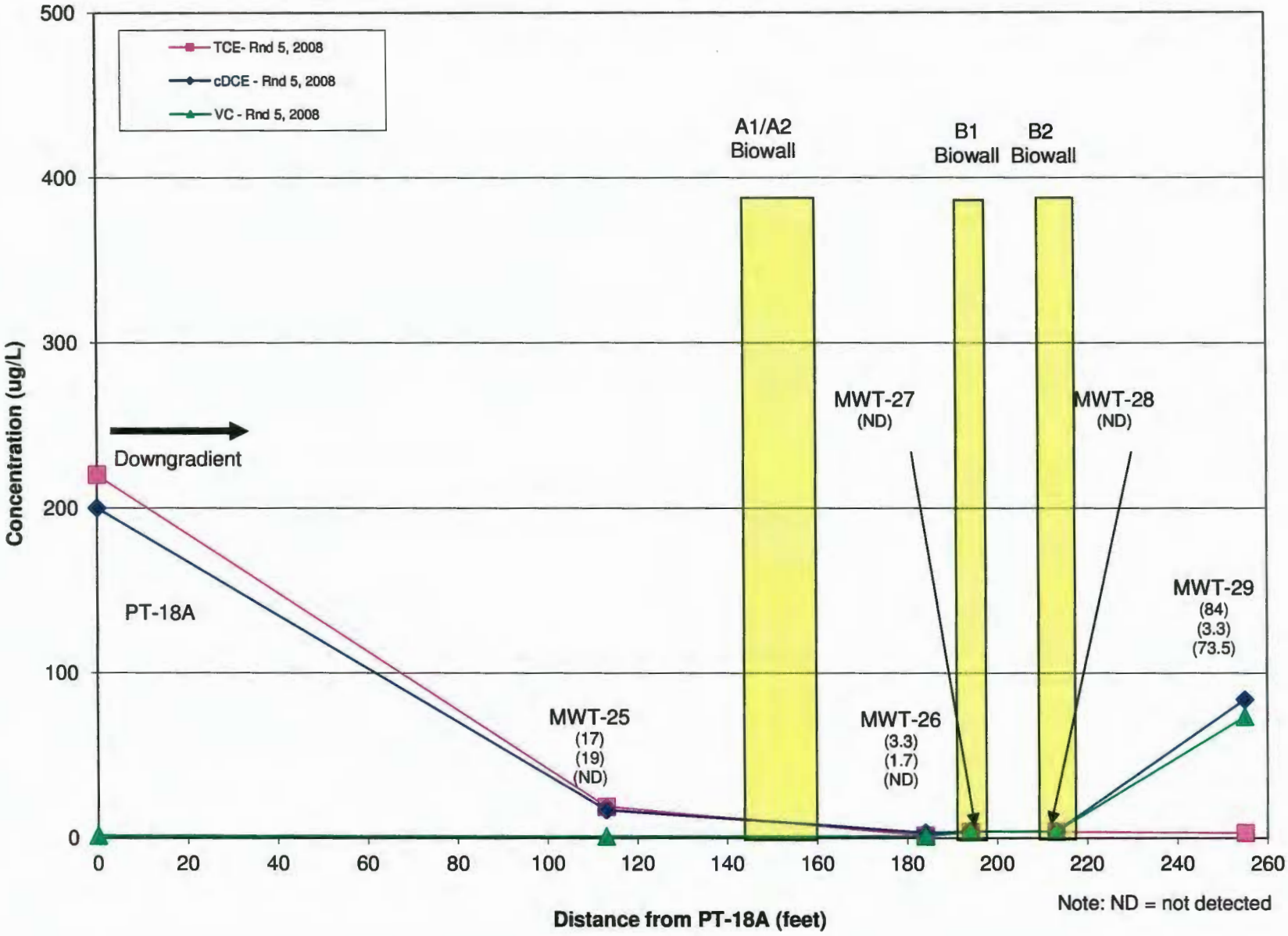


Figure 9F
Concentrations of VOCs Along the Biowalls - Round 6, 2008
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

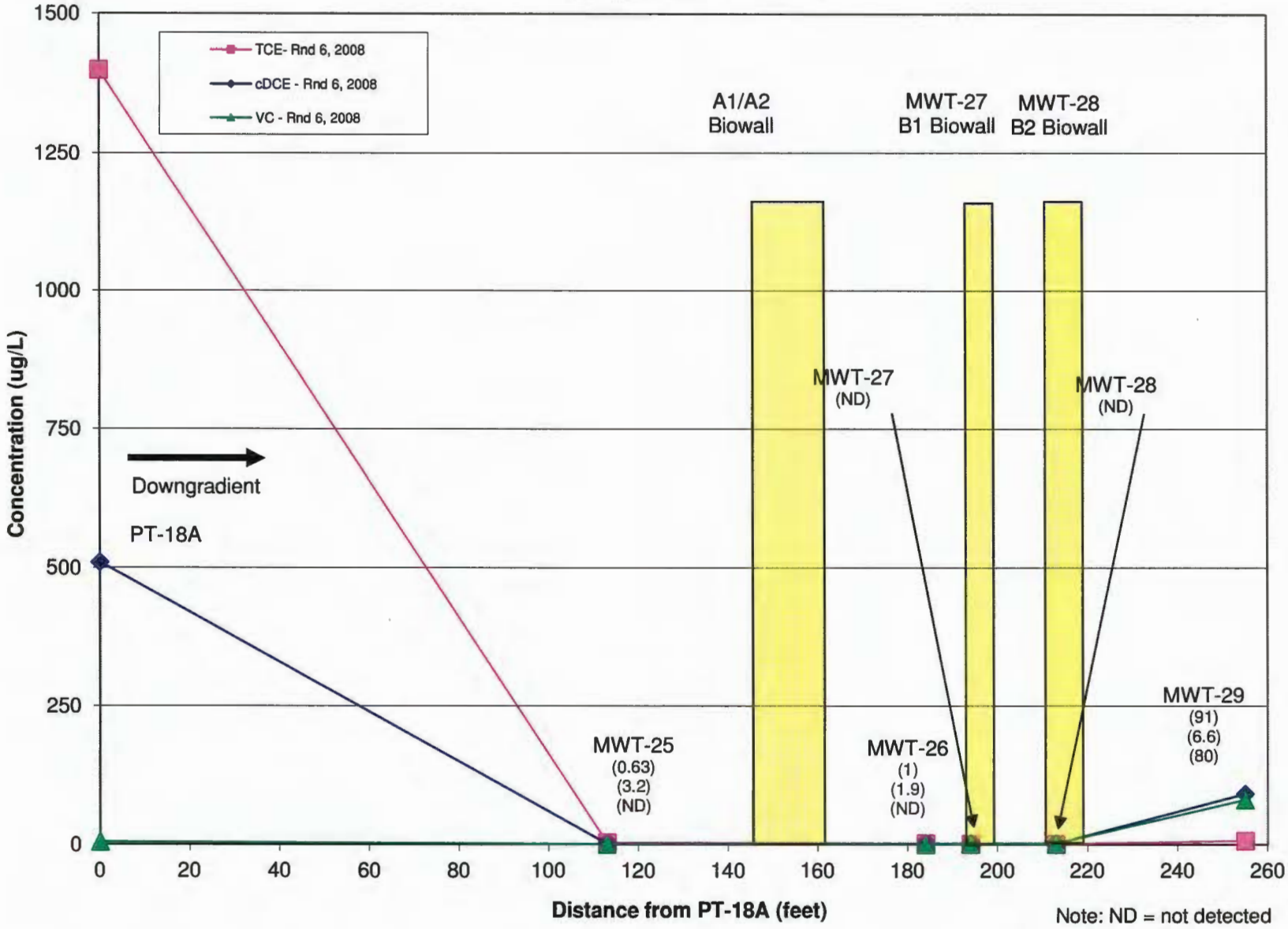


Figure 9G
Concentrations of VOCs Along the Biowalls - Round 7, 2009
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

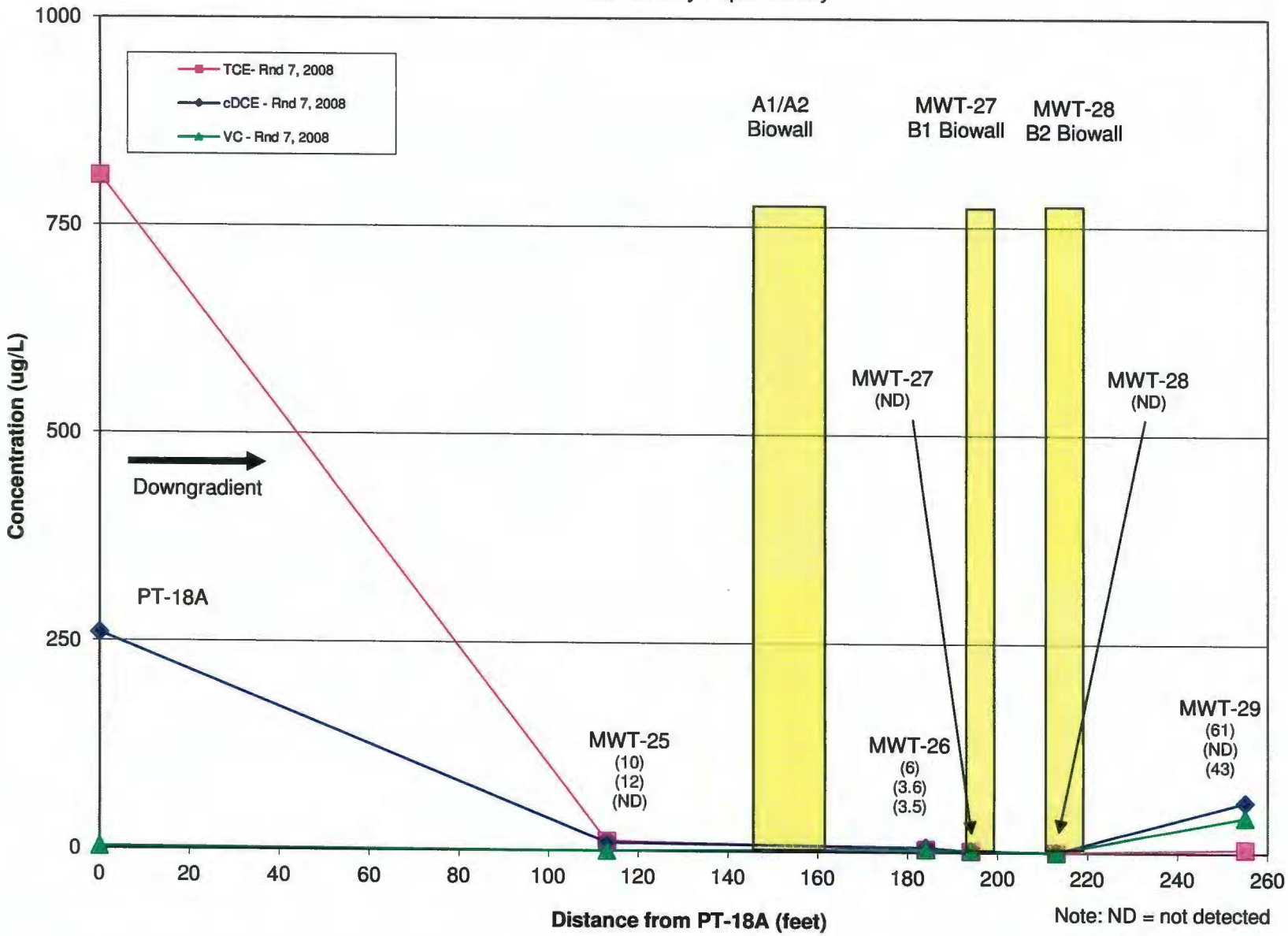


Figure 9H
Concentrations of VOCs Along the Biowalls - Round 8, 2009
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

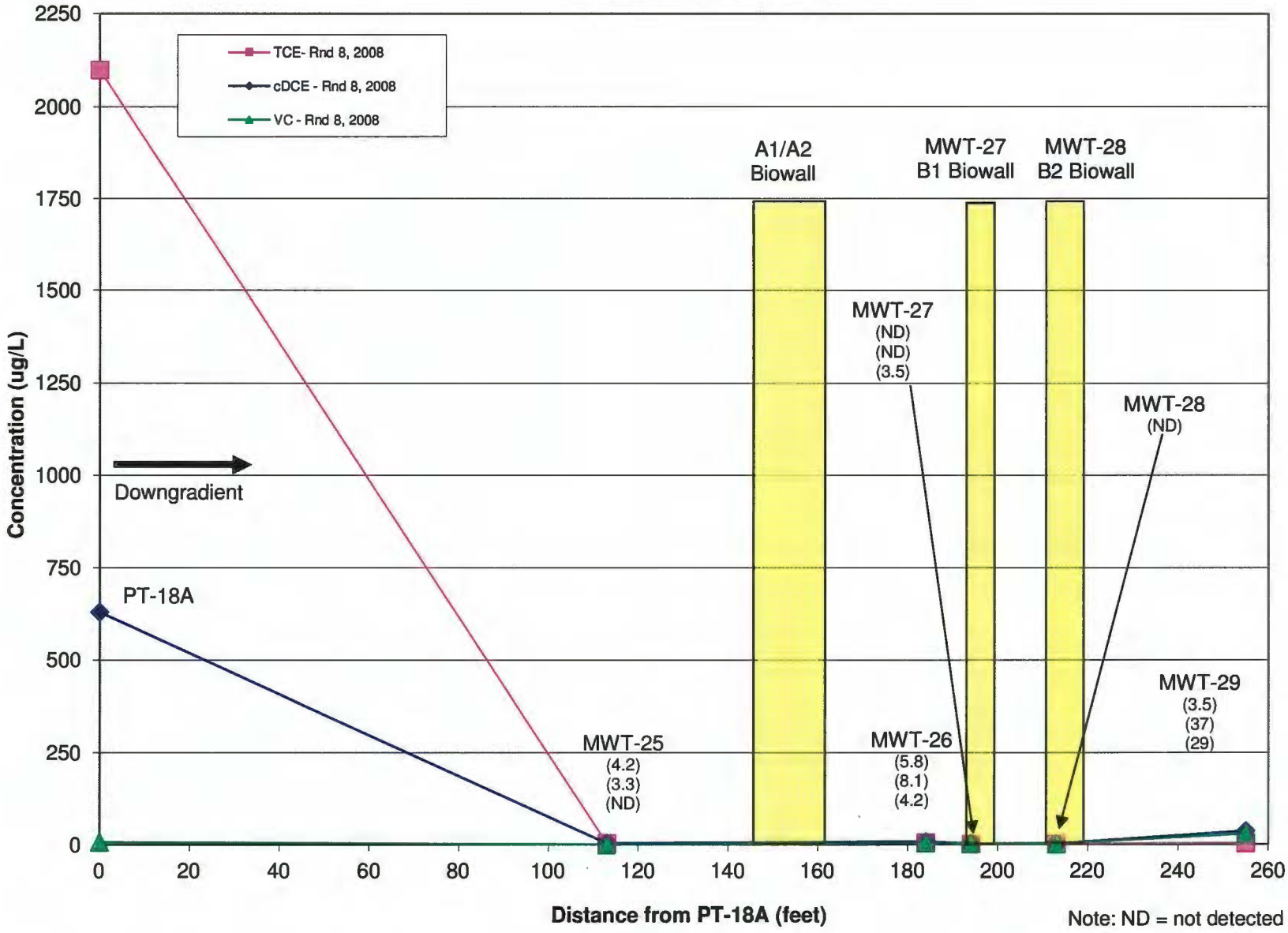
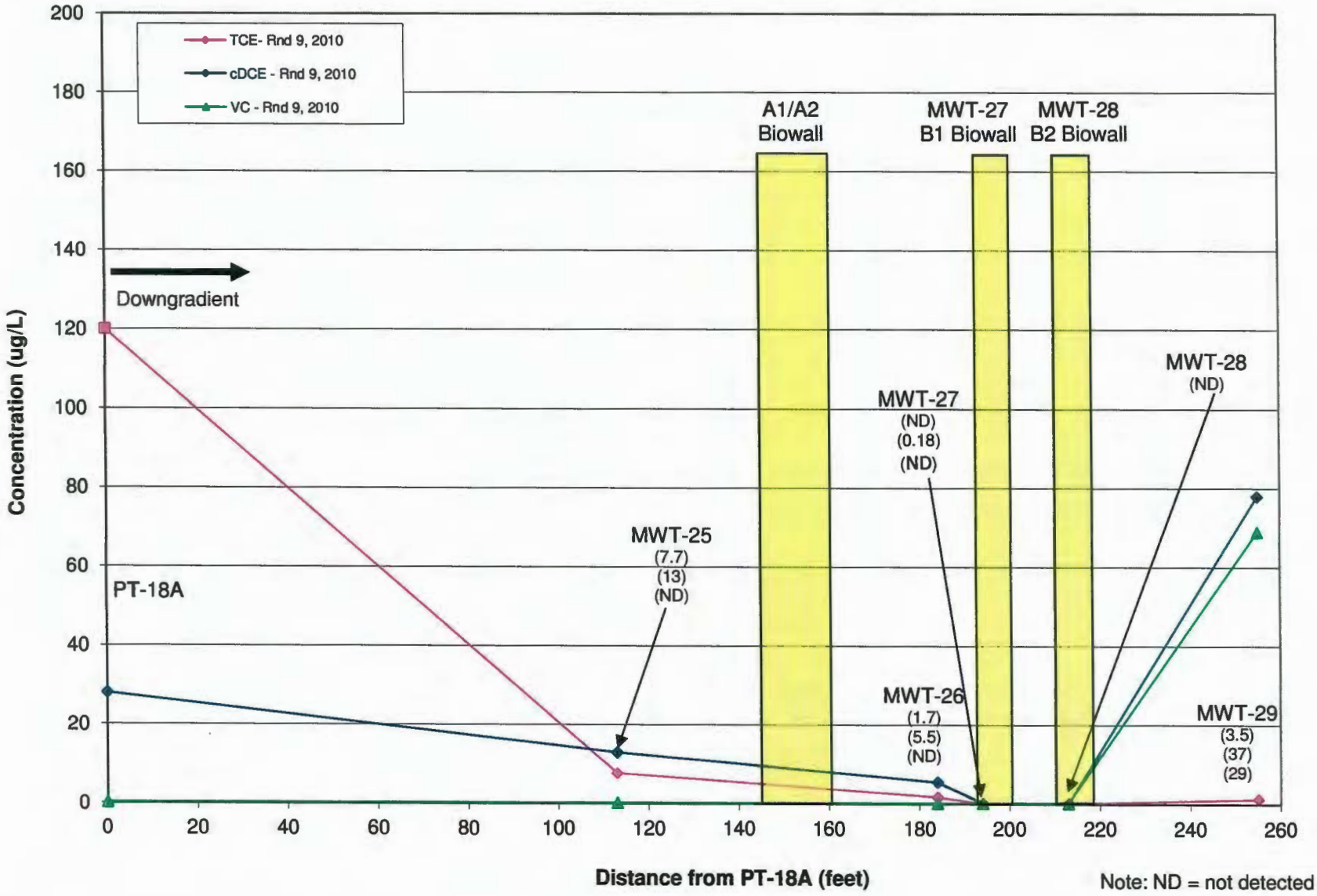


Figure 9I
Concentrations of VOCs Along the Biowalls - Round 9, 2010
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note: ND = not detected

Figure 9J
Concentrations of VOCs Along the Biowalls - Round 10, 2010
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

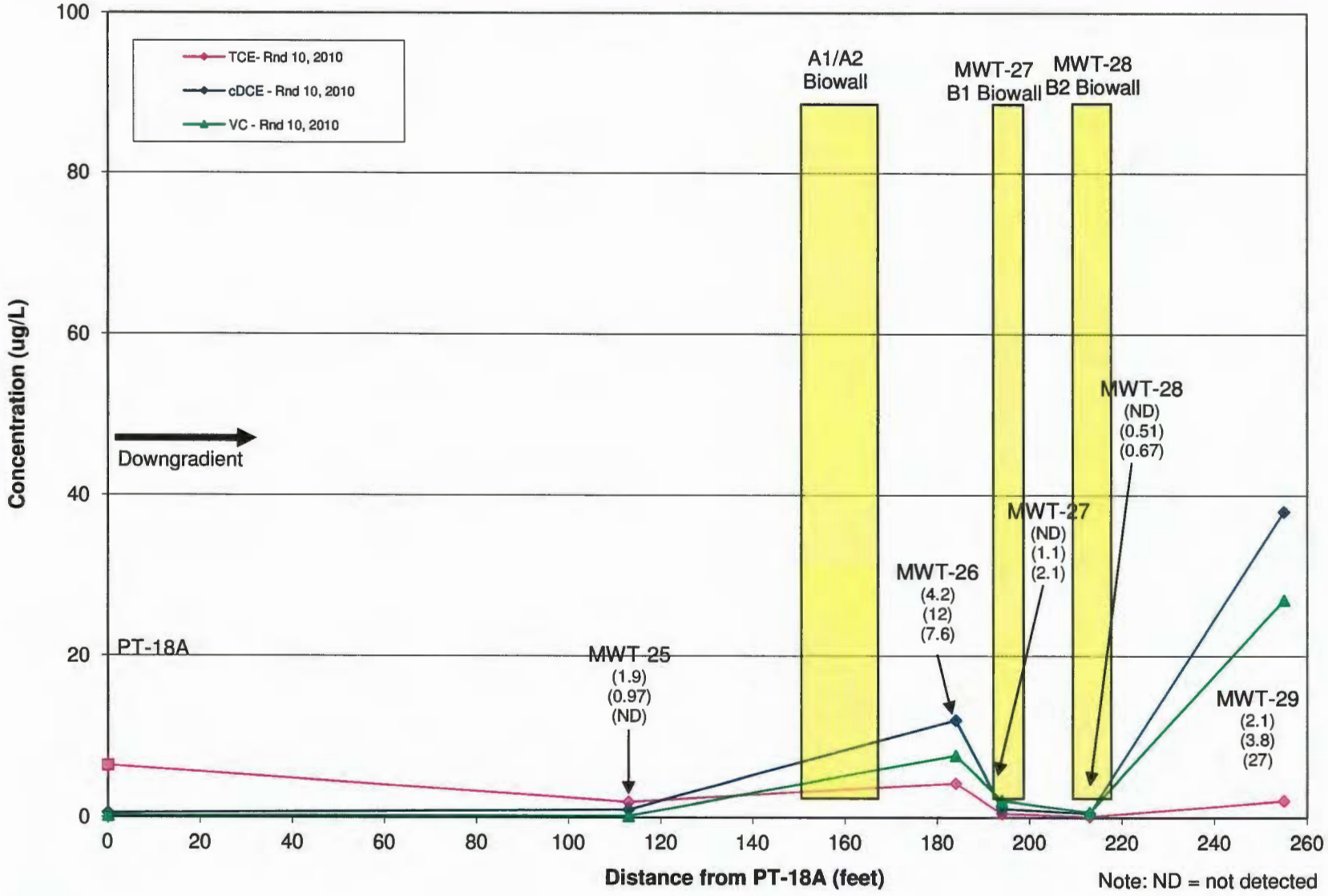
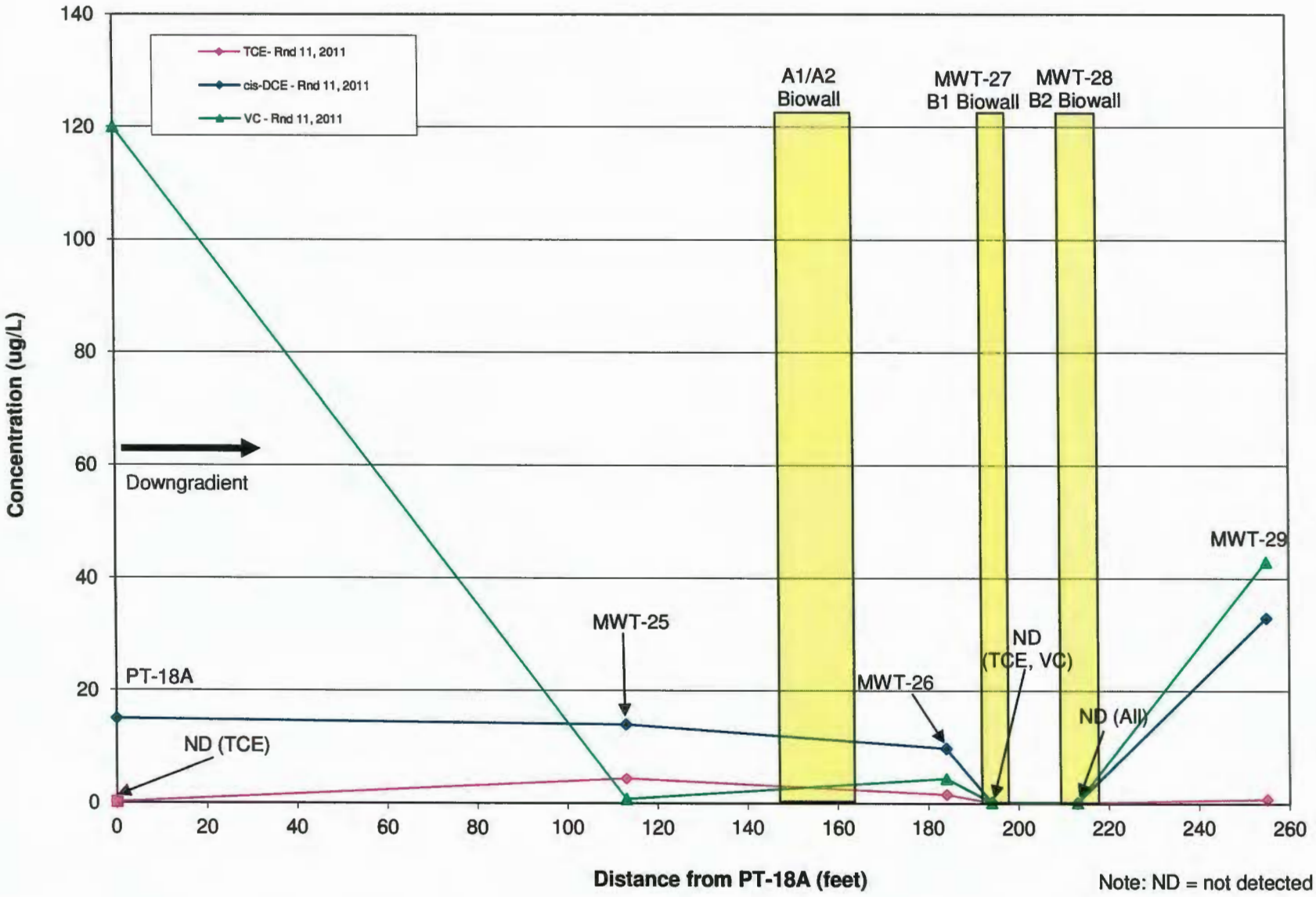


Figure 9K
Concentrations of VOCs Along the Biowalls - Round 11, 2011
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note: ND = not detected

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5/1/2012

Figure 9L
Concentrations of VOCs Along the Biowalls - Round 12, 2011
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

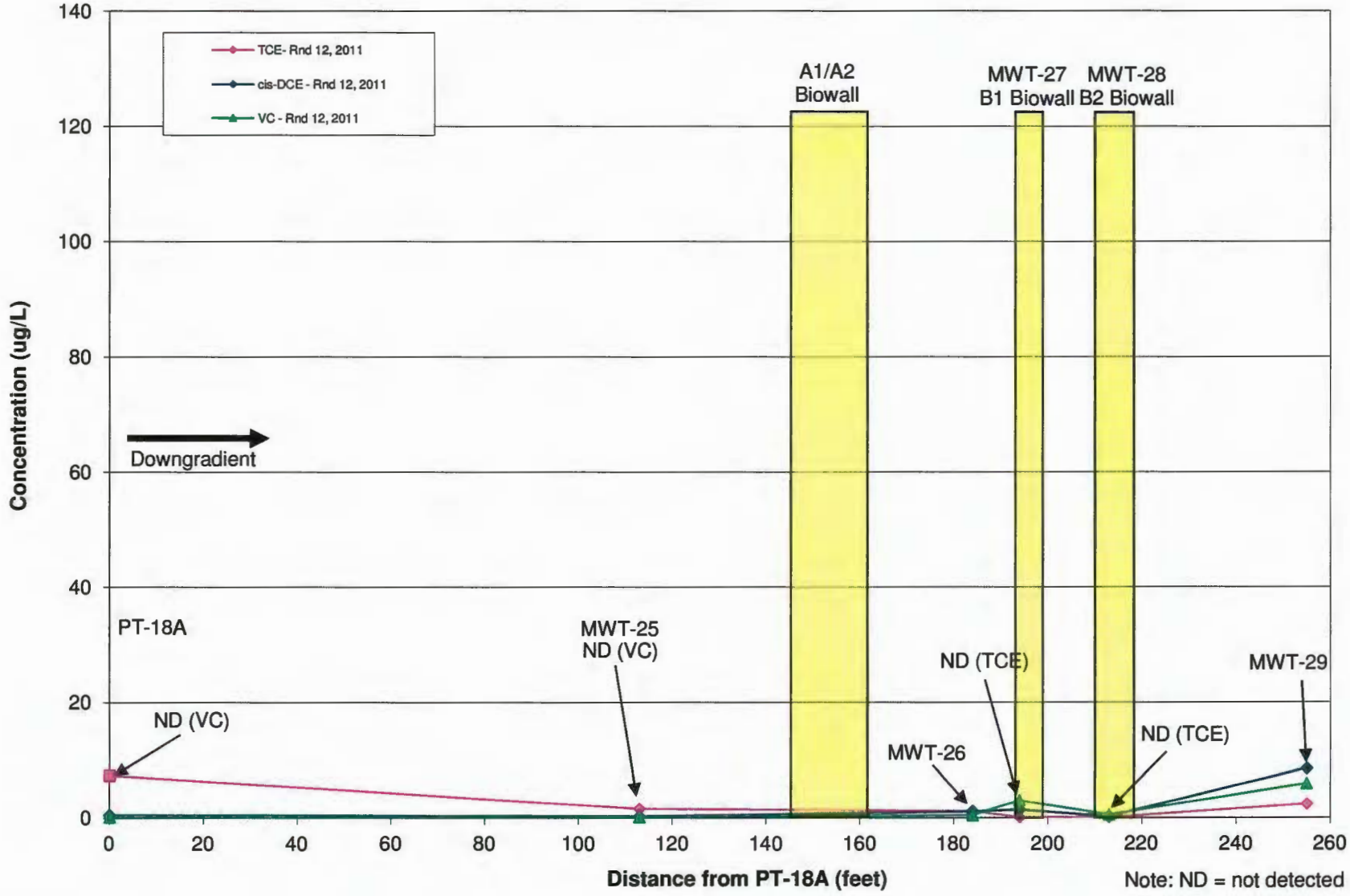
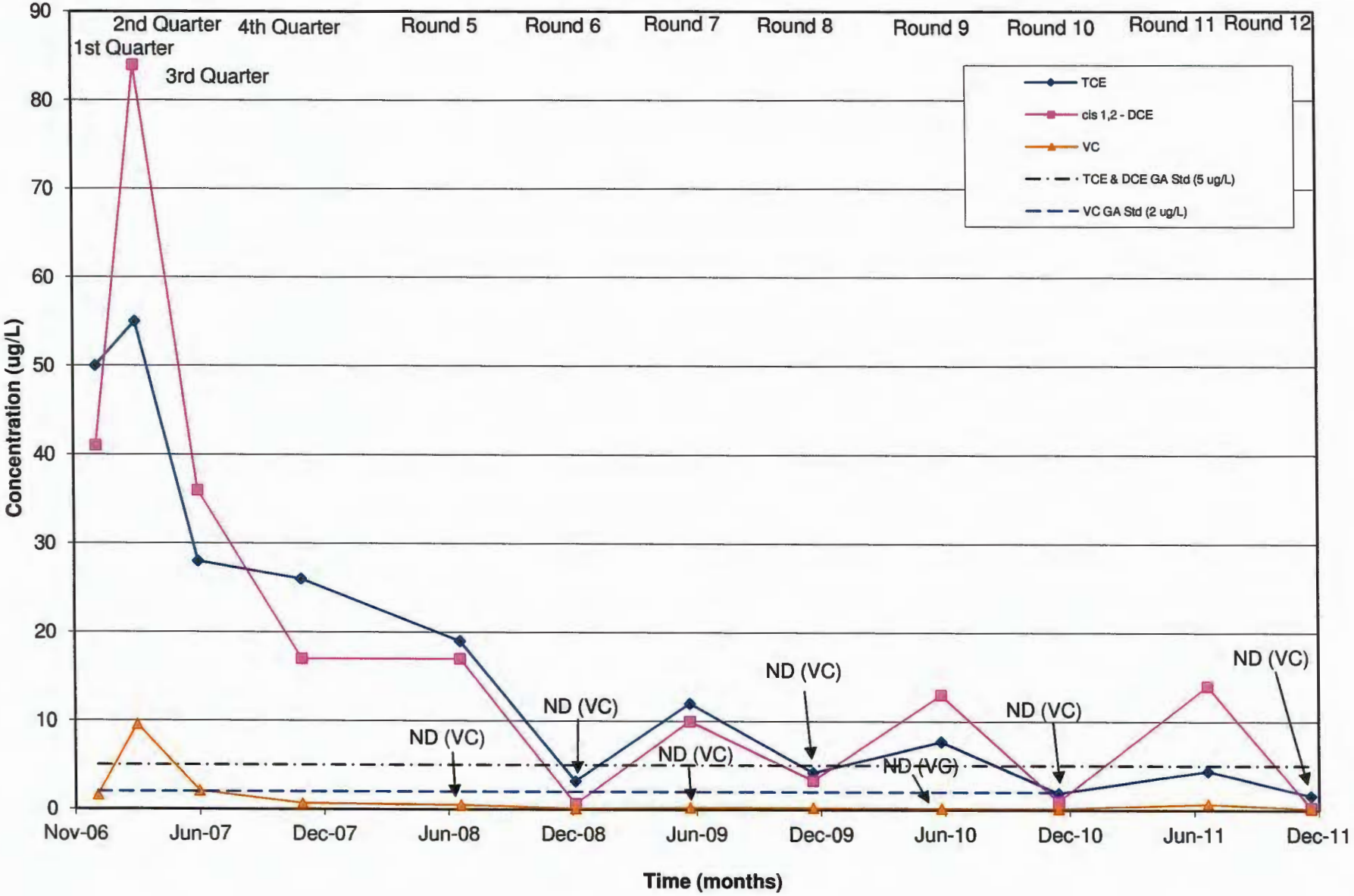


Figure 10A
Concentrations of Chlorinated Organics Over Time at MWT-25
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note:
ND = not detected.

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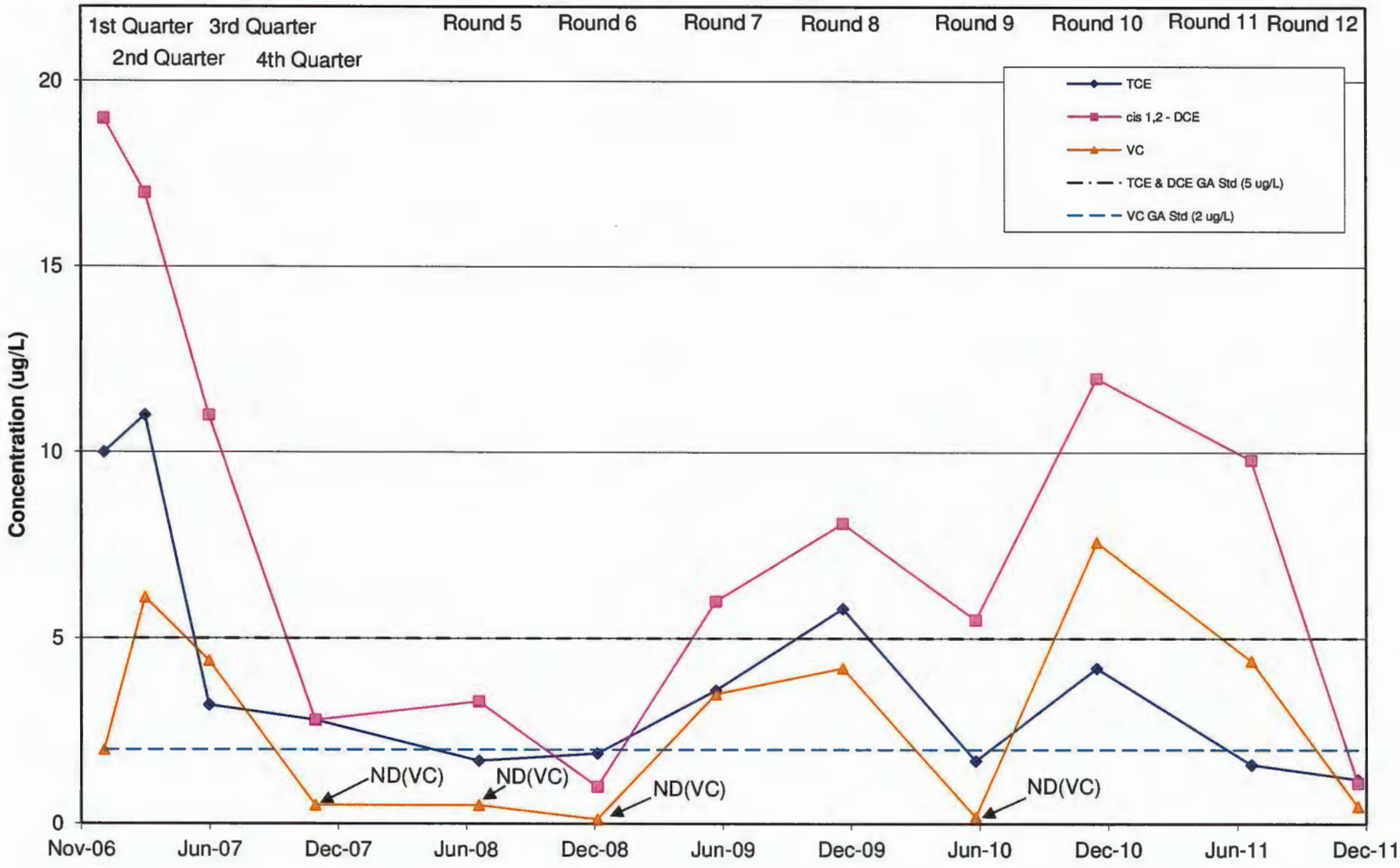
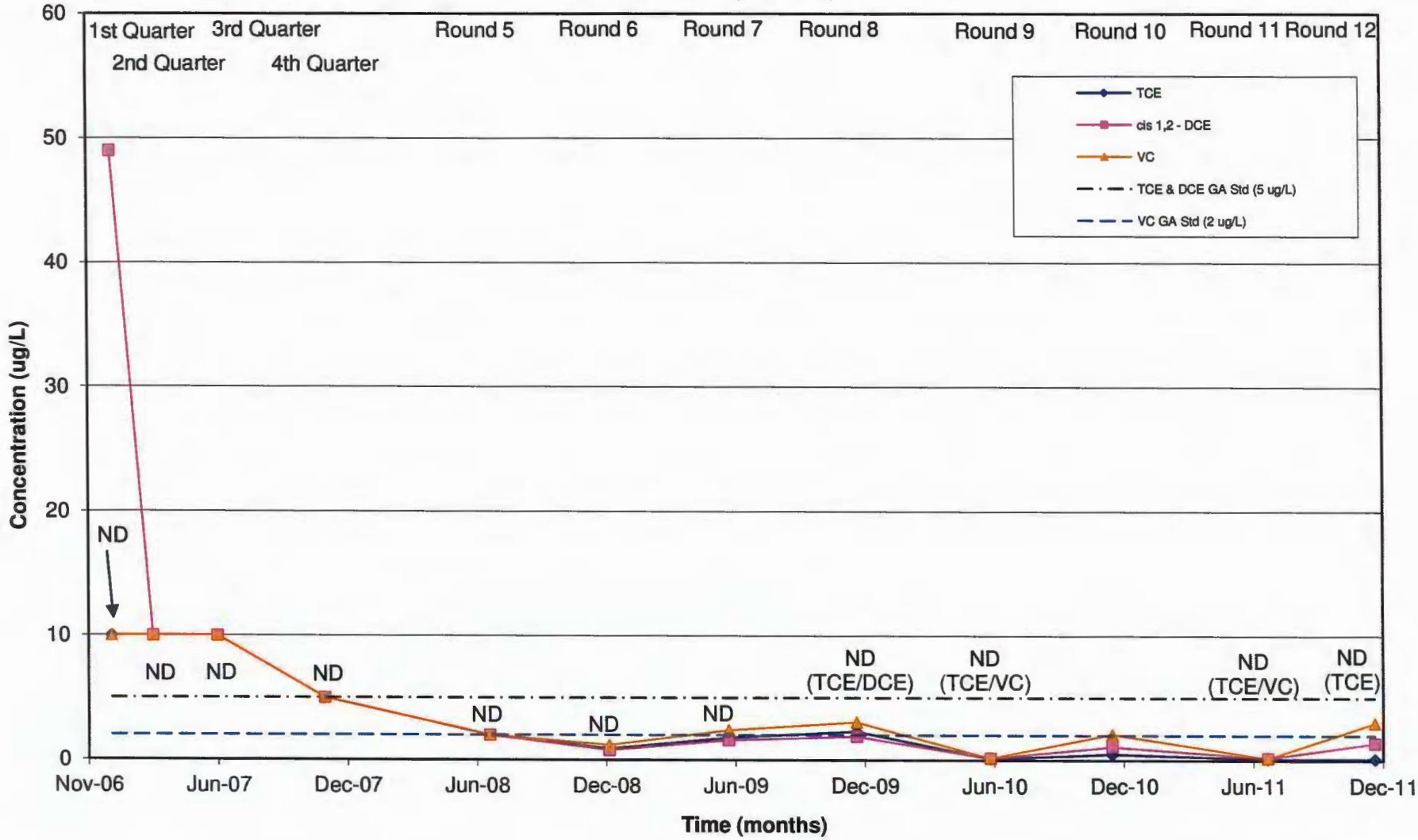
Figure 10B
Concentrations of Chlorinated Organics Over Time at MWT-26
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



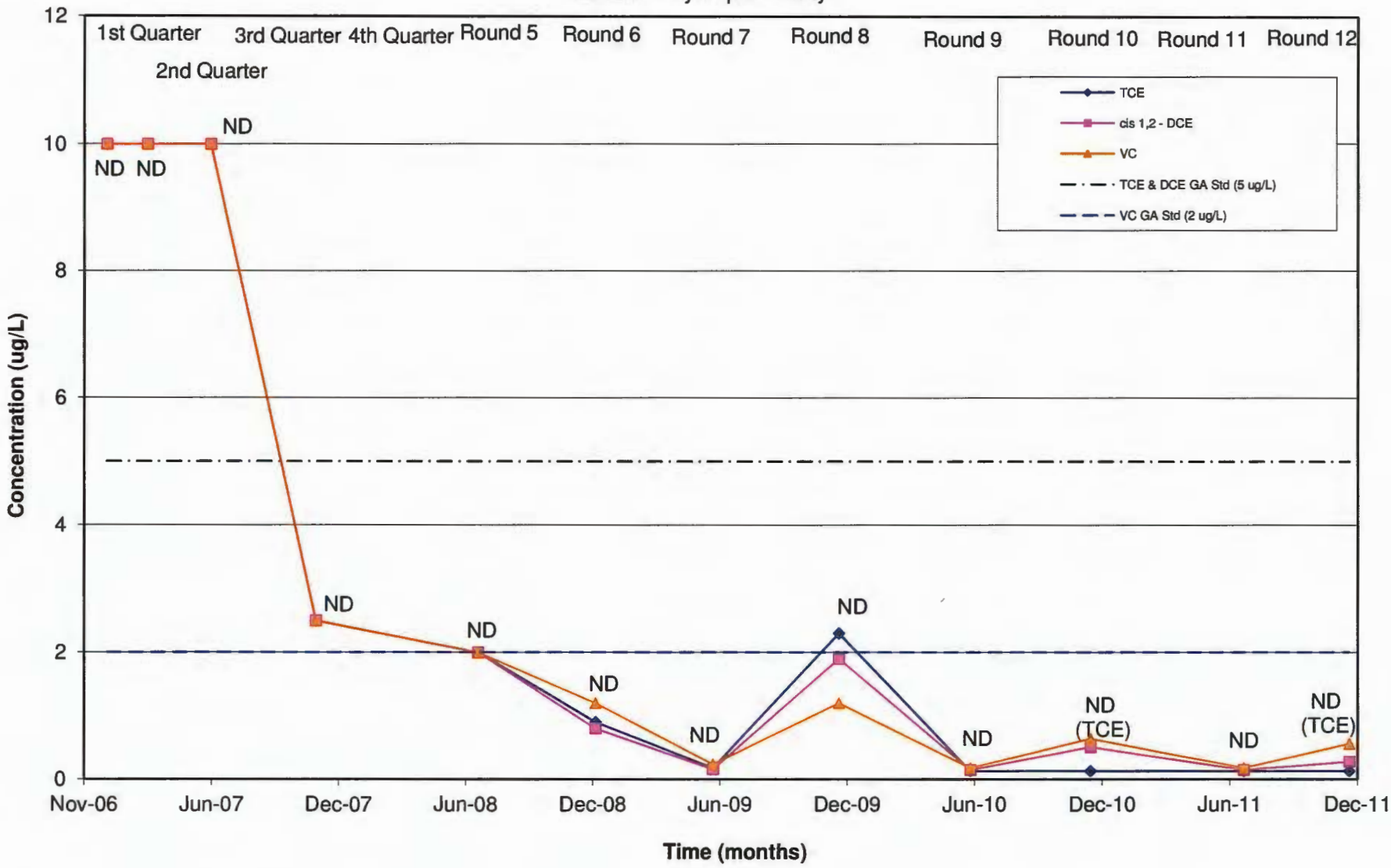
Note:
ND = not detected.

Figure 10C
Concentrations of Chlorinated Organics Over Time at MWT-27
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note:
Round 3 and Round 6 data is the average of the sample and its duplicate.
ND = not detected.

Figure 10D
Concentrations of Chlorinated Organics Over Time at MWT-28
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note:
Round 3 and Round 6 data is the average of the sample and its duplicate.
ND = not detected.

Figure 10E
Concentrations of Chlorinated Organics Over Time at MWT-29
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Note:
Round 2 and Round 5 data is the average of the sample and its duplicate.

Figure 10F
Concentrations of Chlorinated Organics Over Time at MWT-22
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

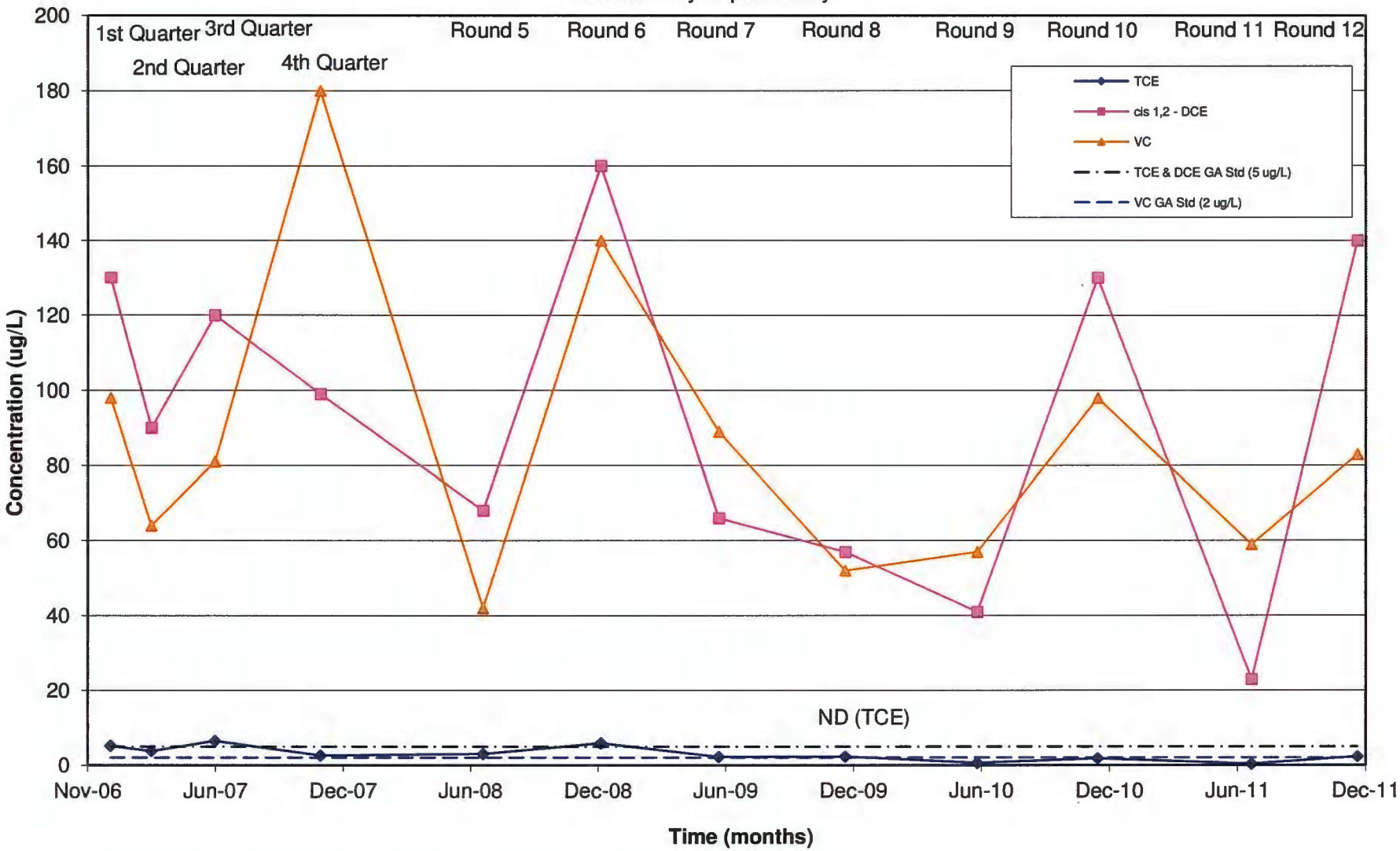
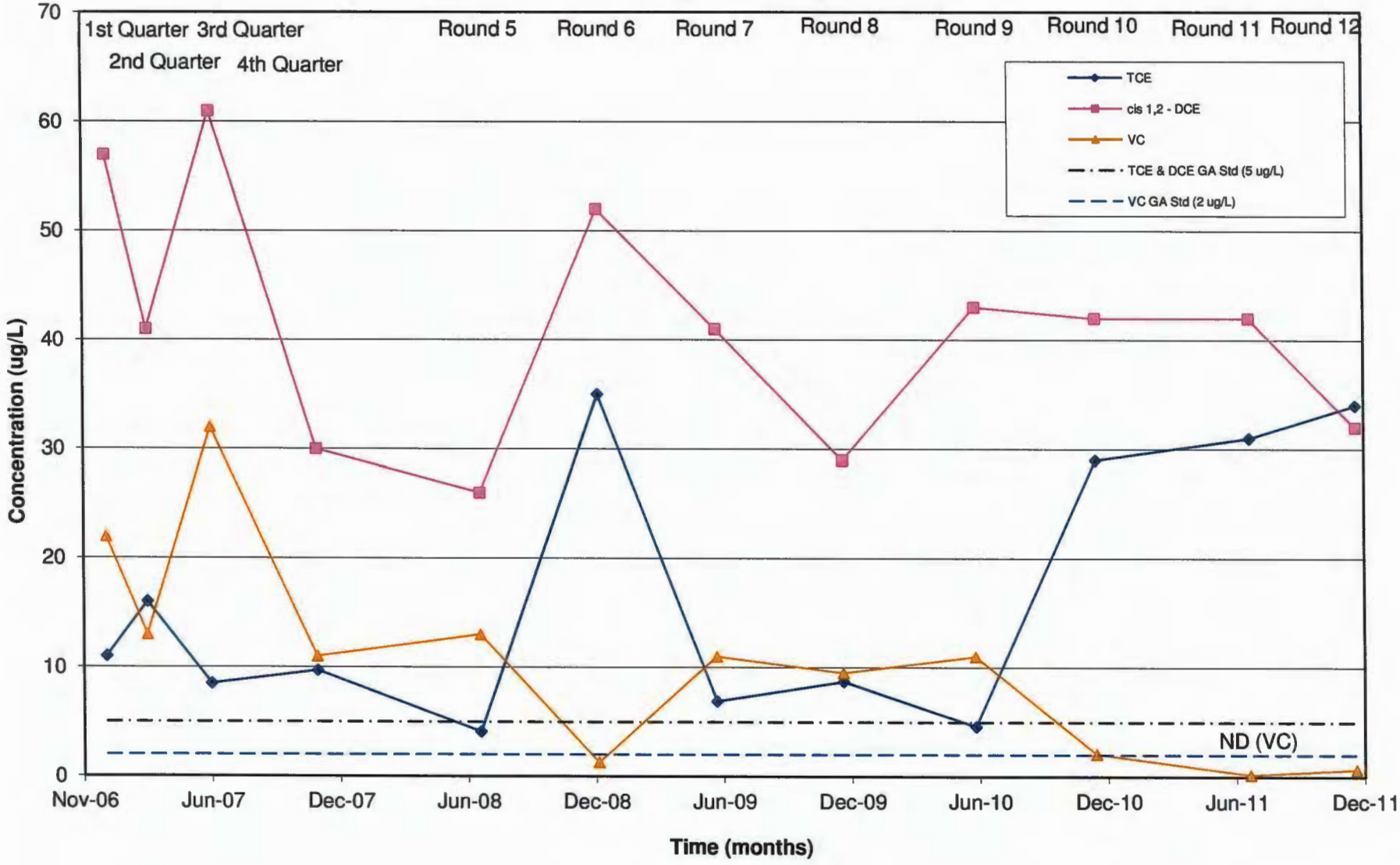
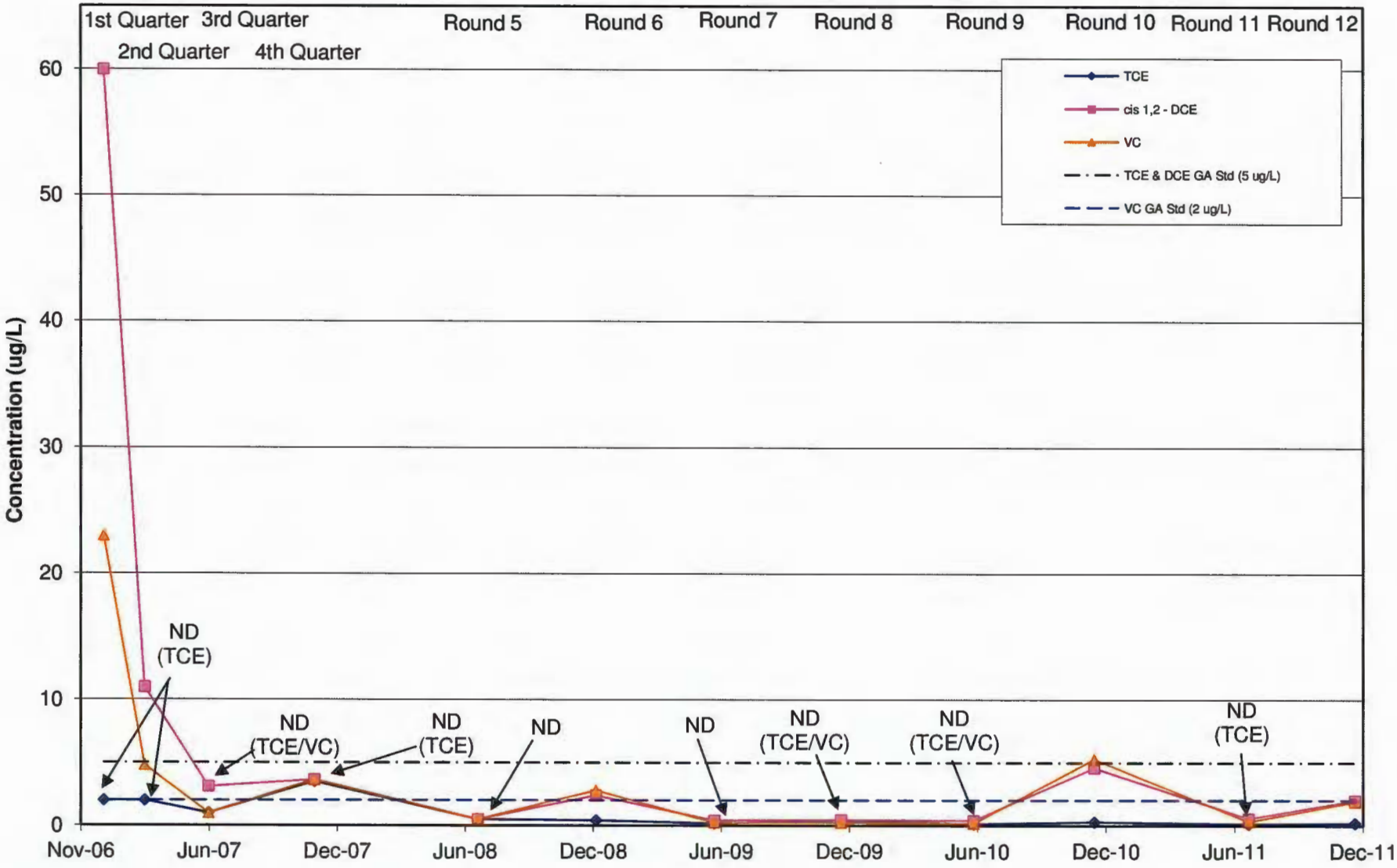


Figure 10G
Concentrations of Chlorinated Organics Over Time at PT-22
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note:
ND= not detected.

Figure 10H
Concentrations of Chlorinated Organics Over Time at MWT-23
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note:
Round 4 data is the average of the sample and its duplicate.
ND = not detected.

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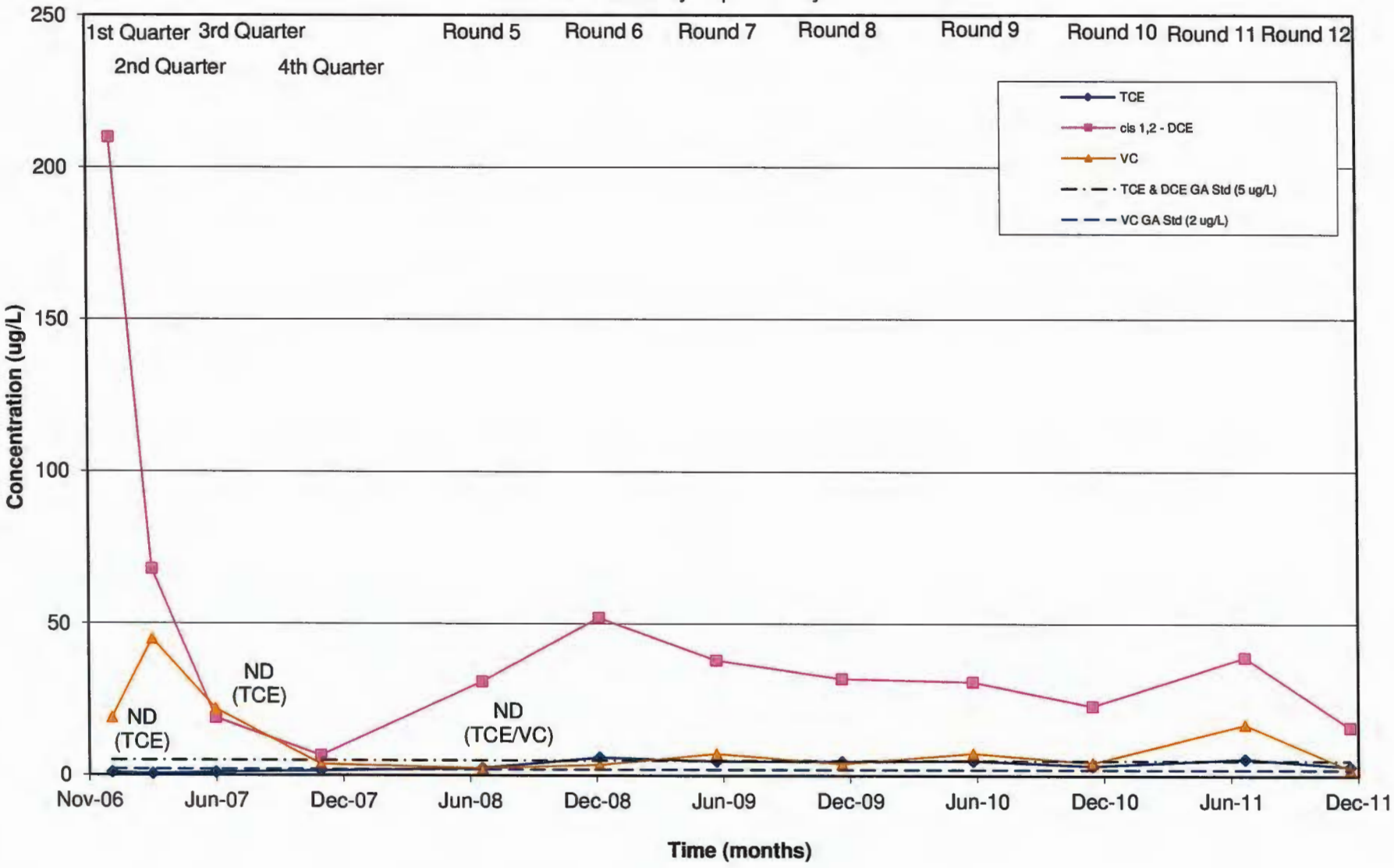
Figure 10I
Concentrations of Chlorinated Organics Over Time at MWT-24
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

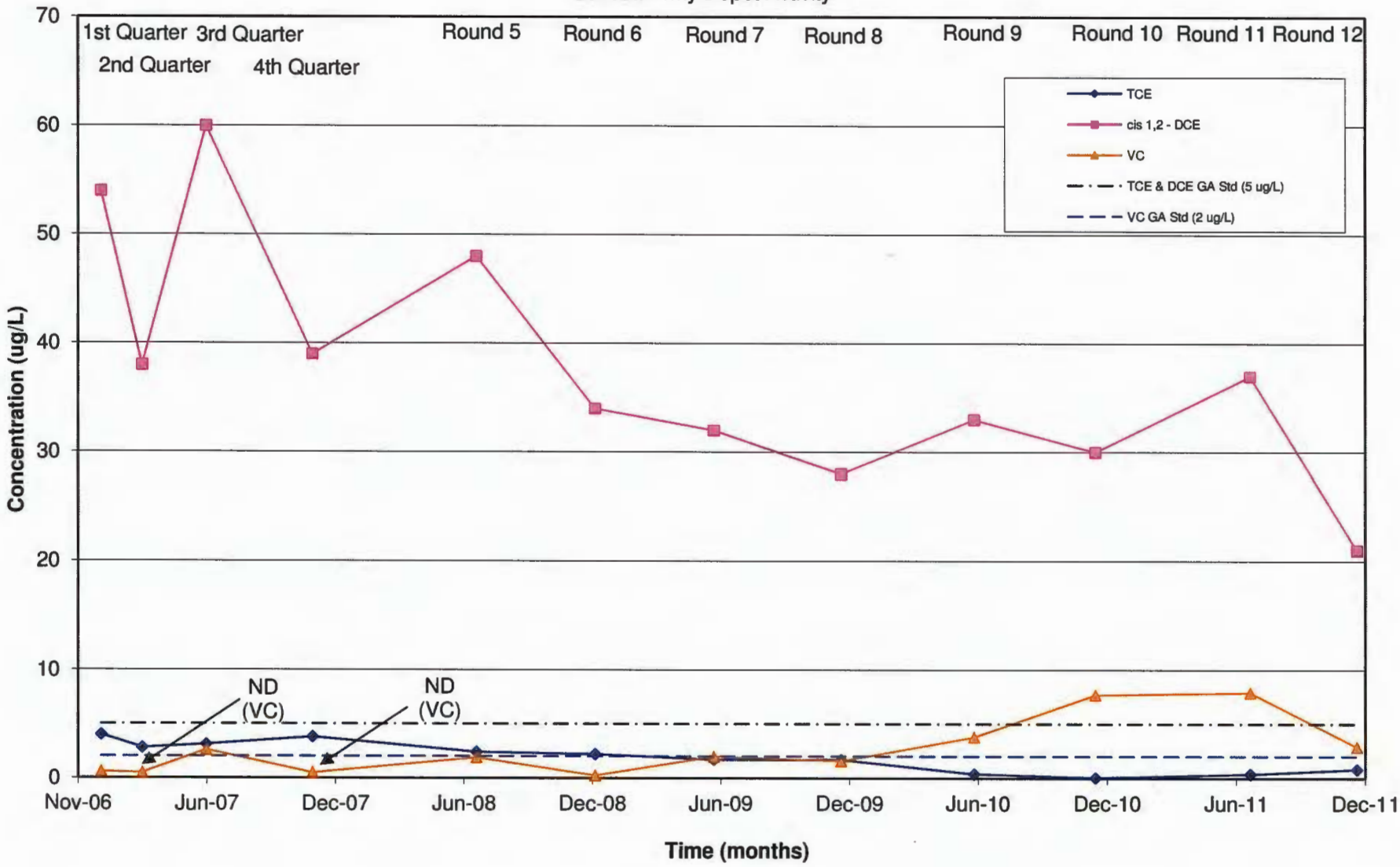


Note:
ND = not detected.

P:\PIT\Projects\Huntsville Cont W912DY-08-D-0003\TO#12 - Ash Landfill\Annual Report Y5\Figures\Figure 10 Well Conc vs Time.xls MWT-24

5/1/2012

Figure 10J
Concentrations of Chlorinated Organics Over Time at PT-24
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Note:
ND = not detected.

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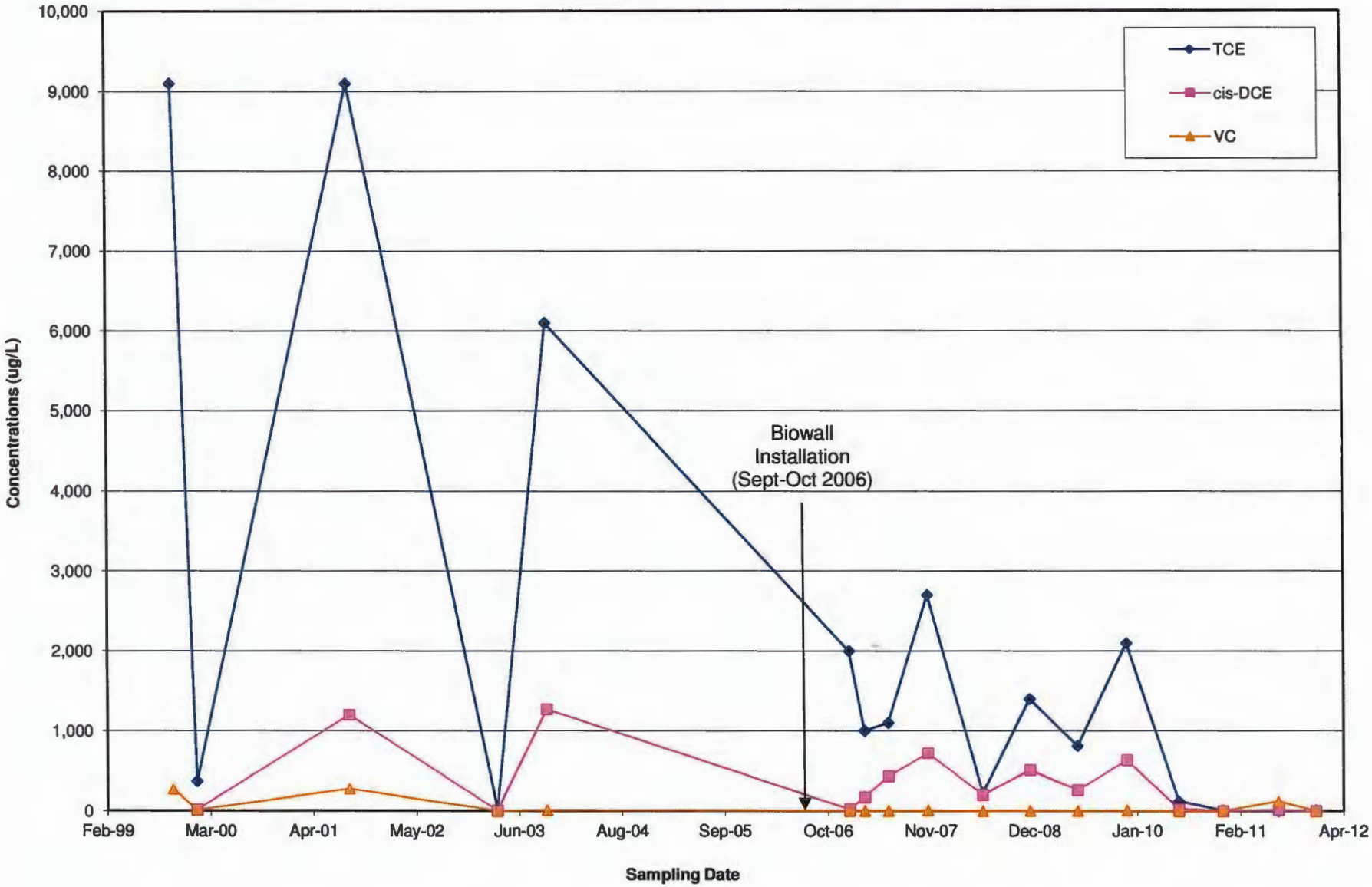
5/1/2012

Figure 11A
Historic Concentrations of Chlorinated Organics at PT-18A
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



Fig[illegible]11B
Historic Concentrations of [illegible]rinated Organics at PT-17
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

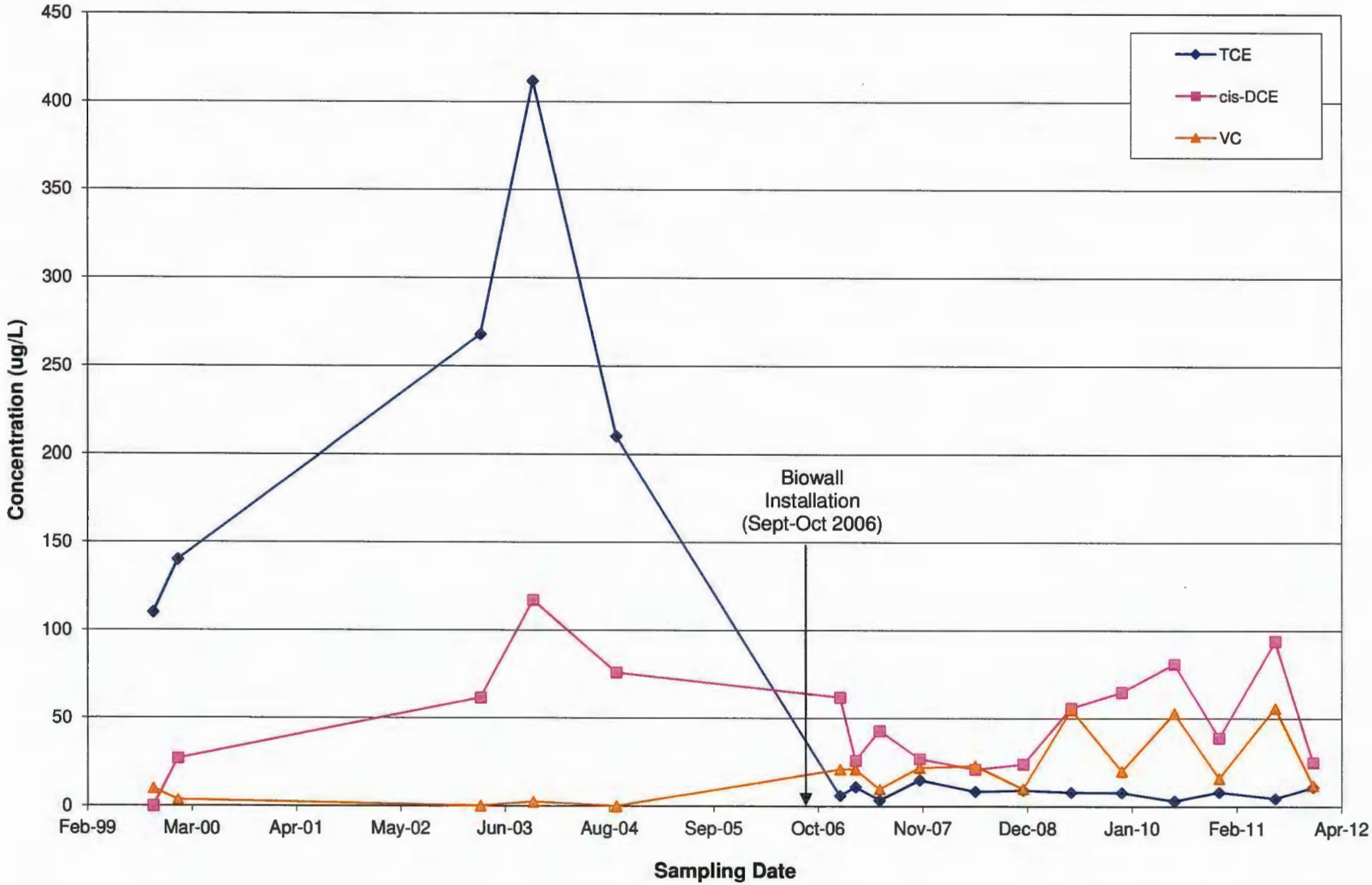
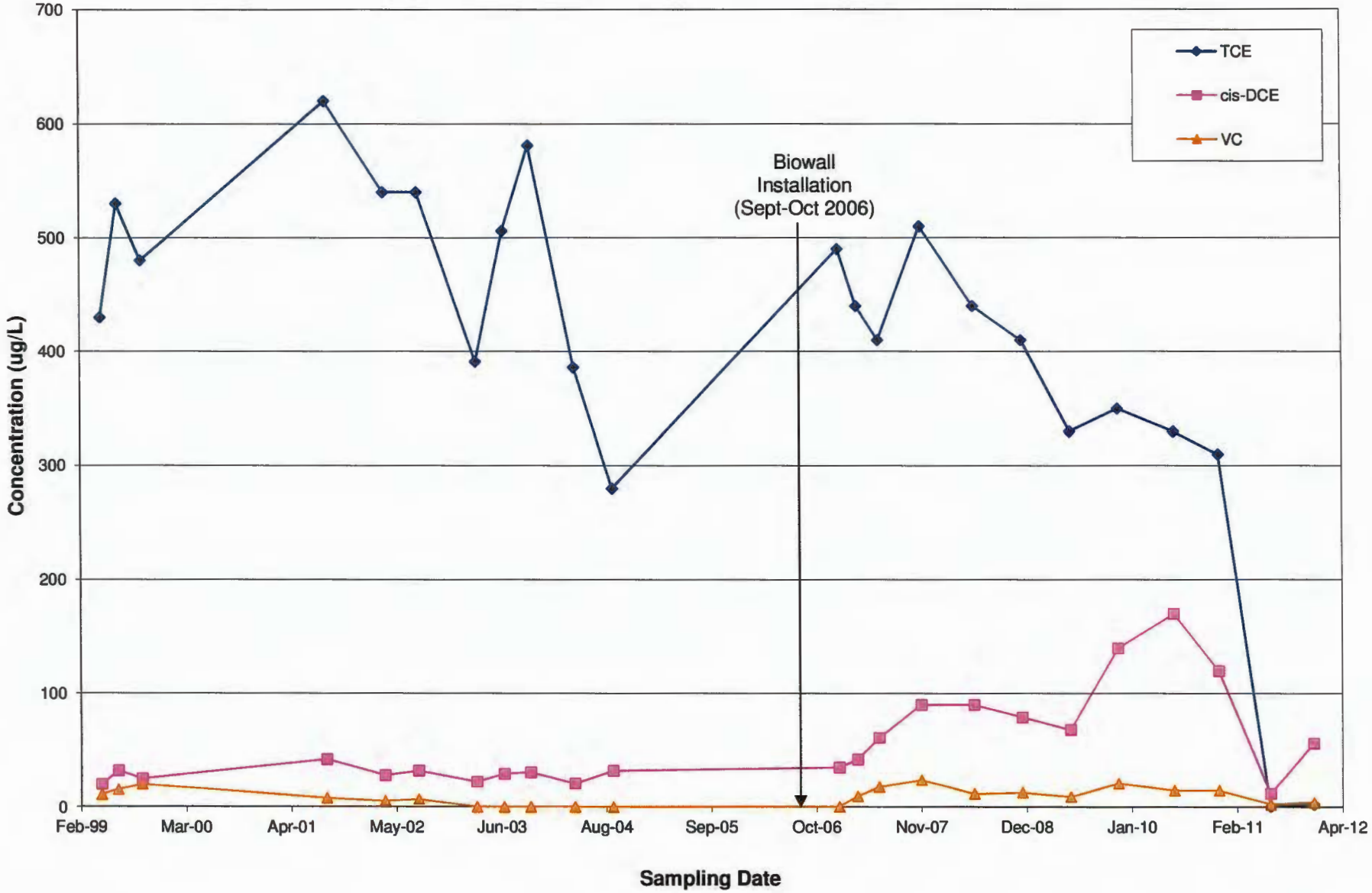
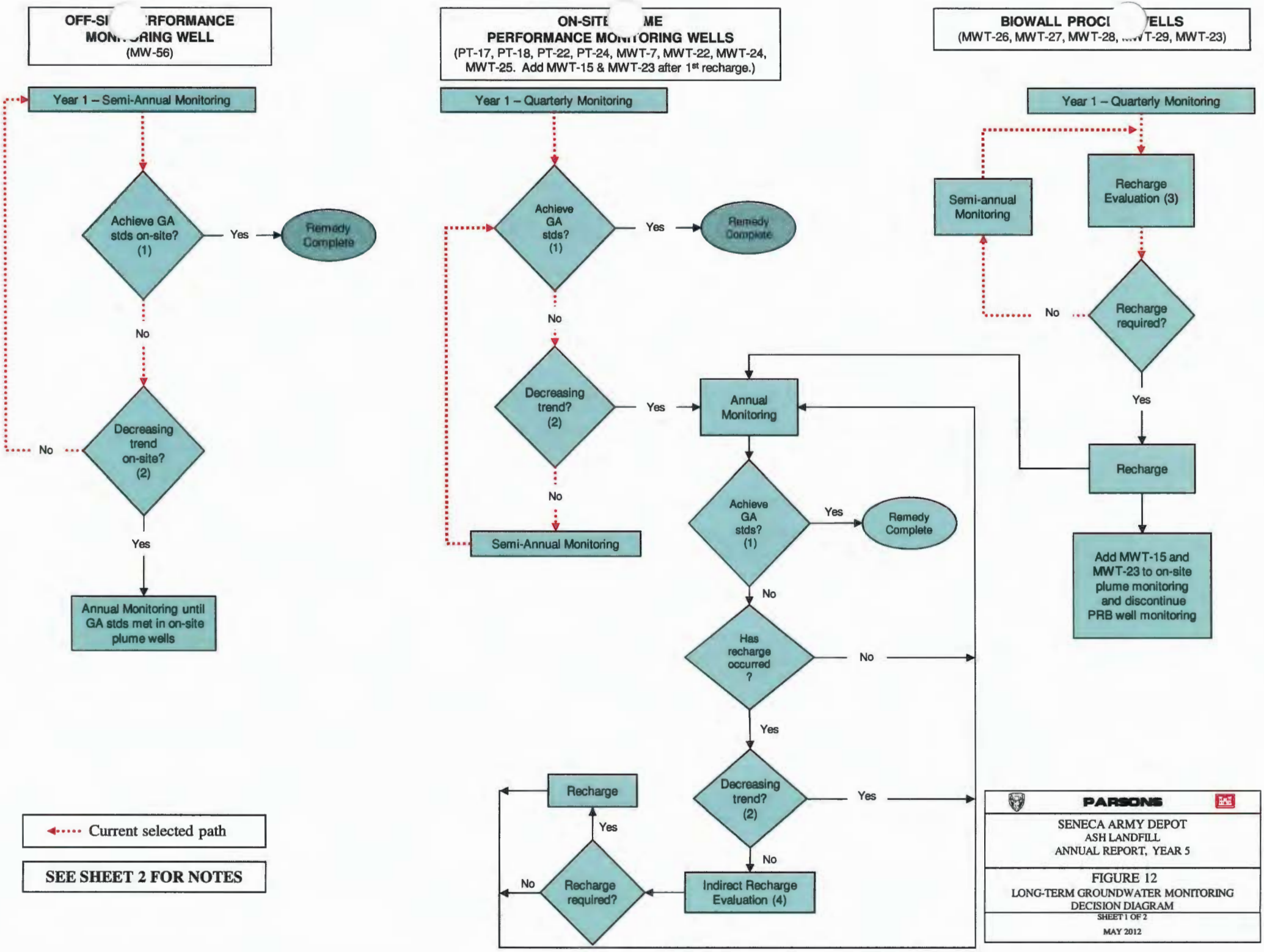


Figure 11C
Historic Concentrations of Chlorinated Organics at MWT-7
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity




OFF-SI RFORMANCE MON. RING WELL
(MW-56)
Year 1 – Semi-Annual Monitoring
Achieve GA stds on-site? (1)
Yes
Remedy Complete
No
Decreasing trend on-site? (2)
No
Yes
Annual Monitoring until GA stds met in on-site plume wells
ON-SITE ME PERFORMANCE MONITORING WELLS
(PT-17, PT-18, PT-22, PT-24, MWT-7, MWT-22, MWT-24, MWT-25. Add MWT-15 & MWT-23 after 1st recharge.)
Year 1 – Quarterly Monitoring
Achieve GA stds? (1)
Yes
Remedy Complete
No
Decreasing trend? (2)
Yes
No
Semi-Annual Monitoring
Annual Monitoring
Achieve GA stds? (1)
Yes
Remedy Complete
No
Has recharge occurred ?
No
Yes
Decreasing trend? (2)
Yes
No
Indirect Recharge Evaluation (4)
Recharge required?
No
Yes
Recharge
BIOWALL PROCI ELLS
(MWT-26, MWT-27, MWT-28, MWT-29, MWT-23)
Year 1 – Quarterly Monitoring
Semi-annual Monitoring
Recharge Evaluation (3)
No
Recharge required?
Yes
Recharge
Add MWT-15 and MWT-23 to on-site plume monitoring and discontinue PRB well monitoring
Current selected path
SEE SHEET 2 FOR NOTES
PARSONS
SENECA ARMY DEPOT
ASH LANDFILL
ANNUAL REPORT, YEAR 5
FIGURE 12
LONG-TERM GROUNDWATER MONITORING DECISION DIAGRAM
SHEET 1 OF 2
MAY 2012

NOTES:

1. Achieving GA Stds: The condition of achieving GA standards applies to achieving groundwater standards for all COCs in all of the On-Site Plume Wells. If GA standards are achieved in the On-Site Plume Wells for two successive monitoring events, then the remedy is complete and no further monitoring is required at the site.

2. Decreasing Trend: After each year of sampling, the Army will review the results to determine if the chemical concentrations of the COCs are increasing, decreasing, or are unchanged. Graphical and statistical analyses will be used as the basis for this determination. For example, data points will be plotted and a best fit line (linear regression) will be graphed. The slope of the best fit line is representative of the trend in concentration; a negative slope indicates a decreasing trend in COC concentrations. A decreasing COC trend indicates that the potential for contaminants to migrate and negatively impact groundwater further downgradient is decreasing, and that the plume is being effectively managed by the remedy. Any evaluation of trends in contaminant concentrations will take into account that historic data at the Ash Landfill shows that there are seasonal fluctuations in contaminant concentrations. Semi-annual monitoring during wet and dry seasons is appropriate until it is established in which season maximum concentrations are observed. Annual monitoring would occur in the season of maximum concentrations.

3. Recharge Evaluation:

• Determining the need to recharge a biowall segment requires a review of chemical concentrations and geochemical parameters by an experienced professional. A specific, absolute set of conditions or parameter values are not appropriate to determine the need to recharge. Rather, a lines-of-evidence approach will be used that correlates a decrease in the efficiency of the system to degrade chloroethenes to geochemical evidence that indicates the cause is due to substrate depletion.

• The following parameters will be evaluated on an annual basis using at least two consecutive rounds of sampling data in order to determine if recharge of the biowalls is necessary:

a. COC concentrations in the wall. If COC concentrations have rebounded by greater than 50% for any single sampling event, this will indicate that recharge should be considered. Concentrations within the biowalls, not at downgradient locations, will be used to make this evaluation so that the effectiveness of the wall itself is being measured without the interference of effects such as desorption and mixing.

b. Geochemical parameters, specifically ORP, TOC, and DO, in the wall. Benchmark values will be used initially to evaluate anaerobic conditions in the groundwater. These benchmarks are:

- ORP < -100 Mv
- TOC > 20 mg/L
- DO < 1.0 mg/L

Parameters described in a and b above are intended to be used as guidelines and will be considered in the evaluation if, and when, a depletion of bioavailable organic substrate results in a rebound in geochemical redox conditions under which effective biodegradation does not occur.

4. **Indirect Recharge Evaluation**: Once the biowalls are recharged the first time, an indirect recharge evaluation will be conducted if an increasing trend in COC concentrations is observed in the plume performance monitoring wells. An increasing trend is a positive slope on the best-fit line, described in *Note 2* above. Two biowall monitoring wells, MWT-15 and MWT-23, will be added to the Plume Performance Monitoring program after the first recharge is completed. The evaluation will review the chemical and geochemical data and determine if the contaminant increase is a result of poor biowall performance or due to other issues, such as seasonal variations, recent precipitation events, desorption, etc. As stated in Note 2, a rebound in concentrations of COCs of 50% in MWT-15 and MWT-23 in two consecutive monitoring rounds is a major indication that recharge is needed. Once this COC rebound is observed, the geochemical parameter concentrations at MWT-15 and MWT-23 will be reviewed. In addition, conditions at the other plume performance wells will be reviewed and compared to the conditions observed at those wells at the time that the initial recharge was required. The Army will determine if similar conditions in the well provide further proof that carbon source recharge is needed again.

APPENDIX A

FIELD FORMS FOR 11R2011 and 12R2011

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SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT 17

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/21/11
INSPECTORS: MCE
PUMP #: Peristaltic
SAMPLE ID #: AshGW-20206

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1100	90's	Sun		Roman	North		OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0 0026	0.041	0 163	0 367	0.654	1 47
LITERS/FOOT	0 010	0.151	0 617	1 389	2.475	5 564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 1.6

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	7.79					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	N/A	7.21			1125

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
	11.37	Flow through cell full							
1137	7.30	15		Not Enough Water		0.648	6.36	-39	9.9
1147	7.3	15				0.594	6.81	-61	7.8
1157	7.3	13				0.592	6.73	-14	5.8
1207	7.31	11				0.594	6.57	-9	5.5
1217	7.3	12				0.593	6.57	-22	4.0
* Recharge Extremely Slow, Waiting for Recharge Between Containers									
1423	Sampling complete			0.85	15.8				

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW2026	1217	JK
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field		1425	
6	Mn+ (HACH)					field		1425	
7									

COMMENTS: (QA/QC?)

Unit Serial #
Horiba - 14581
Sonde - NiCREBX
Lamotte 3357
Hach 05070
YSI DO 14480

Assisting EJK while waiting for well to recharge

Ferrous Iron = 0.64 mg/L
MnO_4 = Limit over range

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: ~~AGWT-18A~~ PT-18A

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/22/11
INSPECTORS: MF
PUMP #: 16963
SAMPLE ID #: ACBW20207

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0930	80S	Sun	3	3	NE		OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0 0026	0 041	0 163	0 367	0 654	1.47
LITERS/FOOT	0 010	0 151	0.617	1 389	2 475	5 564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.6 gallons

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	17.84					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		9.54			

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0950	started	Pumping		DTW 9.45					
1000	9.61	410							
1005	9.73	410		1.67	15.3	1.23	6.56	-14	11
1020		flow through cell		Leaking		1.30	6.59	-48	9.0
~~1045~~		Flow through Cell		Fixed				~~-13~~	~~4.5~~
1058	9.84	30		1.00	15.3	1.23	6.69	-13	4.5
1100	9.86	34		0.91	14.7	1.24	6.63	-9	4.3
1105	9.88	32		0.76	14.3	1.24	6.61	-17	3.2
1110	9.91	20		0.53	14.0	1.25	6.63	-10	3.4
1115	9.91	25		0.42	13.88	1.26	6.59	-8	3.8
1120	9.91	25		0.43	13.7~~3.5~~	1.26	6.62	-10	3.3
1135	9.89	30		0.13	13.5	1.27	6.59	-11	3.2
1140	9.84	25		0.14	13.4	1.27	6.59	-10	3.2
1145	9.89	25	~2 1 gallon	0.19	13.4	1.27	6.62	-17	3.3
Sampled @			1145						

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	AIBW20207	1145	MFR
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

Lamotte 3557
YSI F 0176
Horiba 14581

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/22/11
INSPECTORS: JK + MEF
PUMP #: 15094
SAMPLE ID #: ALBW20208

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND DIRECTION (FROM) (0 - 360)	GROUND / SITE SURFACE CONDITIONS
0845	70's	Sunny		Calm		

MONITORING INSTRUMENT	MONITORING DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
0.99 gallons

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	11.68 + 0.27 = 11.95					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		9.91	9.65 w/pump?		

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
		0805	Begin Setup						
0825		Started Pumping							
1015	10.29	14		0.79	13.4	1.27	6.74	-103	13
1020	10.29	13		0.87	13.5	1.28	6.73	-100	10
1025	10.32	15		0.94	13.4	1.28	6.72	-99	8.9
1030	10.31	8		0.96	13.3	1.28	6.72	-85	8.8
1035	10.31	5		0.98	13.3	1.29	6.72	-81	8.7
		Stopped Pumping well moving to different well to Allow							
		for Recharge, will return in pm							
		Return @ 1220		DTW 10.1		-setup for Sample			
1230	—	25		0.45	15.5	0.996	6.80	-29	70
1235	—	30		0.43	15.3	0.987	6.73	-24	80
1240	—	35		0.39	15.3	0.966	6.70	-22	75
1245	—	35		—	—	0.852	6.65	-73	65
1250	—	34		—	—	0.848	6.64	-71	35
1300	—	35		—	—	0.859	6.62	-68	23
1310	—	30		—	—	0.875	6.62	-63	10
1315	—	28		—	—	0.876	6.64	-62	3
1320	—	10		—	—	0.876	6.63	-63	2
1325	—	5		—	—	0.877	6.63	-62	2

Stopped for ~10 mins For Recharge

Sampled @ 1335

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	AlbW20208	1335	MEE
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

Lamotte 35-57

YSI F0176

Horiba LL1581

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER PT 24

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-24

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/21/11
INSPECTORS: MEE
PUMP #: 11709
SAMPLE ID #: ACBW20208

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1500	100	Sun		10 mph	W		OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 9.75

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	11.92					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	N/A	6.65 w. 79 - w/pump	6.81		1530

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1535	6.81	~~50~~ 100		1.07	15.1	0.496	6.65	-64	5.2
1550	6.81	100		0.88	14.7	0.519	6.45	-11	1.7
1555	6.81	100	1 gallon	0.88	14.7	0.516	6.416	-2	1.2
1600	6.81	100		0.86	14.7	0.519	6.49	-5	1.5
1605	6.81	100		0.85	14.7	0.521	6.46	-3	1.00
1610	6.81	100		0.83	14.7	0.523	6.45	-2	1.00
1615	6.81	100	2 gallons	0.83	14.7	0.522	6.74	-21	2.00
1620	6.81	100		0.83	14.7	0.524	6.71	-18	1.30
1625	6.81	100		0.82	14.6	0.524	6.69	-16	1.30
1630	6.81	100		0.83	14.6	0.525	6.68	-16	1.00
1635	6.81	100		0.82	14.6	0.526	6.72	-18	1.70
1640	6.81	100	~3 gallons	0.82	14.6	5.28	6.69	-16	1.60
	Sample	@ 1640							

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY / DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW2028	1640	JK
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

Unit	Serial #
Horiba	14581
sonde	7V10CEBX
Lamotte	3357
# YSI	14480

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-56

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 10/4/11
INSPECTORS: DBO/ME
PUMP #: Pine 8715
SAMPLE ID #: ALBW20214

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1116	50's	overcast	—	5 mph	NW	moist

MONITORING INSTRUMENT	DETECTOR
OVM-580	PID
—	—

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	6.3' + 0.27' Top of Probe			—	—	—

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	3.60' w/out probe	3.55' w/ Probe in well (USGS)			1121

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

LaMotte

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	YSI DISSOLVED OXYGEN (mg/L)	YSI TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1116	3.55	Pump ~~Turb~~ &	YSI probe						
1127	3.55	130		0.17	15.6	0.677 ~~.708~~	6.82	-108	55
1132 ~~1332~~	3.63	126		0.25	15.6	0.673	6.80	-109	34
1138	3.64	154		0.17	15.5	0.669	6.88	-101	21
1143 ~~1148~~	3.66	138	~0.5 gals	0.21	1.51	0.668	6.87	-107	8.7
1149	3.65	150		0.21	15.4	0.666	6.88	-106	5.7
1154	3.66		~1 gal	0.22	15.4	0.664	6.90	-105	5.0
1159	3.66			0.21	15.4	0.662	6.89	-105	4.8
1209	Sample time —								
			~1.25 gals purged						
			Sample ID	ALBW 20214					
			Sample Time	1209					
			Collected	3 VOAs					

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ALBW		
2	MEE (AM20GAX)		4 deg. C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg. C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg. C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-7

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/22/11
INSPECTORS: JK
PUMP #: 8706
SAMPLE ID #: ALBW20210

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1150	95	SUNNY		0	N/A	DRY

MONITORING INSTRUMENT	MONITORING DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = {(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)}
5.8 x 0.163 x 3 = 2.5 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
Horiba #14480 LaMotte #03158	13.46+.27 = 13.73					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
YSI #8DAN5ARP	N/A	8.45 (w/ pump)		12.73	1155

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	8.34 (w/ pump & tubing)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1135		Start	Setup						
1155		Start	Pump						
1210	8.55	Leaking Horiba Cell, stopped pump, fix restart pump							
1225	~~40~~	40	0	1.20	13.2	0.740	6.81	-135	12
1230	8.58	110		1.17	13.2	0.760	6.69	-136	11
1235	8.59	130		1.13	13.1	0.776	6.63	-133	6.1
1240	8.58	105		1.08	13.1	0.781	6.60	-124	5.8
1245	8.59	112		1.09	13.0	0.779	6.61	-114	2.4
1250	8.59	115		1.08	13.0	0.778	6.60	-110	5.2
1255	8.60	118		1.07	12.9	0.777	6.62	-109	5.0
1300	8.61	120		1.08	12.9	0.778	6.65	-106	5.0
1310	8.60	119	~2.0 gal	1.07	12.9	0.779	6.66	-104	4.8
1325	8.59	102		1.05	12.9	0.780	6.67	-100	1.2
*	Waiting	for	other DO	YSI meter		0.780	6.68	-95	2.6
1340	8.60	95		1.05	12.9	0.779	6.69	-93	2.8
1350	*	Inserted 2nd DO YSI Meter, reading decreased to 0.12 mg/L							
1355	8.59	120	~3.0 gal	0.12	13.5	0.785	6.70	-92	0.96
1400	8.60	100		0.11	13.1	0.786	6.70	-89	0.95
1405	8.58	105		0.10	13.0	0.785	6.70	-87	0.98
1410	8.60	100		0.08	13.0	0.783	6.69	-85	0.97
1415	8.60	100	~4.0 gal	0.08	13.0	0.784	6.70	-85	0.85

1420 Took Samples

- 3 VOC
- 1 Sulfate
- 2 MEE
- 2 TOC

Fe: 0.45 mg/L
Mn: 0.4 mg/L

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ACL BW 2010 HTO	1420	
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA	HTO	1420	
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA		1420	
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE		1420	
5	Fe+ (HACH)					field		1420	
6	Mn+ (HACH)					field		1420	
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-22

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/20/11
INSPECTORS: JK
PUMP #: 14948
SAMPLE ID #: ALBW20211

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1600	95	~~9~~ SUNNY		5		DRY	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
4.25 x 0.163 x 3 = 2.1 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
Horiba #: N6CRERX LaMotte #: 07357 YSI #: 14980	~~14.65~~ MEF 14.92					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		8.40			

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1600	Started Pump								
1620	9.20	90		0.82	13.1	1.03	6.27	-60	32
1630	10.33	120		0.86	13.5	1.25	5.99	-59	21
1635	10.35	110		0.93	13.7	1.23	5.92	-59	13
1640	10.70	115	0.75 gal	0.94	13.6	1.25	5.89	-59	10.2
1645	10.90	115		0.93	13.4	1.29	5.92	-60	7.1
1655	11.40	110		0.86	13.2	1.29	6.09	-66	6.3
1700	11.60	80		0.86	13.2	1.28	6.06	-63	4.2
1710	12.00	90		0.84	12.9	1.25	6.14	-65	3.8
1720	Put in 2nd YSI for DO reading, DO decreased to 0.14 mg/L								
1725	11.95	85		0.15	13.2	1.28	6.18	-71	3.6
1730	12.08	90	~2.0 gal	0.16	13.1	1.29	6.18	-70	3.7
1735	12.30	100		0.15	13.0	1.28	6.20	-72	3.5
1740	12.45	105	~2.1 gal	0.16	13.0	1.27	6.20	-71	3.6
1745	Took Sample - 3 VOC								

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA			
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-23

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/19/11
INSPECTORS: JTK/MEE
PUMP #: 14948
SAMPLE ID #: ALBW20215

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1220	~86	Sunny		3mph	North	

MONITORING INSTRUMENT	MONITORING DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
3.14 x .163 = .5 x 3 = 1.5

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
Honba # WNJX9WKS lamotte# 03357 YSI# 19480	13.76 ~~13.49~~					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		10.35	10.66	124	1225

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1225	Bladder		Pump Started						
1245	10.65	120		0.77	13.7	1.25	6.19	-120	80
1250	10.65	100		0.78	13.6	1.26	6.19	-124	45
1255	10.65	90		0.79	13.5	1.25	6.20	-125	33
1300	10.66	63	~0.75	0.80	13.5	1.23	6.20	-127	27
1305	10.71	70		0.80	13.5	1.22	6.20	-128	25
1315	10.71	75		0.81	13.4	1.20	6.20	-130	21
1325	10.70	80		0.81	13.4	1.21	6.20	-131	13
1330	10.68	70		0.82	13.4	1.20	6.21	-132	8.87
1335	10.68	65		0.82	13.4	1.20	6.21	-134	10.10
1340	10.68	62		0.82	13.4	1.22	6.20	-133	8.11
1345	10.68	70		0.83	13.3	1.21	6.20	-136	8.60
1400	10.68	70	~1.75	0.84	13.2	1.20	6.20	-137	5.28
1405	10.66	70		0.84	13.2	1.20	6.20	-136	5.75
1410	10.66	70	~2.0	0.85	13.2	1.20	6.21	-136	5.97
1415	Took	Samples							
		3 VOC Vials		, 1 Sul	fate	, 2	TOC		
		2 mBE							
			Fe+:	330 mg/L		Limit			
			Mn:	8.0 mg/L					

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY / DATE
					COUNT VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW20215	1415	JK
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA		1425	JK
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA		1435	JK
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE		1425	JK
5	Fe+ (HACH)					field		1425	JK
6	Mn+ (HACH)					field		1425	JK
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-24

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/21/11
INSPECTORS: JTK
PUMP #: 11715
SAMPLE ID #: ALRW20212

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
~~1140~~ 1140	97	SUN		S	N	DRY	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
3 × 0.163 × 3.46 = 1.69 gal

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
Horiba: HISTORIC DATA						
YSI:	12.79 + 0.22 = 13.01					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
LaMotte:		9.55			

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1215	Pump Started								
1310	10.75	160		0.34	13.8	0.951	6.56	-98	20
1315	11.04	90		0.33	13.6	0.929	6.59	-112	21
1320	11.09	90		0.39	13.6	0.932	6.60	-103	22
1325	10.92	85		0.40	13.7	0.933	6.61	-102	19
1330	10.98	82		0.41	13.6	0.931	6.60	-103	18
1335	DO started rising, Readjusted DO Meter in well, paused pump, DO dropped to ~~drum~~ 0.02, restarted pump, DO increased to > 1.0, took out pump from well to check air line. Air line OK, reinserted pump into well. DO increased, well is dry, allowing to recharge.								
1428	Restart Pump once			water level	returned	to 10.66 ft			
1435	10.95	50		0.85	13.4	0.829	6.75	-71	75
~~1450~~ 1450	10.97	40		0.63	13.2	0.842	6.60	-71	
1455									

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC-8260B		4 deg C	HCL	3/ 40 ml	VOA			
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #:

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: MW5T-24
INSPECTORS: MEF
PUMP #: 8915
SAMPLE ID #: ALBW20212

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1415	90s	SUN				

MONITORING INSTRUMENT	MONITORING DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0 0026	0 041	0 163	0 367	0 654	1 47
LITERS/FOOT	0 010	0 151	0 617	1 389	2 475	5 564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
1.68 gallons

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	13.00					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	NA	9.61			1413

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
H22	9.72	25				0.707	6.84	58	100
H30	9.91	20				0.700	6.67	28	100
1435	9.99	20				0.727	6.68	26	95
1440	9.99	18				0.723	6.67	27	85
1445	9.99	18		0.39	14.8	0.735	6.67	27	75
			Sample collected @ 1445						

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW012	1445	MEE
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

Lamotte: -3357
YSI-02F0176
Horiba: 14588

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-25

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 8/20/11
INSPECTORS: MCE
PUMP #: P7175
SAMPLE ID #: confluence - ALBW 20213

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1115	90's	SUN	high	omph	—		OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 2.23

YSI#: 02F0176 HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
Horiba: FA0YBA8A	13.289					
LaMotte: S3801662 DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME	
	N/A	8.65	10.90	11.84	1130	
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	8.46 w/ pump	PUMP AFTER SAMPLING (cps)			

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
	1130	Start Purging							
1155	9.41	85		5.28	15.4	~~133~~	6.98	-133	5.5
1200	9.71	85		0.11	15.3	~~135~~	6.95	-135	26
1205	9.81	85		0.10	15.2	1.24	6.94	~~HR~~ -127	17
1210	10.02	75		0.09	15.1	1.15	6.93	-125	50
1215	10.20	100		0.10	15.1	1.14	6.90	-122	3.6
1225	10.41	110		0.10	14.8	1.11	6.90	-111	3.0
1230	10.51	85		0.09	14.7	1.12	6.90	-110	14
1235	10.61	90		0.06	14.6	0.605	7.01	-84	16
1240	10.71	90		0.07	14.5	0.593	6.95	-59	3.6
1245	10.76	90	1.25 gallons	0.07	14.5	0.562	6.94	-45	3.7
1250	10.90	35		0.07	14.4	0.557	6.80	-27	4.0
		→	Very slow w/	recharge Sample		Stopped Pump Assisted			
~~1330~~	~~10.76~~	~~35~~							
1330	10.78	35		0.02	14.0	1.15	6.79	9	11
1335	10.86	35		0.01	14.0	1.17	6.77	11	13
1340	10.90	30	1.75 gallons	0.03	14.0	1.13	6.72	13	~~HR~~ 13
1345		sample Taken							

* Horiba Flow through cell Became clogged & Empty.

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCl	3/ 40 ml	VOA	ALSW202 3	1345	
2	[illegible] (AM20GAX)		4 deg C	HCl	2/ 40 ml	VOA	N/A		
3	TOC (9060A)		4 deg C	HCl	2/ 40 ml	VOA	~~[illegible]~~ 3 N/A		
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	~~[illegible]~~ 3 NA		
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

[illegible]

IDW INFORMATION:

[illegible]

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-26

PROJECT:	Ash Landfill LTM Groundwater Sampling - Round 11	DATE:	7/20/11
LOCATION:	ROMULUS, NY	INSPECTORS:	MEE
		PUMP #: controller 7	40132
		SAMPLE ID #:	70310-Pump ALBW20216

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0800	80's	Sunny		3 mph	NE		OVM-580	PID

WELL VOLUME CALCULATION FACTORS						
DIAMETER (INCHES):	0.25	1	(2)	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 0.7 gal ~2.1 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
YSI# 02F0F16 PAOYBABA Horiba# ~~[illegible]~~ 7K LaMott# 31381662	13.22 (ME) 12.95					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	N/A	~~[illegible] w/ Probe/Pump~~ 8.92 w/o Probe/Pump	9.10	11.68	0823

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	7.82 w/ Probe/Pump	PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
	7.82	Begin setup @ 0800							
0823	7.82	Begin Pumping							
0840	8.21	110		0.35	17.4	2.02	6.73	-28	13
0845	8.28	100	0.25	0.11	17.3	1.99	6.73	-33	9.9
0850	8.4	70	~~0.5~~	0.10	17.4	1.93	6.72	-39	9.0
0853	8.46	70		0.11	17.4	1.87	6.71	-42	8.6
0900	8.52	70		0.12	17.3	1.81	6.70	-41	7.0
0905	8.58	68		0.15	17.2	1.80	6.69	-39	6.8
0910	8.68	73	1 gallon	0.11	17.2	1.77	6.68	-38	5.2
0915	8.72	80		0.13	17.1	1.71	6.67	-35	3.8
0920	8.77	64		0.13	17.1	1.70	6.66	-33	4.0
0925	8.89	58		0.10	16.9	1.68	6.66	-32	2.1
0930	8.91	60	1.25	0.08	16.8	1.67	6.62	-24	3.6
0935	8.94	55		0.08	16.7	1.67	6.64	-30	2.0
0945	9.02	50		0.07	16.7	1.67	6.65	-32	2.20
0950	9.10	55	2.00	0.07	16.6	1.67	6.64	-31	2.4
Samples taken @ 1000									

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY / DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	AEW20216	1000	
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA	↓	↓	
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	↓	↓	
5	Fe+ (HACH)		—		1	field	~~1043~~	1043	
6	Mn+ (HACH)		—		1	field	~~1049~~	1049	
7									

COMMENTS: (QA/QC?)

FE: 0.89 mg/L
MNO4 6.3 mg/L
Pump #~~1~~

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-27

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/20/11
INSPECTORS: JTK
PUMP #:
SAMPLE ID #: ALBW20219/20218

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0930	95	SUNNY		5	S	Dry	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
3.61 x .163 x 3 = 1.76 gal

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
Horiba# 7V6CREBX Lamotte# 03357	12.52 (12.79)					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
YSI# 14480		8.64			

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

Pump Start: 0930

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1000	9.51	120		0.76	15.9	2.05	6.27	-116	29.5
1005	9.55	120	~1.25 gal	0.76	15.8	1.98	6.28	-114	20.2
1010	9.56	130		0.77	15.8	1.93	6.26	-112	10.68
1015	9.55	131		0.77	15.7	1.90	6.25	-112	7.75
1025	9.60	129	~2 gal	0.77	15.7	1.86	6.24	-111	6.70
1030	9.57	130		0.77	15.6	1.86	6.24	-109	5.13
1035	9.57	133		0.77	15.6	1.86	6.24	-108	4.90
1040	9.57	130		0.77	15.6	1.82	6.25	-109	3.8
1045	9.57	129		0.77	15.6	1.84	6.29	-108	4.0
1050	9.58	128		0.77	15.6	1.82	6.30	-108	3.8
* 1100	Put in DO Probe, YSI #3210 into well, DO reading decreased to 0.02								
1110	9.57	127	~4 gal	0.01	16.0	1.76	6.31	-110	3.8
1115	9.56	128		0.01	16.0	1.77	6.32	-110	3.7
1120	9.56	126		0.01	16.0	1.76	6.30	-109	3.5
1125	9.57	125	~4.75 gal	0.01	16.0	1.75	6.30	-109	3.2
1135	~~1135~~ JK Took Sample			ALBW20217					
1210	Took Sample			ALBW20217MS					
1239	Took Sample			ALBW20217MSD					
1305	Took Sample			ALBW20218					
			Fe+: 3.30 mg/L limit			Mn: 22.0 mg/L limit			

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA			
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-28

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 11
LOCATION: ROMULUS, NY

DATE: 7/19/10
INSPECTORS: MEE/JTK
PUMP #: 8915
SAMPLE ID #: ALBW20219

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1510	90's	SUNNY		3mph	N		OVM-580	PID
							N/A	N/A

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
3
4.21 × 3 × 0.163 = 2.1

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
Horiba #: 20ANSA99 Lamotte #: 03357 YSI: Pine #14480	12.88 @ +2.61					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	N/A	8.40	8.99	11.6	1445

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	PUMP AFTER SAMPLING (cps)
	N/A	N/A

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
~~1445~~	8.90	120		1.16	16.0	1.24	6.18	-122	14.9
* 1500 ~~1450~~	8.86	97		1.19	15.9	1.26	6.18	-120	2.15
1555 ~~1455~~	8.86	98		1.10	15.8	1.31	6.19	-118	9.45
1600	8.83	90	~0.25 gal	1.06	15.8	1.32	6.19	-119	7.66
1605	8.82	10		1.03	15.8	1.33	6.19	-121	4.27
1610	8.84	110		0.98	15.8	1.361	6.18	-125	5.55
1615	8.83	100		0.97	15.8	1.34	6.19	-126	4.28
1620	8.81	97		0.93	15.9	1.35	6.19	-131	4.69
1625	8.81	100		0.93	15.9	1.35	6.18	-135	3.99
1630	8.87	96	~1 gal	0.92	15.9	1.35	6.17	-138	3.85
1635	8.95	98		0.92	15.9	1.37	6.16	-140	3.35
1640	8.87	95		0.91	15.9	1.38	6.16	-141	3.43
1645	8.97	96		0.92	15.9	1.39	6.16	-141	3.41
1650	8.87	85		0.92	15.9	1.40	6.16	-142	3.61
1700	8.91	75	~2 gal	0.461	15.9	1.412	6.15	-140	3.611 *
1705	8.71	70		0.37	15.4	1.442	6.15	-140	3.68
1710	~~8.87~~	80		6.30	17.0	1.412	6.14	-137	3.70
1715	8.64	110	~2.25 gal	0.28	16.9	1.411	6.14	-135	3.93
		TOOK Samples						mg/L	
3	VOC		2 TOC			Fe+:	3.30	limit	
1	Sulfide		2 MEE			Mn:	8.9	mg/L	

* Tryed 2nd YSI for DO Reading (Pine #3210, S/N 02F0176)

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW20219	1715	JK
2	MEB (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA	↓	↓	JK
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			JK
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			JK
5	Fe+ (HACH)					field		1715	JK
6	Mn+ (HACH)				none	field		1715	JK
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-29

PROJECT:	Ash Landfill LTM Groundwater Sampling - Round 11	DATE:	7/20/11
LOCATION:	ROMULUS, NY	INSPECTORS:	MEE
		PUMP #:	1709
		SAMPLE ID #:	ALBW20220

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1500	90's	sun		3mph	East		OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]: 2.03

YSI#02F0F76 HISTORIC DATA Honba# FAOYBABA LaMott# 31381662	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	~~12.85~~ 13.12					
DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)		DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		8.08 w/o meters 8.48 w/ meters		9.70	11.85	1515
RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)			PUMP AFTER SAMPLING (cps)		

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1515	Begin pumping @								
1525	8.81	70		0.10	15.4	1.68	6.52	-104	18
1530	8.82	60		0.12	15.3	1.63	6.48	-102	18
1535	8.89	150		0.12	15.3	1.63	6.48	-103	19
1540	8.95	40		0.12	15.3	1.60	6.44	-103	15
~~1545~~	~~9.00~~	~~80~~		~~0.13~~	~~15.2~~	~~1.54~~	~~6.46~~	~~-96~~	~~16~~
1550	9.06	45		0.13	15.1	1.54	6.44	-94	14
1610	9.20	35		0.07	14.8	1.45	6.51	-84	9.5
1615	9.3	48	0.5 gallons	0.07	14.8	1.36	6.56	-89	5.4
1630	9.41	54		0.06	14.7	1.35	6.55	-90	3.5
1635	9.45	58		0.05	14.6	1.36	6.54	-89	3.4
1640	9.52	52		0.05	14.6	1.36	6.53	-89	3.0
1645	9.56	70		0.05	14.6	1.38	6.56	-91	2.9
1650	9.61	70		0.06	14.5	1.36	6.56	-90	3.0
1655	9.65	60	1 gallon	0.05	14.7	1.37	6.65	-90	2.9
1700	9.70	60		0.05	14.7	1.37	6.55	-90	2.8
	Sample		@ 1730						
~~1725~~			Fe - 0.03 mg/L						
1730			MnO_4 12.1 mg/L						

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ARBW20220	1710	
2	MBE (AM20GAX)		4 deg. C	HCL	2/ 40 ml	VOA	↓	↓	
3	TOC (9060A)		4 deg. C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg. C		1 x 250 mL.	HDPE	↓	↓	
5	Fe+ (HACH)					field		1725	
6	Mn+ (HACH)					field		1730	
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-17
PROJECT: Ash Landfill LTM Groundwater Sampling - Round ~~10~~ 12		DATE: 12/13/11
LOCATION: ROMULUS, NY		INSPECTORS: ME
		PUMP #: 11710
		SAMPLE ID #: ALBW20221

WEATHER / FIELD CONDITIONS CHECKLIST - (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1319	40's	Sun/Cloudy		0-5	NW	Dry	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	(2)	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

4.79 x 0.163 = 0.78 x 3 = 2.34 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	7.51 ~~10.22~~					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	2.72	2.76	6.51	13:32

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	~~SPEC.~~ COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1324	2.69	w/ Pumps in		YSI 85	YSI 85	YSI 650		→	Lamotte
1332	Pumpstart - Notice tubing crack				Res	Stop pumping			
1410		Resumed Pumping							
1414	2.79	~~X~~250		6.21	9.6	0.494	7.19	90.6	
1419	2.75	120	0.5	5.61	10.1	0.492	6.91	79.8	55.5
1424	2.75	132		5.03	10.1	0.496	6.86	81.5	21.6
1434	2.75	120	1.5	4.80	9.9	0.495	6.81	84.6	11.0
1439	2.75	120		4.40	9.9	0.494	6.80	86.4	9.32
1444	2.75	132		4.19	9.9	0.494	6.78	87.3	7.81
1449	2.75	119	1.75	3.83	10.00	0.495	6.77	88.2	6.71
1454	2.75	130		3.52	9.9	0.493	6.75	89.5	4.70
1459	2.75			3.25	10.00	0.493	6.74	90.2	4.84
1504	2.75			3.01	10.00	SPEC COND. 0.687	6.74	90.9	
1509	2.76	132	3.0 ~~2.0~~	2.63	10.00	0.686	6.73	91.0	3.03
1519									
		Sample @ 1529							
			Fe = 0.01	mg/L Fe					
			Mn: 0.6	mg/L Mn					

SN #'s 3110 → 2674 → 01248

H1018 →

8146
X034

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALSC 20221	1529	BBO 12/13/4
2	MEB (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA	"	"	
3	TOC (9060A)		4 deg C	HCL	~~2/ 40 ml~~	~~Amber VOA~~	"	"	
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	"	"	
5	Fe+ (HACH)					field	0.01 mg/L		
6	Mn+ (HACH)					field	0.6 mg/L		
7									

COMMENTS: (QA/QC?)

YSI 650 XL #2674
YSI 85 DO #3210
LaMotte #01248
Bladder Pump #11710
Compressor #016250
water level #15773

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT18A

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/15/11
INSPECTORS: ME
PUMP #: 10298
SAMPLE ID #: ALBW 20222

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1140	44	Overcast	70	20	South	wet

MONITORING

INSTRUMENT	DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	12.79					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	6.22	6.39	11.79	1144

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
1148	6.12	Pump in well		YSI 85	YSI 85	YSI 650	YSI 650	YSI 656	Lamotte
1149	Pumps Started						6		
1154	6.36	150		0.12	11.0	1.712	6.98	25.2	14
1159	6.39	1510		0.15	10.8	1.724	6.77	36.2	11
1204	6.39	167		0.15	10.8	1.726	6.73	39.9	6.6
1209	6.39			0.15	10.7	1.732	6.70	44.2	
1214	6.39	148		0.14	10.7	1.735	6.67	48.0	4.3
1219	6.39	154		0.12	10.7	1.742	6.66	50.0	3.3
1224	6.39	149	~1.5 gal	0.11	10.7	1.745	6.65	52.7	1.8
1229	6.39	142		0.09	10.6	1.745	6.64	54.2	1.4
1234	6.39	142		0.09	10.6	1.750	6.63	55.5	1.00
1239	6.38	140		0.09	10.6	1.751	6.62	57.0	0.70
1244	6.39	140		0.09	10.6	1.751	6.62	57.3	0.40
1249	6.39			0.10	10.6	1.750	6.62	59.2	0.45
1254	6.39	140	2.2 gal	0.09	10.6	1.751	6.62	59.9	0.40
		Sample @ 1304							

GW SAMPLING RECORD

	SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC -CLP(Low Level) 8260B	✓	4 deg. C	HCL	3/ 40 ml	VOA	ALBW 78222	1304	
2	TOC		4 deg. C	HCl	2 x 40 mL	VOA			
3	MEE		4 deg. C	HCL	1 x 40 mL	VOA			
4	Sulfate/Chloride		4 deg. C	HCL	1 x 4 oz	HDPE			
5	Fe+		Field						
6	Mn+		Field						

COMMENTS: (QA/QC?)

Lamotte# 01248
YSI 85 # 3210
YSI 650 # 41308 + 04J1680 AB
Pump# 12298
Controller # 016250
WL Indicator # 21757

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT22
PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12		DATE: 12/14/11
LOCATION: ROMULUS, NY		INSPECTORS: ME
		PUMP #: 19095
		SAMPLE ID #: ALBW20223

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	DETECTOR
0844	30's	Sun		0-5	South	Moist	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.561

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	11.88					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	5.74	5.48	10.88	0904

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
0901	5.64	Pump In well		YSI 85	YSI 85	YSI 650	YSI 650	YSI 650	Lamotte
0904	Pump Started								
0912	5.94	150		0.58	10.3	1.163	6.04	205.8	10.92
0917	5.93	64		0.59	10.3	1.175	5.93	211.8	8.18
0922	5.95	114		0.58	10.3	1.164	5.89	214.7	7.91
0927	5.96	110		0.54	10.3	1.164	5.89	216.7	8.74
0932	5.96	100		0.49	10.3	1.164	5.91	217.2	
0937	5.96	98		0.44	10.3	1.167	5.92	216.3	3.85
0942	5.96			0.41	10.3	1.166	5.93	215.5	
0947	5.96	102	~0.5 gal	0.42	10.3	1.167	5.93	213.0	2.05
0952	5.96			0.39	10.3	1.165	5.94	212.7	
0957	5.96	100		0.32	10.3	1.164	5.95	210.1	1.37
1002	5.95	120		0.29	10.3	1.59	5.95	207.1	0.74
1007	5.95	120		0.27	10.3	1.161	5.95	204.3	0.44
1012	5.95	120	~1.25 gal	0.27	10.3	1.57	5.95	205.8	0.38
	Sample		@ 1022						

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC ~~CLP(Low Level)~~ 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ALBW 20223	1022	
2	SVOC 8270C		4 deg. C		1 x 1L	Am G			
3	PESTICIDES 8081		4 deg. C		1 x 1L	Am G			
4	PCBs 8082				1 x 1L				
5	METALS 6010 & 7###		4 deg. C	HNO3	1 x 500 mL	HDPE			
6	CYANIDE 9012		4 deg. C	NaOH	1 x 500 mL	HDPE			
7	Total Pet Hydrocarbon		4 deg. C	HCl	1 x 1L	Am G			

COMMENTS: (QA/QC?)

Lomotte # 0248
YSI 650 # 4308 + 4316000AB
YSI 85 # 3210
Pump controler # ~~00~~ 010250
Pump # 19095

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: PT-24

PROJECT:	Ash Landfill LTM Groundwater Sampling - Round ~~10~~ 12	DATE: 12/13/11
LOCATION:	ROMULUS, NY	INSPECTORS: BBO/ME
		PUMP #: 18731
		SAMPLE ID #: ALBW20224

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
848	30	Sunny		5-10	NW→SE	frozen

MONITORING INSTRUMENT	DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	(2)	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

6.98 × 0.163 = 1.14 gal × 3 = 3.41 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	11.85'					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	–	4.87'	4.89	10.85	907

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	–	PUMP AFTER SAMPLING (cps)	–

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
855	4.88	Pump in well		YSI 85	YSI 85	YSI 600	YSI 600	YSI 600	Lamotte
907		Pump Started							
0922	4.90	50		0.14	10.5	0.387	7.06	23[illegible]	12
0927	4.88	104		0.17	10.5	0.38[illegible]	6.86	21[illegible]	[illegible]
0932	4.90	102		0.17	10.5	0.392	6.80	188.2	10.6
0937	4.89	102		0.15	10.5	0.392	6.79	159.1	8.96
0942	4.88	106	0.25	0.14	10.5	0.391	6.78	133.1	6.81
0947	4.89	100		0.14	10.5	0.389	6.77	105.3	4.22
0952	4.88	100		0.13	10.5	0.390	6.77	92.3	3.96
957	4.88	106	1.0	0.14	10.5	0.388	6.77	82.4	2.58
1002	4.89	108		0.14	10.5	0.384	6.77	70.8	2.18
1007	4.89	100		0.14	10.5	0.389	6.77	63.3	2.46
1012	4.89	98		0.14	10.5	0.389	6.78	55.8	1.59
1017	4.89	102		0.15	10.5	0.390	6.78	44.4	0.86
1022	4.89	102		0.13	10.5	0.390	6.78	43.3	1.82
1027	4.89	99	1.5	0.14	10.5	0.391	6.79	37.5	1.31
1032	4.90	100		0.13	10.5	0.391	6.79	33.4	0.50
1037	4.90	100		0.11	10.5	0.391	6.79	29.4	1.09
1042	4.90		2.25	0.13	10.5	0.391	6.79	26.2	0.48
Sample time 1050									

Bladder Pump # 18731

Lamotte

12 [illegible]

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY / DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ALSW 20224	1050	BBO 12/13/11
2	MEE (AM20GAX)		4 deg. C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg. C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg. C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

YSI 650 XL #2674
YSI 85 DO # 3210
LaMotte # 012648
Bladder Pump # 18731
Compressor # 016250
Water level # 15773

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-56

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/12/11
INSPECTORS: BBO/ME
PUMP #: 19095
SAMPLE ID #: ALBW20229

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1437	44	Sunny		5-10 mph	SW-NE	frozen	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
3.03 x 0.163 = 0.49 x 3 = 1.48 gals 3wb

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	6.49'					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	3.46'		5.49	1445

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
1440	3.47	Water	level w/ pump in well						
1445		Pump	started						
1454	3.59	102		0.92	6.1	0.457	7.84	-28.0	65
1459	3.56	124		0.69	5.9	0.444	7.59	-44.9	41.5
1504	3.56	132		0.48	5.8	0.434	7.45	-55.9	24.5
1509	3.59	131		0.40	5.7	0.425	7.35	-64.3	14.1
1514	3.61	130		0.410	5.6	0.422	7.26	-68.6	9.27
1519	3.64	147		0.36	5.5	0.419	7.20	-71.2	7.5
1524	3.63	150		0.46	5.5	0.417	7.18	-72.7	6.03
1529	3.63	148	1 gal	0.45	5.4	0.415	7.15	-74.2	5.5
Sample @ 1529				STOP	pump bladder				
→ collected 3 VOA vials									

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ALBW20229	1524	BBO 12/12/10
2	MEE (RSK 20GAX)		4 deg. C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg. C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg. C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

DO # 02F0176
YSI # 04J1 5522 AI
Pine # 4130
Lamotte: 02933

Bladder pump #19095
Compressor # 016250...

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-7
PROJECT: Ash Landfill LTM Groundwater Sampling - Round ~~10~~ 12		DATE: 12/13/11
LOCATION: ROMULUS, NY		INSPECTORS: BBO
		PUMP #: 019095
		SAMPLE ID #: ALBW20225

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1111	30	sunny		5-10	NW-75E	frozen	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	(2)	3	4	6
GALLONS / FOOT:	0.0026	0.041	(0.163)	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

9.02 x 0.163 = 1.47 gals x 3 = 4.41 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.65'					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		4.63'			1132

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1131	4.63	Pump in the well		YSI 85	YSI 85	YSI 650	YSI 650	YSI 650	LaMotte
1132		Pump Started							
1137	Air compressor won't cycle air discharge, will get backup compressor								
1251	4.70	Pump restarted, had stuck value inside compressor							
1308	~~4.4~~	94		0.40	10.3	0.647	6.83	169.5	14
1313	4.72	112		0.37	10.5	0.633	6.66	177.1	12
1318	4.72	100		0.24	10.6	0.625	6.60	189.3	8.4
1323	4.73	102		0.18	10.5	0.622	6.58	190.7	7.5
1328	4.73	108	~0.5 gal	0.16	10.4	0.618	6.57	192.3	5.3
1333	4.73	120		0.22	10.5	0.619	6.56	193.4	4.6
1338	4.72	126	~0.9 gals	0.22	10.7	0.626	6.56	194.8	4.1
1343	4.72	130	~1.0 gals	0.18	10.7	0.620	6.56	196.1	3.9
1348	4.73	116		0.17	10.7	0.619	6.56	197.0	3.9
1400		Sample ID ALBW20225			Collected 3 VOAs for VOC				
		Sample Time 1400			2 VOAs for MEE				
		Purged ~ 1.5 gals			1 Plastic for Sulfate				
		Fe^{+} = 0.05 mg/L			1 Glass Amber for TOC				
		Mn^{+} = 0.2 mg/L							

	SAMPLING ORDER		PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW 20225	1400	BBO 12/13/4
2	MEE (RSK120GAX)		4 deg C	HCL	2/ 40 ml	VOA	"	"	"
3	TOC (9060A)		4 deg C	HCL	~~3/ 40 ml~~	Amber VOA	"	"	"
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	"	"	"
5	Fe+ (HACH)					field	0.05 mg/L		
6	Mn+ (HACH)					field	0.2 mg/L		
7									

COMMENTS: (QA/QC?)

YSI 650 XL #4308 Bladder Pump #019095

YSI 85 DO #3217 Hach DR890 #05650

Lo Flo #2933

Compressor #15720

Water Level #14043

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER 22

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-2A

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/14/11
INSPECTORS: MF
PUMP #: 15731
SAMPLE ID #: ACBW20226

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1113	40's	Sun		0-10	South	Moist	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	14.85					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	4.83	9.20	13.83	1126

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL. (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
1124	4.27	W/ Pumps + Probes	in YSI 55	YSI 55	YSI 650	YSI 650	YSI 650	LaMotte	
1126	Pump Start								
1129	5.01	110		0.06	10.9	1.784	5.88	181.2	89.2
1134	5.68	120		0.06	10.8	1.796	5.81	141.0	
1139	6.19	110		0.05	10.8	1.803	5.76	12.7	80.6
1144	6.82	110		0.04	10.9	1.805	5.73	17.3	76.3
1149	7.14	110		0.04	11.0	1.805	5.72	20.7	66.7
1154	7.31	92		0.04	11.1	1.805	5.71	23.2	
1159		92		0.03	11.1	1.804	5.70	25.6	60.7
1204	7.83	98		0.03	11.2	1.804	5.70	26.3	55.2
1209	8.15	100	~1 gal	0.03	11.3	1.813	5.69	22.5	48.7
1214	8.23	100		0.03	11.4	1.811	5.69	20.1	45.1
1219	8.32	104		0.04	11.3	1.813	5.69	17.7	43.4
1224	8.32	100		0.04	11.4	1.807	5.68	16.4	37.2
1229	8.43	100		0.04	11.4	1.811	5.68	14.8	33.0
1234	8.46	112	~1.75 gal	0.04	11.5	1.810	5.68	12.6	30.9
1239	8.54	108		0.04	11.5	1.812	5.67	13.0	25.2
1244	8.55	98		0.04	11.5	1.810	5.67	12.4	23
1249	8.54	90		0.04	11.6	1.810	5.67	11.6	21
1254	8.63	110		0.04	11.6	1.804	5.66	10.9	17
1259	8.73	112	~2.25 gal	0.04	11.6	1.807	5.67	10.7	14

3210 41305 0248

041516000AB

Ash GW SAMPLING RECORD (2)

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B	✓	4 deg C	HCL	3/ 40 ml	VOA	ALBW20236	1329	
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

Lamotte # 0248
YSI 650 # 4305 + CALJ16000AB
YSI PS # 3210
Pump controller # 016250
Pump # ~~16695~~ 18731

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-22 (cont.)

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/14/11
INSPECTORS: MC
PUMP #: 7351
SAMPLE ID #: ALBW20226

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1113	40's	Sun		0-10	S	Moist	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	14.83					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	4.83	9.20	13.83	1126

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1304	9.01	132		0.05	11.6	1,806	5.65	9.0	13.6
1309	9.03	112		0.05	11.6	1,807	5.65	9.5	11.0
1314	9.13	114		0.05	11.6	1.880	5.65	9.6	9.9
1319	9.26	116	~3 gallons	0.05	11.6	1,806	5.65	10.0	7.7
		Sample @ 1329							

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA			
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW7-23

PROJECT: Ash Landfill LTM Groundwater Sampling - Round ~~11~~ 12
LOCATION: ROMULUS, NY

DATE: 12/14/11
INSPECTORS: BBO
PUMP #: 019096
SAMPLE ID #: ALBW20230/20231 DU

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
644	35	Sunny Partly cloudy		5-10	E-NW	Frozen / Muddy	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) * WELL DIAMETER FACTOR (GAL/FT)]
6.88 x 0.163 = 1.12 gals x 3 = 3.36 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	13.66					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		6.78'			907

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
106	6.73	Pump in the well		YSI 85	YSI 85	YSI 650	650	650	LaMotte
907		Pump Started		@ 912 Tiny air bubbles observed infrequently in water line					
116	6.95	~110		0.10	11.4	1.065	5.81	-74.5	17
921	6.96	138		0.08	11.4	1.043	5.72	-82.6	15
926	6.98	120		0.05	11.4	1.029	5.69	-88.1	13
931	6.99	120	~0.5 gals	0.05	11.3	1.024	5.67	-92.7	12
936	6.98	114		0.06	11.3	1.019	5.65	-96.3	10.0
941	6.96	104		0.08	11.3	1.014	5.65	-99.0	10.0
946	6.96	120	~1.0 gals	0.05	11.4	1.010	5.64	-100.6	8.7
951	6.96	126		0.09	11.3	1.010	5.65	-101.7	7.7
956	6.96	94	~1.25 gals	0.09	11.4	1.005	5.64	-102.6	7.6
1001	6.96	116		0.08	11.4	1.001	5.64	-103.6	7.7
1006	6.97		~1.5 gals	0.08	11.4	0.999	5.64	-104.1	6.7
								Collected following for Each	
1010		Sample ID	ALBW20230			1015	SA	-3 VOAs for VOC	
			ALBW20230MS			1015	MS	-2 VOAs for MEE	
			ALBW20230MSD			1015	MSD	-1 Plastic for Sulfide	
			ALBW20231			1030	DU	-1 Glass Amber for TOC	
			Purged ~1.75 gals Total, no detectable odor to purge water						
			Fe^{+}: 1.17 mg/L						
			Mn^{+}: 12.6 mg/L						

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW20230 ALBW20231	1015 1030	BJO 12/14/11
2	MBT (8020GAX)		4 deg C	HCL	2/ 40 ml	VOA	"	"	
3	TOC (9060A)		4 deg C	HCL	~~2/ 40 ml~~	Amber VOA	"	"	
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	"	"	
5	Fe+ (HACH)				1.17 mg/L	field			
6	Mn+ (HACH)				1.26 mg/L	field			
7									

COMMENTS: (QA/QC?)

YSI 650 XL # 2674 Compressor # 15720
YSI 85 DO # 3217 Water Level # 14043
LaMotte # 02933 HACH DR890 # 5650

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-24
PROJECT: Ash Landfill LTM Groundwater Sampling - Round ~~10~~ 12		DATE: 12/13/11
LOCATION: ROMULUS, NY		INSPECTORS: ME
		PUMP #: 8919
		SAMPLE ID #: ALBW20227

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
1100	40's	Sun		0-5	East	Dry

MONITORING INSTRUMENT	MONITORING DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0 0026	0 041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]
6.76 x 0.163 = 1.10 gals x 3 = 3.31 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	12.93'					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	6.17	~~6.43~~ 6.33	11.93	1123

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1123	6.33			YSI 85	YSI 85	YSI 650	YSI 650	YSI 650	Lamotte
1129	6.33	102		0.21	10.9	0.6215	6.67	195.5	168
1139	6.33	89		0.22	10.9	0.6332	6.68	142.6	16.0
1145	6.35	106		0.20	10.8	0.634	6.64	115.8	79.4
1150	6.32	112		0.20	10.8	0.630	6.63	94.4	36.5
1155	6.33		~0.5 gals	0.18	10.8	0.629	6.62	85.9	29.1
1200	6.33			0.14	10.8	0.628	6.61	72.7	21.0
1205	6.32	118	~1.0 gals	0.12	10.8	0.629	6.61	64.1	16.9
1210	6.33	110		0.13	10.8	0.629	6.58	57.8	13.8
1215	6.33			0.13	10.8	0.625	6.58	53.6	12.4
1220	6.34	110		0.12	10.8	0.628	6.57	48.8	9.19
1225	6.33	108		0.11	10.8	0.627	6.57	47.0	8.18
1230	6.33		~2 gal	0.10	10.8	0.627	6.56	46.2	8.07
1240	- Sample								

3 VOA's SN# - 3110 → 2674/01HI018 → 01248

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ALBW 20227	1240	BB 12/13/11
2	MEE (AM20GAX)		4 deg. C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg. C	HCL	2/ 40 ml	VOA			
4	Sulfate (EPA 300.1)		4 deg. C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field			
6	Mn+ (HACH)					field			
7									

COMMENTS: (QA/QC?)

YSI 650 XL # 2674
YSI 85 DO # 3210
Line Ho - # 012455
Bladder Pump # 8919
Compresser # 016250
Water Level # 15773

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-25

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/15/11
INSPECTORS: ME
PUMP #: 19096
SAMPLE ID #: ALBW20228

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	(FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
0913	45	Overcast	70%	20	South	wet	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	12.71'					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
	—	4.15	7.15	11.79	0941

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	
		—		—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
0930	3.91	Pumps + Meter in -		Air Line O-Ring	Needs Replacement.				
0941	Pump Start			YSI 85	YSI 85	YSI 650	YSI 650	YSI 650	Lamotte
0943	5.02	200		6.04	10.0	1.422	7.29	89	
0948	5.18	170		3.75	10.0	1.436	7.20	25.3	90
0953	5.39	140		3.60	10.0	1.441	7.16	15.3	65
0958	5.51	104		3.94	9.8	1449	7.12	3.9	50
1003	5.65	110		3.62	10.0	1.453	7.10	-1.8	33
1008	5.91	100	~1 gal	3.20	9.9	1.466	7.05	-23.5	24
1013	6.05	96		3.14	10.0	1.474	7.05	-32.5	14
1018	6.21	124		2.96	9.9	1.480	7.03	-38.5	17
1023	6.41	124		2.93	9.9	1.483	7.03	-45.3	15
1028	6.74	120		2.65	9.9	1.490	7.03	-48.6	17
1033	6.91	100		2.28	10.1	1.496	7.01	-51.2	11
1038	6.95	94	~2 gal	2.04	10.1	1.496	7.01	-52.4	9.5
1043	6.98	92		1.89	10.1	1.497	7.01	-53.2	8.3
1048	7.02	84		1.75	10.2	1.499	7.01	-53.0	
1053	7.06	100		1.65	10.2	1.499	7.00	-52.9	7.3
1058	7.12	100	~2.5 gal	1.51	10.2	1.503	7.00	-54.5	5.4
1103	7.15	100		1.50	10.2	1.503	7.00	-54.9	5.2
		Sample time		@ 1113					

GW SAMPLING RECORD

	SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC CLP(Ldw Level) 8260B	✓	4 deg. C	HCL	3/ 40 ml	VOA	AL 20228	1113	
2	TOC		4 deg. C	HCl	2 x 40 mL	VOA			
3	MEE		4 deg. C	HCL	1 x 40 mL	VOA			
4	Sulfate/Chloride		4 deg. C	HCL	1 x 4 oz	HDPE			
5	Fe+		Field						
6	Mn+		Field						

COMMENTS: (QA/QC?)

Lamotte # 01248

YSI 85 # 3210

YSI 650 04F1000CAB +0+1308

Pump # 19046

Pump Controller # 016250

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-26

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/15/11
INSPECTORS: BTO
PUMP #: 18133
SAMPLE ID #: ALBW20232

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS
915	45	overcast scaffold rain		10-20	SW-NE	muddy overnight rain

MONITORING

INSTRUMENT	DETECTOR
OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) * WELL DIAMETER FACTOR (GAL/FT)]
9.48 x 0.163 = 1.55 gals x 3 = 4.64 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC. COND
	13.16					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		3.68'			930

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (mmhos)	pH	ORP (mV)	TURBIDITY (NTU)
927	3.55	Pump in well		replaced	air	Equator lines, previous ones too short			
930		Pump	started	YSI 55	YSI 55	YSI 650	650	650	Lamotte
941	4.11	150		1.65	10.4	1.663	7.23	24.6	7.2
946	4.45	132		1.55	10.2	1.645	7.20	36.1	6.0
956	4.82	110		1.29	10.1	1.670	7.15	48.6	4.2
1001	4.96	96	~0.75 gals	1.11	10.3	1.690	7.13	49.2	3.9
1006	5.17	106	~1.0 gals	1.05	10.3	1.712	7.11	47.1	3.4
1011	5.30	108		0.93	10.4	1.729	7.10	43.7	3.1
1016	5.46	112	~1.3 gals	0.89	10.3	1.707	7.09	40.4	3.1
1021	5.62	116		0.83	10.4	1.763	7.08	36.4	3.0
1026	5.74	104	~1.5 gals	0.75	10.4	1.779	7.08	31.7	2.7
1031	5.89	92		0.69	10.4	1.797	7.08	27.5	2.3
1036	5.96	89		0.64	10.4	1.812	7.07	24.0	2.1
1041	6.19	86->96	~2.0 gals	0.60	10.5	1.790	7.06	20.8	2.3
1046	6.37	102		0.57	10.5	1.844	7.06	17.6	2.1
1051	6.61	100	~2.25 gals	0.54	10.5	1.856	7.06	15.1	1.9
1056	6.82	108		0.55	10.5	1.866	7.05	13.2	1.9
1101	6.94	110	~2.5 gals	0.54	10.5	1.867	7.05	12.1	2.2
~~1106~~									
1110		Sample Collected							
		Sample ID ALBW20232							

Sample Time 1115
Fe^{+}: 0.0 mg/L check twice Mn^{+}: 0.5 mg/L

GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC - SVP(Low Level) 8260B		4 deg. C	HCL	3/ 40 ml	VOA	ALBW 20232	1115	
2	TOC		4 deg. C	HCl	2 x 40 mL	VOA	"	"	
3	MEE		4 deg. C	HCL	~~1 x 40 mL~~	Amber ~~VOA~~	"	"	
4	Sulfate/Chloride		4 deg. C	HCL	1 x 4 oz	HDPE	"	"	
5	Fe+		Field				0.0 mg/L	Checked twice	
6	Mn+		Field				0 mg/L		

COMMENTS: (QA/QC?)

VSI 650 XL # 2674
YSI 85 DO # 3217
LaMotte # 2933
Compressor # 15720
Bladder Pump # 18133
Water Level # 14043
HACH DR890 # 5650

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-27

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/14/11
INSPECTORS: ~~BSO~~ ME
PUMP #: 8914
SAMPLE ID #: ALBW20233

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND (FROM) VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1339	~35	Partly cloudy		5-10	S-7N	Muddy	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)]

	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
HISTORIC DATA	12.73'					

	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME:
DATA COLLECTED AT WELL SITE	—	5.40	5.88	11.73	1354

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)	—	PUMP AFTER SAMPLING (cps)	—

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1354	5.34	w/ pumps	tometers	YSI 85	YSI 85	YSI 650	YSI 650	YSI 650	Lamotte
1359	Pump started - Water very turbid								
1400	5.75	128		0.04	10.2	2.478	5.77	-44.9	340
1406	5.88	110		0.04	10.3	2.485	5.73	-50.4	
1413	5.88	108		0.04	10.3	2.477	5.70	-52.3	230
1418	5.88			0.04	10.3	2.467	5.68	-55.9	
1423	5.88	140		0.05	10.3	2.454	5.65	-57.8	140
1428	5.88	150		0.04	10.3	2.435	5.66	-61.6	
1433	5.88	126		0.05	10.3	2.423	5.66	-63.1	100
1438	5.88	120		0.04	10.3	2.389	5.64	-65.0	85
1443	5.89	144		0.06	10.2	2.362	5.63	-68.2	70
1448	5.91	162		0.05	10.2	2.316	5.63	-68.4	~~450~~
1453	~~1503~~ 5.91	164		0.04	10.1	2.262	5.61	-68.4	50
1458	5.94	174	~2.5 gal	0.06	10.3	2.208	5.61	-68.4	40
1503	5.94	174		0.06	10.2	2.143	5.59	-68.1	33
1508	5.94	200		0.06	10.2	2.117	5.59	-69.7	32
1513	5.93	150	~3 gal	0.07	10.1	2.093	5.58	-69.8	25
1518	5.94	132		0.07	10.1	2.058	5.57	-69.5	21
1523	5.81	144	~3.5 gal	0.07	10.1	2.029	5.57	-69.6	19
1533	5.80	128	~3.5 gal	0.08	10.1	1.982	5.55	-71.0	16
1543 - SAMPLE									

Fe II 1.23 mg/L Mn II 22.00 mg/L over limit

Purge water has organic odor Clay Turbidity stained Brown / Black

Ash GW SAMPLING RECORD

SAMPLING ORDER			PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW20233	1543	
2	MEE (RSK-175 M20GAX)		4 deg C	HCL	2/ 40 ml	VOA			
3	TOC (9060A)		4 deg C	HCL	~~2/ 40 ml~~	Amber ~~VOA~~			
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE			
5	Fe+ (HACH)					field	1.23 mg/L		
6	Mn+ (HACH)					field	22.0 mg/L over limit		
7									

COMMENTS: (QA/QC?)

Lamotte #c7248
4ST650 # 4308 + 04316000AB
4ST85 # 3210
Pump controler # 016250
Pump # 8914
Hach # 5650

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MWT-28

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 4 12
LOCATION: ROMULUS, NY

DATE: 12/14/11
INSPECTORS: BBO
PUMP #: 8135
SAMPLE ID #: ALBW20234

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1343	35	Partly Sunny		5-10	S→N	Muddy	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = (POW - STABILIZED WATER LEVEL) X WELL DIAMETER FACTOR (GAL/FT)
7.29 x 0.163 = 1.19 gals x 3 = 3.56 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	12.79'					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		5.5'	5.89'		1355

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC COND mS/cm (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1353	5.44	Pump in the well		YSI 85	YSI 85	YSI 650	650	650	LaMotte
1355		Pump Started							
1400	5.69	140		0.03	11.1	0.725	6.32	-48.7	11
1405	5.75	114		0.02	11.1	0.703	6.12	-49.3	13
1410	5.79	120		0.02	11.1	0.700	6.03	-55.5	16
1415	5.82	130		0.03	11.1	0.709	5.96	-67.9	15
1420	5.84	132	~0.8 gals	0.02	11.1	0.715	5.93	-77.5	12
1425	5.85	134		0.02	11.3	0.722	5.89	-87.0	10
1430	5.88	124	~1.0 gals	0.02	11.1	0.728	5.87	-95.2	8.5
1435	5.88	116		0.01	11.0	0.734	5.86	-101.7	7.1
1440	5.89	112	~1.5 gals	0.02	11.1	0.738	5.83	-107.5	7.4
1445	5.88	118		0.02	11.1	0.743	5.82	-111.2	6.6
1451	5.89	128	~2.1 gals	0.01	11.1	0.745	5.80	-117.1	5.7
1456	5.90	120		0.01	10.9	0.761	5.78	-119.8	5.5
1501	5.89	126	~2.5 gals	0.03	11.0	0.766	5.77	-123.4	5.4
1506	5.90	134		0.02	11.1	0.773	5.76	-125.9	6.2
		Purged 2.6 gals							
1510		Sample Collected				Collected following: 3 VOAs for VOC			
		Sample ID ALBW20234						2 VOAs for MEE	
		Sample Time 1515						1 Plastic for Sulfate	
		Fe+3 0.48 mg/L	Mn+:	1.1	mg/L			1 Glass Amber for TOC	

Purge water has faint sour organic odor

SAMPLING ORDER			PRESERVATIVES		BOTTLES COUNT/ VOLUME	BOTTLES TYPE	SAMPLE NUMBER	TIME	CHECKED BY/ DATE
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBU 20234	1515	BBO 12/14/4
2	METALS (M20GAX)		4 deg C	HCL	2/ 40 ml	VOA	"	"	
3	TOC (9060A)		4 deg C	HCL	~~2/ 40 ml~~	Amber ~~VOA~~	"	"	
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	"	"	
5	Fe+ (HACH)					field	0.48 mg/L		
6	Mn+ (HACH)					field	1.[illegible] mg/L		
7									
							F.F.S.		

COMMENTS: (QA/QC?)

YSI 650 XM # 2674
YSI 85 DO # 3217
LaMotte # 02933

Compressor # 15720
Water Level # 14043
HACH DR890 # 5650

IDW INFORMATION:

SAMPLING RECORD - GROUNDWATER

SENECA ARMY DEPOT ACTIVITY	PARSONS	WELL #: MW-29

PROJECT: Ash Landfill LTM Groundwater Sampling - Round 12
LOCATION: ROMULUS, NY

DATE: 12/14/11
INSPECTORS: BBC
PUMP #: 11710
SAMPLE ID #: ALBW20235

WEATHER / FIELD CONDITIONS CHECKLIST (RECORD MAJOR CHANGES)

TIME (24 HR)	TEMP (APPRX)	WEATHER (APPRX)	REL. HUMIDITY (GEN)	WIND VELOCITY (APPRX)	WIND (FROM) DIRECTION (0 - 360)	GROUND / SITE SURFACE CONDITIONS	MONITORING INSTRUMENT	MONITORING DETECTOR
1140	35	Sunny		5-10		muddy	OVM-580	PID

WELL VOLUME CALCULATION FACTORS

DIAMETER (INCHES):	0.25	1	2	3	4	6
GALLONS / FOOT:	0.0026	0.041	0.163	0.367	0.654	1.47
LITERS/FOOT	0.010	0.151	0.617	1.389	2.475	5.564

ONE WELL VOLUME (GAL) = [(POW - STABILIZED WATER LEVEL) x (WELL DIAMETER FACTOR (GAL/FT))]
8.39 x 0.163 = 1.37 gals x 3 = 4.10 gals

HISTORIC DATA	DEPTH TO POINT OF WELL (TOC)	DEPTH TO TOP OF SCREEN (TOC)	SCREEN LENGTH (FT)	WELL DEVELOPMENT TURBIDITY	WELL DEVELOPMENT pH	WELL DEVELOPMENT SPEC COND
	13.6					

DATA COLLECTED AT WELL SITE	PID READING (OPENING WELL)	DEPTH TO STATIC WATER LEVEL (TOC)	DEPTH TO STABILIZED WATER LEVEL (TOC)	DEPTH TO PUMP INTAKE (TOC)	PUMPING START TIME
		5.21'?			1141

RADIATION SCREENING DATA	PUMP PRIOR TO SAMPLING (cps)		PUMP AFTER SAMPLING (cps)	

MONITORING DATA COLLECTED DURING PURGING OPERATIONS

TIME (min)	WATER LEVEL	PUMPING RATE (ml/min)	CUMULATIVE VOL (GALLONS)	DISSOLVED OXYGEN (mg/L)	TEMP (C)	SPEC. COND (umhos)	pH	ORP (mV)	TURBIDITY (NTU)
1135	4.71	Pump in well		YSI 85	YSI 85	YSI 650	650	650	LaMotte
1141		Pump Started, replace missing water line							
1146	5.37	86 → 122		0.93	10.4	1.049	6.43	-58.2	7.3
1151	5.82	142 → 140		0.99	10.3	1.106	6.19	-66.6	4.9
1156	6.11	138		0.87	10.3	0.925	6.30	-61.5	5.8
1201	6.31	128	~0.3 gals	0.69	10.0	0.871	6.36	-51.3	5.9
1206	6.55	148 → 120		0.68	10.0	0.866	6.38	-42.3	4.7
1211	6.78	136	118	0.56	10.0	0.870	6.38	-37.8	4.1
1216	7.05	150 → 118	~1.0 gals	0.58	10.0	0.875	6.37	-36.5	3.8
1221	7.15	110		0.42	10.2	0.877	6.35	-35.4	3.2 *
1226	7.29	116		0.42	10.2	0.882	6.34	-33.5	2.6
1231	7.38	116	~1.5 gals	0.35	10.3	0.884	6.32	-33.2	2.4
1236	7.49	116		0.33	10.2	0.888	6.31	-33.3	2.7
1241	7.56	136	~1.8 gals	0.32	10.2	0.892	6.29	-32.3	2.1
1246	7.62	106	~2.0 gals	0.29	10.1	0.898	6.26	-30.2	1.9
1256		Sample collected			Collected the following				
		Sample ID ALBW20235						3 VOAs for	VOC
		Sample Time 1256			Purged ~2.1	gals		2 VOAs for	MEE
	Mn+	Mn+: 1.0 mg/L					1	Plastic for	Sulfate
	Fe	Mn+: 0.04 mg/L					1	6 oz Amber for	TOC

* 1225 LaMotte Re-Calibrated 1.0 NTU = 1.2 → 1.0

Ash GW SAMPLING RECORD

	SAMPLING ORDER		PRESERVATIVES		BOTTLES		SAMPLE NUMBER	TIME	CHECKED BY/ DATE
					COUNT/ VOLUME	TYPE			
1	VOC 8260B		4 deg C	HCL	3/ 40 ml	VOA	ALBW 20235	1256	BBO 12/14/11
2	MEE (AM20GAX)		4 deg C	HCL	2/ 40 ml	VOA	"	"	
3	TOC (9060A)		4 deg C	HCL	~~2/ 40 ml~~	Amber ~~VOA~~	"	"	
4	Sulfate (EPA 300.1)		4 deg C		1 x 250 mL	HDPE	"	"	
5	Fe+ (HACH)					field	0.04 mg/L		
6	Mn+ (HACH)					field	1.0 mg/L		
7									

COMMENTS: (QA/QC?)

YSI 650 XL # 2674
YSI 85 DO # 3217
LaMotte # 02953
Compressor # 15720
Water Level # 14043
HACH DR890 # 5650

IDW INFORMATION:

APPENDIX B

COMPLETE GROUNDWATER DATA

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Appendix B

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL PT-18A GW ALBW20059 1/3/2007 SA LTM 1 Value (Q)	ASH LANDFILL PT-18A GW ALBW20074 3/17/2007 SA LTM 2 Value (Q)	ASH LANDFILL PT-18A GW ALBW20088 6/5/2007 SA LTM 3 Value (Q)	ASH LANDFILL PT-18A GW ALBW20103 11/15/2007 SA LTM 4 Value (Q)	ASH LANDFILL PT-18A GW ALBW20117 6/24/2008 SA LTM 5 Value (Q)	ASH LANDFILL PT-18A GW ALBW20132 12/12/2008 SA LTM 6 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	1 U	1 U	1 U	1 U	0.26 UJ
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 UJ	0.31 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	1 U	1 U	1 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	1 U	1 U	1 U	1 U	0.75 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.64 J	0.73 J	1.4	2.1	1 U	1.3
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 U	1 U	1 U	1 UJ	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	1 U	1 U	1 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.2 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	1 U	1 U	1 U	0.14 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Acetone	UG/L	2600	24%			41	172	5 U	2 J	7	5 U	5 U	1.3 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.38 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.26 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.27 UJ
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.32 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 U	1 U	1 UJ	0.32 U
Chloroform	UG/L	27	9%	7	4	16	178	27	13 U	14	8.7	1 U	2.2
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	220	170	430	720	200	510
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.28 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Methyl Acetate	UG/L	6	1%			2	178	1 U	1 UJ	1 U	1 UJ	1 UJ	0.17 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	1 U	1 U	1 U	1 UJ	0.28 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 U	5 U	5 U	5 UJ	5 UJ	1.2 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 UJ	0.34 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	5 U	5 U	5 U	5 UJ	1.3 U
Methyl Isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 U	5 U	5 U	5 UJ	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 UJ	1 U	1 U	1 U	1 U	0.44 UJ
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Seneca Army Depot Activity

Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL PT-18A GW ALBW20059 1/3/2007 SA LTM 1	ASH LANDFILL PT-18A GW ALBW20074 3/17/2007 SA LTM 2	ASH LANDFILL PT-18A GW ALBW20088 6/5/2007 SA LTM 3	ASH LANDFILL PT-18A GW ALBW20103 11/15/2007 SA LTM 4	ASH LANDFILL PT-18A GW ALBW20117 6/24/2008 SA LTM 5	ASH LANDFILL PT-18A GW ALBW20132 12/12/2008 SA LTM 6
								Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	1 U	1 U	1 U	0.51 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	3 U	3 U	3 U	0.93 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1.6	1.4	0.8	0.4	0.8 J	2.4
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.37 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	2,000	1,000	1,100	2,700	220	1,400
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 UJ	0.15 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	2.4	2.9	3.3	8.2	1.4	4.6
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Appendix

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-18A	PT-18A	PT-18A	PT-18A	PT-18A	PT-18A
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20147	ALBW20162	ALBW20177	ALBW20192	ALBW20207	ALBW20222
Sample Date								6/4/2009	12/17/2009	7/1/2010	12/19/2010	7/22/2011	12/15/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 U	1.1 U	0.5 U	0.5 U	[illegible]	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	0.85 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	1.2 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	0.92 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	1.5 U	0.25 U	0.25 U	62	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.8 J	2 J	0.11 U	0.11 U	1.5	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	1.6 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1.6 U	0.44 U	0.44 U	0.44 UJ	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.66 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	0.81 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.21 U	0.86 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	1.3 U	0.13 U	0.13 U	0.29 J	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	1.4 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	1.6 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.3 UJ	5.4 U	5 U	5 UJ	8.1 J	5 UJ
Benzene	UG/L	0.38	1%	1	0	2	178	0.16 U	1.6 U	0.25 U	0.25 U	0.38 J	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.39 U	1.5 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 U	1 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 U	0.78 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 U	1.1 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.32 U	1.3 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	1.3 U	0.1 U	0.1 U	0.1 UJ	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	1.3 UJ	1 U	1 U	1 U	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	9	3.1 J	2.1	0.27 J	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	260	630	28	0.54 J	[illegible]	0.53 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	1.4 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.53 U	2.1 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.29 U	1.1 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.18 U	0.74 U	0.11 U	0.11 U	9.2	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.77 U	0.1 U	0.1 U	0.1 J	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 U	2 U	0.19 U	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	1.1 UJ	0.8 U	0.8 UJ	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	5 U	1 U	1 U	1 U	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.35 U	1.4 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.5 U	2 U	0.1 U	0.1 U	0.17 J	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	5.3 U	1 U	1 U	5.1 J	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	3.6 U	1 U	1 U	1.9 J	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.64 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 U	1.8 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.74 U	0.11 U	0.11 U	0.11 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-18A	PT-18A	PT-18A	PT-18A	PT-18A	PT-18A
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20147	ALBW20162	ALBW20177	ALBW20192	ALBW20207	ALBW20222
Sample Date								6/4/2009	12/17/2009	7/1/2010	12/19/2010	7/22/2011	12/15/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	1.5 U	0.15 U	0.15 U	1 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	0.51 U	2 U	0.33 U	0.33 U	130	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.66 U	2.6 U	0.2 U	0.2 U	60	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1.8	3.5 J	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	1.5 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	810	[illegible]	[illegible]	6.3	0.13 U	7.3
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 U	0.61 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	2	[illegible]	0.18 U	0.18 U	110	0.18 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Ta... 6-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-25	MWT-25	MWT-25	MWT-25	MWT-25	MWT-25
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20064	ALBW20079	ALBW20093	ALBW20108	ALBW20123	ALBW20138
Sample Date							1/3/2007	3/17/2007	6/6/2007	11/15/2007	6/24/2008	12/15/2008
QC Type							SA	SA	SA	SA	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							1	2	3	4	5	6
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	1 U	1 U	1 U	1 U	0.26 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 UJ	0.31 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	1 U	1 U	1 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	1 U	1 U	1 U	1 U	0.75 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	1 U	1 U	1 U	1 U	0.29 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 U	1 U	1 U	1 UJ	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	1 U	1 U	1 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.2 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	1 U	1 U	1 U	0.14 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Acetone	UG/L	2600	24%			41	172	5 U	5 U	4.5 J	5 U	5 U	1.3 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.38 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.26 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.27 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.32 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 U	1 U	1 UJ	0.32 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	1 U	1 U	1 U	1 U	0.34 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	41	84	36	17	17	0.63 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.28 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Methyl Acetate	UG/L	6	1%			2	178	1 U	1 UJ	1 U	1 UJ	1 UJ	0.17 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	1 U	1 U	1 U	1 UJ	0.28 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 U	5 U	5 U	5 UJ	5 UJ	1.2 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 UJ	0.34 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	5 U	5 U	5 U	5 UJ	1.3 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 U	5 U	5 U	5 UJ	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1 U	0.44 UJ
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-25	MWT-25	MWT-25	MWT-25	MWT-25	MWT-25
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20064	ALBW20079	ALBW20093	ALBW20108	ALBW20123	ALBW20138
Sample Date								1/3/2007	3/17/2007	6/6/2007	11/15/2007	6/24/2008	12/15/2008
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								1	2	3	4	5	6
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	4.6	1 U	1 U	0.51 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	3 U	3 U	3 U	0.93 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.56 J	1.2	0.5 J	1 U	1 U	0.13 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.37 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	50	55	28	26	19	3.2
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 UJ	0.15 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	1.6	9.8	2.1	0.64 J	1 U	0.24 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-25 GW ALBW20153 6/3/2009 SA LTM 7 Value (Q)	ASH LANDFILL MWT-25 GW ALBW20168 12/17/2009 SA LTM 8 Value (Q)	ASH LANDFILL MWT-25 GW ALBW20183 6/30/2010 SA LTM 9 Value (Q)	ASH LANDFILL MWT-25 GW ALBW20198 12/19/2010 SA LTM 10 Value (Q)	ASH LANDFILL MWT-25 GW ALBW20213 7/20/2011 SA LTM 11 Value (Q)	ASH LANDFILL MWT-25 GW ALBW20228 12/15/2011 SA LTM 12 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	0.21 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	0.31 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	0.38 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.29 U	0.29 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 UJ	0.39 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.21 U	0.21 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.3 U	1.3 U	5 U	5 UJ	21 J	5 UJ
Benzene	UG/L	0.38	1%	1	0	2	178	0.18 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 UJ	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 UJ	0.19 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 U	0.27 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	0.32 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	0.32 U	1 U	1 UJ	1 UJ	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	0.34 U	0.34 U	0.14 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	[redacted]	3.3	[redacted]	0.97 J	[redacted]	0.3 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.53 U	0.53 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.29 U	0.29 U	0.25 U	0.25 U	0.25 U	0.25 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 UJ	0.5 U	0.19 UJ	0.19 U	0.19 UJ	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	0.28 UR	0.8 UJ	0.8 U	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	1.2 U	1 UJ	1 U	1 UJ	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.35 U	0.35 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	1.3 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	0.91 U	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 U	0.44 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-25	MWT-25	MWT-25	MWT-25	MWT-25	MWT-25
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20153	ALBW20168	ALBW20183	ALBW20198	ALBW20213	ALBW20228
Sample Date								6/3/2009	12/17/2009	6/30/2010	12/19/2010	7/20/2011	12/15/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	0.51 U	0.51 U	0.33 U	0.33 U	1 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.66 U	0.66 U	0.2 U	0.2 U	0.28 J	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.13 U	0.42 U	0.49 J	0.2 U	0.45 J	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	12	4.2	7.7	1.9	4.4	1.6
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 U	0.15 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	0.24 U	0.24 U	0.18 U	0.18 U	0.72 J	0.18 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Seneca Army Depot Activity

Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-26	MWT-26	MWT-26	MWT-26	MWT-26	MWT-26
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20066	ALBW20081	ALBW20095	ALBW20111	ALBW20126	ALBW20141
Sample Date							1/3/2007	3/17/2007	6/5/2007	11/15/2007	6/24/2008	12/15/2008
QC Type							SA	SA	SA	SA	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							1	2	3	4	5	6
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	1 U	1 U	1 U	1 U	0.26 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 U	0.31 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	1 U	1 U	1 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	1 U	1 U	1 U	1 U	0.75 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	1 U	1 U	1 U	1 U	0.29 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 U	1 U	1 U	1 U	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	1 U	1 U	1 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.2 U
1,2-Dichloroethane	UG/L	5.8	14%	0.6	21	25	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	1 U	1 U	1 U	0.14 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Acetone	UG/L	2600	24%			41	172	5 U	17	5 U	5 U	5 U	1.3 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.38 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.26 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.27 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.32 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 U	1 U	1 UJ	0.32 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	1 U	1 U	1 U	1 U	0.34 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	19	17	11	2.8	3.3	1
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.28 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Methyl Acetate	UG/L	6	1%			2	178	1 U	1 UJ	1 U	1 UJ	1 UJ	0.17 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	1 U	1 U	1 U	1 UJ	0.28 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 U	5 U	5 U	5 UJ	5 UJ	1.2 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.34 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	15	5 U	5 U	5 U	1.3 U
Methyl Isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 U	5 U	5 U	5 U	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1 U	0.44 UJ
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-26	MWT-26	MWT-26	MWT-26	MWT-26	MWT-26
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20066	ALBW20081	ALBW20095	ALBW20111	ALBW20126	ALBW20141
Sample Date								1/3/2007	3/17/2007	6/5/2007	11/15/2007	6/24/2008	12/15/2008
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								1	2	3	4	5	6
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	1 U	1 U	1 U	0.51 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	3 U	3 U	3 U	0.93 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.6 J	1	0.7 J	1 U	1 U	0.13 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.37 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178			3.2	2.8	1.7	1.9
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 UJ	0.15 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	2		4.4	1 U	1 U	0.24 U
Other													
Iron	UG/L	296000	100%			12	12	275 J	844				
Iron+Manganese	UG/L	352900	100%			12	12	1,043 J	2,464				
Manganese	UG/L	56900	100%			12	12	768	1,620				
Ethane	UG/L	98	92%			81	88	2 U	0.4	1	0.16	0.82	0.046
Ethene	UG/L	200	89%			78	88	2 U	7.8	13	0.4	2.9	0.028
Methane	UG/L	23,000	97%			85	88	2 U	210	390	44	210	10
Sulfate	MG/L	1060	80%			68	88	958	738	473	1,060	600	541
Total Organic Carbon	MG/L	2050	100%			88	88	3.9 J	15.2	10.3	6.1	5.6	4.4

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-26	MWT-26	MWT-26	MWT-26	MWT-26	MWT-26
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20156	ALBW20171	ALBW20186	ALBW20202	ALBW20216	ALBW20232
Sample Date							6/3/2009	12/17/2009	6/29/2010	12/19/2010	7/20/2011	12/15/2011
QC Type							SA	SA	SA	SA	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	0.21 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	0.31 UJ	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	0.38 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.29 U	0.29 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 UJ	0.39 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.21 U	0.21 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.3 U	1.3 U	5 U	5 UJ	5 UR	5 UJ
Benzene	UG/L	0.38	1%	1	0	2	178	0.16 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 UJ	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 UJ	0.19 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 U	0.27 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	0.32 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	0.32 UJ	1 UJ	1 UJ	1 UJ	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	0.34 U	0.34 U	0.14 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	6	8.1	5.5	12	9.8	1.1
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.53 U	0.53 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.29 U	0.29 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 UJ	0.5 U	0.19 U	0.19 U	0.19 UJ	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	0.28 UJ	0.8 UJ	0.8 U	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	1.2 U	1 U	1 U	1 UJ	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.35 U	0.35 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	1.3 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	0.91 U	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 U	0.44 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U

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Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-26	MWT-26	MWT-26	MWT-26	MWT-26	MWT-26
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20156	ALBW20171	ALBW20186	ALBW20202	ALBW20216	ALBW20232
Sample Date								6/3/2009	12/17/2009	6/29/2010	12/19/2010	7/20/2011	12/15/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	16%	5	17	26	178	0.51 U	0.51 U	0.33 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.66 U	0.66 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.13 U	0.42 U	0.37 J	0.67 J	0.81 J	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	3.6	5.8	1.7	4.2	1.6	1.2
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 U	0.15 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	3.5	4.2	0.18 U	7.6	4.4	0.47 J
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	3.2	2.2	2.2	3.7	4.5	0.23
Ethene	UG/L	200	89%			78	88	2.7	1.8	0.71	3.3	1	0.425 U
Methane	UG/L	23,000	97%			85	88	1,100	610	740	1,600	960	39
Sulfate	MG/L	1060	80%			68	88	570	912	680	690	510	860
Total Organic Carbon	MG/L	2050	100%			88	88	6.9	5.6	4.6	5.5	6.3	4.5

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-27 GW ALBW20067 1/3/2007 SA LTM 1 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20082 3/16/2007 SA LTM 2 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20096 6/5/2007 SA LTM 3 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20097 6/5/2007 DU LTM 3 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20112 11/15/2007 SA LTM 4 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20127 6/24/2008 SA LTM 5 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 UJ	20 UJ	10 U	4 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,2-Dichloroethane	UG/L	5.8	14%	0.6	21	25	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Acetone	UG/L	2600	24%			41	172	2,000 J	1,300	1,300	1,300	30 J	20 U
Benzene	UG/L	0.38	1%	1	0	2	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Bromoform	UG/L	0	0%	80	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Carbon disulfide	UG/L	0	0%			0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	20 UJ	20 U	20 U	20 U	10 U	4 UJ
Chloroform	UG/L	27	9%	7	4	18	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	[redacted]	20 U	20 U	20 U	10 U	4 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Cyclohexane	UG/L	0	0%			0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Methyl Acetate	UG/L	6	1%			2	178	20 UJ	20 UJ	20 U	20 U	10 UJ	4 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	20 UJ	20 U	20 U	20 U	10 U	4 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	100 UJ	100 U	100 U	100 U	50 UJ	20 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	4,100 J	2,200	1,800	1,700	50 U	20 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	100 UJ	100 U	100 U	100 U	50 U	20 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Methylene chloride	UG/L	18	7%	5	7	12	178	[redacted]	20 U	[redacted]	[redacted]	10 U	4 U
Styrene	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20067	ALBW20082	ALBW20096	ALBW20097	ALBW20112	ALBW20127
Sample Date								1/3/2007	3/16/2007	6/5/2007	6/5/2007	11/15/2007	6/24/2008
QC Type								SA	SA	SA	DU	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								1	2	3	3	4	5
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Toluene	UG/L	590	16%	5	17	28	178	20 UJ	20 U	20 U	20 U	7.3 J	5.9
Total Xylenes	UG/L	60	1%	5	1	2	178	60 UJ	60 U	60 U	60 U	30 U	12 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	20 UJ	20 U	20 UJ	20 UJ	10 U	4 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	20 UJ	20 U	20 U	20 U	10 U	4 U
Other													
Iron	UG/L	296000	100%			12	12	296,000 J	229,000				
Iron+Manganese	UG/L	352900	100%			12	12	352,900 J	273,500				
Manganese	UG/L	56900	100%			12	12	56,900	44,500				
Ethane	UG/L	98	92%			81	88	10,000 UJ	0.15	0.082	0.079	0.025 U	2.3
Ethene	UG/L	200	89%			78	88	10,000 UJ	2.7	0.34	0.32	0.014 J	0.049
Methane	UG/L	23,000	97%			85	88	10,000 UJ	15,000	14,000	13,000	13,000	13,000
Sulfate	MG/L	1060	80%			68	88	10 U	10 U	2 U	2.7	31.7	2 U
Total Organic Carbon	MG/L	2050	100%			88	88	2,050 J	1,350	738	771	167	88.9

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20142	ALBW20143	ALBW20157	ALBW20172	ALBW20173	ALBW20187
Sample Date							12/15/2008	12/15/2008	6/3/2009	12/16/2009	12/16/2009	6/29/2010
QC Type							SA	DU	SA	SA	DU	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							6	6	7	8	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	2.6 UJ	2.6 UJ	2.6 U	1.3 U	1.3 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	2.1 UJ	2.1 UJ	2.1 U	1.1 U	1.1 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	3.1 UJ	3.1 UJ	3.1 U	1.5 U	1.5 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	2.3 UJ	2.3 UJ	2.3 U	1.2 U	1.2 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	7.5 U	7.5 U	7.5 U	1.9 U	1.9 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	2.9 U	2.9 U	2.9 U	1.5 U	1.5 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	4.1 UJ	4.1 UJ	4.1 U	2 U	2 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	10 UJ	10 UJ	10 UJ	2 U	2 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1.7 UJ	1.7 UJ	1.7 U	0.83 U	0.83 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	2 U	2 U	2 U	1 U	1 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	2.1 U	2.1 U	2.1 U	1.1 U	1.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1.4 U	1.4 U	1.4 U	1.6 U	1.6 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1.6 U	1.6 U	1.6 U	1.8 U	1.8 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1.6 U	1.6 U	1.6 U	2 U	2 U	0.28 U
Acetone	UG/L	2600	24%			41	172	26 J	13 UJ	13 U	6.7 U	6.7 U	11 J
Benzene	UG/L	0.38	1%	1	0	2	178	1.6 U	1.6 U	1.6 U	2 U	2 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	3.8 U	3.8 U	3.9 U	1.9 U	1.9 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	2.6 UJ	2.6 UJ	2.6 UJ	1.3 U	1.3 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	1.9 U	1.9 U	1.9 UJ	0.97 U	0.97 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	2.7 UJ	2.7 UJ	2.7 U	1.3 U	1.3 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1.8 U	1.8 U	3.2 U	1.6 U	1.6 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	3.2 U	3.2 U	3.2 U	1.6 U	1.6 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	3.2 U	3.2 U	3.2 U	1.6 U	1.6 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	3.4 U	3.4 U	3.4 U	1.7 U	1.7 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	1.6 U	1.6 U	1.6 U	1.9 U	1.9 U	0.18 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	3.6 U	3.6 U	3.6 U	1.8 U	1.8 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	2.2 UJ	2.2 UJ	5.3 U	2.7 U	2.7 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	2.8 U	2.8 U	2.9 U	1.4 U	1.4 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1.8 U	1.8 U	1.8 U	0.92 U	0.92 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1.9 U	1.9 U	1.9 U	0.96 U	0.96 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	1.7 UJ	1.7 UJ	1.7 UJ	2.5 U	2.5 U	0.19 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	2.8 U	2.8 U	2.8 U	1.4 U	1.4 U	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	12 U	12 U	12 U	6.2 U	6.2 U	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	3.4 U	3.4 U	3.5 U	1.7 U	1.7 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	2.2 UJ	2.2 UJ	5 U	2.5 U	2.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	13 UJ	13 UJ	13 U	6.6 U	6.6 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	9.1 UJ	9.1 UJ	9.1 U	4.5 U	4.5 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1.6 UJ	1.6 UJ	1.6 U	0.8 U	0.8 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	4.4 UJ	4.4 UJ	4.4 U	2.2 U	2.2 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	1.8 U	1.8 U	1.8 U	0.92 U	0.92 U	0.11 U

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-27	MWT-27	MWT-27	MWT-27	MWT-27	MWT-27
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20142	ALBW20143	ALBW20157	ALBW20172	ALBW20173	ALBW20187
Sample Date								12/15/2008	12/15/2008	6/3/2009	12/16/2009	12/16/2009	6/29/2010
QC Type								SA	DU	SA	SA	DU	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								6	6	7	8	8	9
Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	3.6 U	3.6 U	3.6 U	1.8 U	1.8 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	6.9 J	7.2 J	5.1 U	2.6 U	2.6 U	0.61 J
Total Xylenes	UG/L	60	1%	5	1	2	178	9.3 U	9.3 U	6.6 U	3.3 U	3.3 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1.3 U	1.3 U	1.3 U	2.1 U	2.1 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	3.7 U	3.7 U	3.7 U	1.8 U	1.8 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	1.8 U	1.8 U	1.8 U	2.3 U	2.3 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1.5 UJ	1.5 UJ	1.5 U	0.76 U	0.76 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	2.4 U	2.4 U	2.4 U	3.2 J	2.9 J	0.18 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	1.6	1.6	5.1	4.4	4.3	3.8
Ethene	UG/L	200	89%			78	88	0.13	0.12	0.15	1.2	1.1	0.12
Methane	UG/L	23,000	97%			85	88	15,000	15,000	14,000	15,000	16,000	13,000
Sulfate	MG/L	1060	80%			68	88	24.2	23.8	0.93 J	13.9 J	14 J	0.95 J
Total Organic Carbon	MG/L	2050	100%			88	88	53.8	53.1	81.7	49	50.9	61

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Appendix B

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-27 GW ALBW20203 12/18/2010 SA LTM 10 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20217 7/20/2011 SA LTM 11 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20218 7/20/2011 DU LTM 11 Value (Q)	ASH LANDFILL MWT-27 GW ALBW20233 12/14/2011 SA LTM 12 Value (Q)	ASH LANDFILL MWT-28 GW ALBW20068 1/3/2007 SA LTM 1 Value (Q)	ASH LANDFILL MWT-28 GW ALBW20069 1/3/2007 DU LTM 1 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 UJ
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	0.18 U	20 UJ	20 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	0.13 U	20 UJ	20 UJ
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.11 U	0.11 U	0.11 U	0.11 U	20 UJ	20 UJ
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 U	0.44 U	0.44 U	20 UJ	20 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	0.21 U	20 UJ	20 UJ
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U	0.1 U	0.1 U	0.1 U	20 UJ	20 UJ
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	0.13 U	20 UJ	20 UJ
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	0.28 U	20 UJ	20 UJ
Acetone	UG/L	2600	24%			41	172	5 UJ	5 UR	5.6 J	5 U	2,500 J	2,600 J
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	0.26 J	20 UJ	20 UJ
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 UJ
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	0.6 U	20 UJ	20 UJ
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	0.5 U	20 UJ	20 UJ
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 U	0.1 U	0.1 U	20 UJ	20 UJ
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 UJ	1 UJ	1 UJ	1 U	20 UJ	20 UJ
Chloroform	UG/L	27	9%	7	4	16	178	0.14 U	0.14 U	0.14 U	0.14 U	20 UJ	20 UJ
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	1.1	0.15 J	0.27 J	1.4	20 UJ	20 UJ
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	0.11 U	20 UJ	20 UJ
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U	0.11 U	20 UJ	20 UJ
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	0.1 U	20 UJ	20 UJ
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	0.19 UJ	0.19 UJ	0.19 U	20 UJ	20 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 U	0.8 UJ	0.8 UJ	0.8 UJ	20 UJ	20 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 UJ	1 UJ	1 U	100 UJ	100 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 U	0.33 U	0.33 UJ	20 UJ	20 UJ
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	0.1 U	20 UJ	20 UJ
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	1 U	4,900 J	4,900 J
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	1 U	100 UJ	100 UJ
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	0.2 U	20 UJ	20 UJ
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	[redacted]	[redacted]
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	0.11 U	20 UJ	20 UJ

Appendix B

Table B-1
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-27	MWT-27	MWT-27	MWT-27	MWT-28	MWT-28
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20203	ALBW20217	ALBW20218	ALBW20233	ALBW20068	ALBW20069
Sample Date								12/18/2010	7/20/2011	7/20/2011	12/14/2011	1/3/2007	1/3/2007
QC Type								SA	SA	DU	SA	SA	DU
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	11	12	1	1
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.15 U	0.15 UJ	20 UJ	20 UJ
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	1 U	1 U	0.33 U	330 J	350 J
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	0.2 U	60 UJ	60 UJ
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.2 U	0.33 J	0.23 J	0.2 U	20 UJ	20 UJ
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U	0.21 U	20 UJ	20 UJ
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.51 J	0.13 U	0.13 U	0.13 U	20 UJ	20 UJ
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	0.25 U	20 UJ	20 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	21	0.18 U	0.18 U	3	20 UJ	20 UJ
Other													
Iron	UG/L	296000	100%			12	12					278,000 J	271,000 J
Iron+Manganese	UG/L	352900	100%			12	12					309,800 J	301,800 J
Manganese	UG/L	56900	100%			12	12					31,800	30,800
Ethane	UG/L	98	92%			81	88	3	6.2	6.1	2	10,000 UJ	10,000 UJ
Ethene	UG/L	200	89%			78	88	0.88	0.083	0.072	1.6	10,000 UJ	10,000 UJ
Methane	UG/L	23,000	97%			85	88	18,000	14,000	14,000	16,000	12,000 J	13,000 J
Sulfate	MG/L	1060	80%			68	88	25	0.76 J	0.61 J	19	2 U	2.3
Total Organic Carbon	MG/L	2050	100%			88	88	32	42	41	35	1,820 J	1,730 J

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-28	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20083	ALBW20098	ALBW20113	ALBW20128	ALBW20144	ALBW20158
Sample Date								3/16/2007	6/5/2007	11/15/2007	6/25/2008	12/15/2008	6/3/2009
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								2	3	4	5	6	7
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	20 U	20 U	5 U	4 U	2.6 U	0.26 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	2.1 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	20 U	20 UJ	5 U	4 U	3.1 U	0.31 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	20 U	20 U	5 U	4 U	2.3 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	20 U	20 U	5 U	4 U	7.5 U	0.75 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	20 U	20 U	5 U	4 U	2.9 U	0.29 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	4.1 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	20 U	20 U	5 U	4 U	10 UJ	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	20 U	20 U	5 U	4 U	1.7 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	20 U	20 U	5 U	4 U	2 U	0.2 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	20 U	20 U	5 U	4 U	2.1 U	0.21 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	20 U	20 U	5 U	4 U	1.4 U	0.14 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	20 U	20 U	5 U	4 U	1.6 U	0.16 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	20 U	20 U	5 U	4 U	1.6 U	0.16 U
Acetone	UG/L	2600	24%			41	172	170	520	25 U	20 U	13 U	1.9 J
Benzene	UG/L	0.38	1%	1	0	2	178	20 U	20 U	5 U	4 U	1.6 U	0.16 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	20 U	20 U	5 U	4 U	3.8 U	0.39 U
Bromoform	UG/L	0	0%	80	0	0	178	20 U	20 U	5 U	4 U	2.6 U	0.26 UJ
Carbon disulfide	UG/L	0	0%			0	178	20 U	20 U	5 U	4 U	1.9 U	0.19 UJ
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	2.7 U	0.27 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	1.8 U	0.32 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	20 U	20 U	5 U	4 U	3.2 U	0.32 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	20 U	20 U	5 U	4 UJ	3.2 U	0.32 U
Chloroform	UG/L	27	9%	7	4	16	178	20 U	20 U	5 U	4 U	3.4 U	0.34 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	20 U	20 U	5 U	4 U	1.6 U	0.16 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	20 U	20 U	5 U	4 U	3.6 U	0.36 U
Cyclohexane	UG/L	0	0%			0	178	20 U	20 U	5 U	4 U	2.2 U	0.53 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	2.8 U	0.29 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	20 U	20 U	5 U	4 U	1.8 U	0.18 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	20 U	20 U	5 U	4 U	1.9 U	0.19 U
Methyl Acetate	UG/L	6	1%			2	178	20 UJ	20 U	5 UJ	4 UJ	1.7 U	0.17 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	20 U	20 U	5 U	4 UJ	2.8 U	0.28 U
Methyl butyl ketone	UG/L	0	0%			0	178	100 U	100 U	25 UJ	20 UJ	12 U	1.2 U
Methyl chloride	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	3.4 U	0.35 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	20 U	20 U	5 U	4 U	2.2 U	0.5 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	180	510	25 U	20 U	13 U	1.3 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	100 U	100 U	25 U	20 U	9.1 U	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	20 U	20 U	5 U	4 U	1.6 U	0.16 U
Methylene chloride	UG/L	18	7%	5	7	12	178	20 U	9.3 J	5 U	4 U	4.4 UJ	0.44 U
Styrene	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	1.8 U	0.18 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-28	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20083	ALBW20098	ALBW20113	ALBW20128	ALBW20144	ALBW20158
Sample Date								3/16/2007	6/5/2007	11/15/2007	6/25/2008	12/15/2008	6/3/2009
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								2	3	4	5	6	7
Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	20 U	20 U	5 U	4 U	3.6 U	0.36 U
Toluene	UG/L	590	16%	5	17	28	178	160	500	210	53	5.1 U	0.57 J
Total Xylenes	UG/L	60	1%	5	1	2	178	60 U	60 U	15 U	12 U	9.3 U	0.66 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	20 U	20 U	5 U	4 U	1.3 U	0.13 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	20 U	20 U	5 U	4 U	3.7 U	0.37 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	20 U	20 U	5 U	4 U	1.8 U	0.18 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	20 U	20 UJ	5 U	4 UJ	1.5 U	0.15 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	20 U	20 U	5 U	4 U	2.4 U	0.24 U
Other													
Iron	UG/L	296000	100%			12	12	33,000					
Iron+Manganese	UG/L	352900	100%			12	12	37,450					
Manganese	UG/L	56900	100%			12	12	4,450					
Ethane	UG/L	98	92%			81	88	0.67	0.01 J	0.014 J	0.65	2	1.9
Ethene	UG/L	200	89%			78	88	0.48	0.057	0.025 U	0.044	0.12	0.062
Methane	UG/L	23,000	97%			85	88	19,000	11,000	11,000	12,000	19,000	14,000
Sulfate	MG/L	1060	80%			68	88	2 U	2 U	2 U	2 U	48.3	0.35 U
Total Organic Carbon	MG/L	2050	100%			88	88	171	309	92	49.2	27.9	28.7

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-28	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20159	ALBW20174	ALBW20188	ALBW20189	ALBW20204	ALBW20219
Sample Date							6/3/2009	12/18/2009	6/29/2010	6/29/2010	12/18/2010	7/19/2011
QC Type							DU	SA	SA	DU	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							7	8	9	9	10	11
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	1.1 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	1.5 UJ	0.5 UJ	0.5 UJ	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	1.2 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	1.9 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.29 U	1.5 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	2 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 UJ	2 U	0.44 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.83 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	1 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.21 U	1.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	1.6 U	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	1.8 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	2 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.9 J	6.7 U	6.2 J	5.9 J	5 UJ	5 UR
Benzene	UG/L	0.38	1%	1	0	2	178	0.16 U	2 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.39 U	1.9 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 UJ	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 UJ	0.97 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 U	1.3 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.32 U	1.6 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	1.6 U	0.1 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	1.6 UJ	1 U	1 U	1 U	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	0.34 U	1.7 U	0.14 U	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	0.16 U	1.9 U	0.15 U	0.15 U	0.51 J	0.15 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	1.8 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.53 U	2.7 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.29 U	1.4 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.18 U	0.92 U	0.17 J	0.17 J	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.96 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 UJ	2.5 U	0.19 UJ	0.19 UJ	0.19 U	0.19 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	1.4 UJ	0.8 UJ	0.8 UJ	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	6.2 U	1 UJ	1 UJ	1 U	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.35 U	1.7 U	0.33 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.5 U	2.5 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	6.6 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	4.5 U	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.8 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 U	2.2 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.92 U	0.11 U	0.11 U	0.11 U	0.11 U

Table B-1
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-28	MWT-28	MWT-28	MWT-28	MWT-28	MWT-28
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20159	ALBW20174	ALBW20188	ALBW20189	ALBW20204	ALBW20219
Sample Date								6/3/2009	12/18/2009	6/29/2010	6/29/2010	12/18/2010	7/19/2011
QC Type								DU	SA	SA	DU	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	9	10	11
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	1.8 U	0.15 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	0.6 J	2.6 U	0.52 J	0.48 J	0.33 U	1 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.66 U	3.3 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.13 U	2.1 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	1.8 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.18 U	2.3 U	0.13 U	0.13 U	0.13 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 U	0.76 UJ	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	0.24 U	1.2 U	0.18 U	0.18 U	0.64 J	0.18 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	1.7	1.6	1.6	1.5	1.4	0.9
Ethene	UG/L	200	89%			78	88	0.066	0.12	0.057	0.061	0.17	0.0085 J
Methane	UG/L	23,000	97%			85	88	12,000	15,000	14,000	13,000	12,000	8,800
Sulfate	MG/L	1060	80%			68	88	0.35 U	3.16	0.5 U	0.5 U	4.8	0.63 J
Total Organic Carbon	MG/L	2050	100%			88	88	27.6	25.5	21	21	12	17

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-28 GW ALBW20234 12/14/2011 SA LTM 12 Value (Q)	ASH LANDFILL MWT-29 GW ALBW20070 1/3/2007 SA LTM 1 Value (Q)	ASH LANDFILL MWT-29 GW ALBW20084 3/16/2007 SA LTM 2 Value (Q)	ASH LANDFILL MWT-29 GW ALBW20085 3/16/2007 DU LTM 2 Value (Q)	ASH LANDFILL MWT-29 GW ALBW20099 6/5/2007 SA LTM 3 Value (Q)	ASH LANDFILL MWT-29 GW ALBW20114 11/14/2007 SA LTM 4 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	2 U	5 U	4 U	2 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	2 U	5 U	4 U	2 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	2 U	5 U	4 U	2 UJ	1 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	2 U	5 U	4 U	2 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	2 U	5 U	4 U	2 U	1 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.11 U	2 U	5 U	4 U	2 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	2 U	5 U	4 U	2 U	1 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	2 U	5 U	4 U	2 U	1 U
1,2-Dichloroethane	UG/L	5.8	14%	0.6	21	25	178	0.1 U	2 U	5 U	4 U	2 U	1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	2 U	5 U	4 U	2 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	2 U	5 U	4 U	2 U	1 U
Acetone	UG/L	2600	24%			41	172	5 U	10 U	15 J	14 J	5.7 J	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	2 U	5 U	4 U	2 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	2 U	5 U	4 U	2 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	2 U	5 U	4 U	2 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	2 U	5 U	4 U	2 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	2 U	5 U	4 U	2 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	2 U	5 U	4 U	2 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.14 U	2 U	5 U	4 U	2 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	0.28 J	280	220	220	100	96
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	2 U	5 U	4 U	2 U	1 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	2 U	5 U	4 U	2 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	2 U	5 U	4 U	2 U	1 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	2 U	5 U	4 U	2 U	1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	2 U	5 UJ	4 UJ	2 U	1 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	2 U	5 U	4 U	2 U	1 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	10 U	25 U	20 U	10 U	5 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 UJ	2 U	5 U	4 U	2 U	1 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	2 U	5 U	4 U	2 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	10 U	25 U	20 U	10 U	5 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	10 U	25 U	20 U	10 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	2 U	5 U	4 U	2 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	2 U	2.5 J	4 U	2 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	2 U	5 U	4 U	2 U	1 U

Table B-1
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-28	MWT-29	MWT-29	MWT-29	MWT-29	MWT-29
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20234	ALBW20070	ALBW20084	ALBW20085	ALBW20099	ALBW20114
Sample Date								12/14/2011	1/3/2007	3/16/2007	3/16/2007	6/5/2007	11/14/2007
QC Type								SA	SA	SA	DU	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								12	1	2	2	3	4
Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 UJ	2 U	5 U	4 U	2 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	2.6	5 U	2.2 J	2 U	2.1
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	6 U	15 U	12 U	6 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.2 U	6.5	7.5	8	2.1	0.83 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	2 U	5 U	4 U	2 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.13 U	22	19	19	7.6	4.4
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	2 U	5 U	4 U	2 UJ	1 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	0.56 J	140	160	170	81	7[illegible]
Other													
Iron	UG/L	296000	100%			12	12		1,370 J	2,470	2,550		
Iron+Manganese	UG/L	352900	100%			12	12		8,620 J	8,750	9,050		
Manganese	UG/L	56900	100%			12	12		7,250	6,280	6,500		
Ethane	UG/L	98	92%			81	88	1.6	2,000 U	20	25	13	19
Ethene	UG/L	200	89%			78	88	0.425 U	2,000 U	120	150	160	200
Methane	UG/L	23,000	97%			85	88	12,000	2,000 U	6,500	8,100	2,800	2,600
Sulfate	MG/L	1060	80%			68	88	19	113	179	173	151	289
Total Organic Carbon	MG/L	2050	100%			88	88	12	25.1 J	35	36.7	15.7	20.9

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-29	MWT-29	MWT-29	MWT-29	MWT-29	MWT-29
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20129	ALBW20130	ALBW20145	ALBW20160	ALBW20175	ALBW20190
Sample Date								6/25/2008	6/25/2008	12/15/2008	6/3/2009	12/16/2009	6/30/2010
QC Type								SA	DU	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								5	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	1 U	0.26 UJ	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.21 UJ	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.31 UJ	0.31 U	0.31 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	0.23 UJ	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	1 U	0.75 U	0.75 U	0.38 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	1 U	0.29 U	0.29 U	0.29 U	0.26 J
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.41 UJ	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 U	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	0.17 UJ	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	24%			41	172	5 U	5 U	1.3 UJ	1.3 U	1.3 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	0.26 UJ	0.26 UJ	0.26 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	0.19 U	0.19 UJ	0.19 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	0.27 UJ	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 UJ	1 UJ	0.32 U	0.32 U	0.32 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	83	95	91	61	37	79
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	0.22 UJ	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.28 U	0.29 U	0.29 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	8	1%			2	178	1 UJ	1 UJ	0.17 UJ	0.17 UJ	0.5 U	0.19 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	1 UJ	1 UJ	0.28 U	0.28 U	0.28 U	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	176	1 U	1 U	0.34 U	0.35 U	0.35 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	0.22 UJ	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	5 U	1.3 UJ	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 U	0.91 UJ	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	0.16 UJ	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U

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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-29	MWT-29	MWT-29	MWT-29	MWT-29	MWT-29
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20129	ALBW20130	ALBW20145	ALBW20180	ALBW20175	ALBW20190
Sample Date								6/25/2008	6/25/2008	12/15/2008	6/3/2009	12/16/2009	6/30/2010
QC Type								SA	DU	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								5	5	8	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.62 J	0.68 J	0.6 J	0.67 J	0.65 J	1.1
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	3.2	3.3	6.6	4.5	3.5	1.3
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 UJ	1 UJ	0.15 UJ	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	73		80		29	6
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	15	14	14	10	6.7	18
Ethene	UG/L	200	89%			78	88	140	140	19	47	12	88
Methane	UG/L	23,000	97%			85	88	3,200	3,000	2,700	3,000	1,500	5,400
Sulfate	MG/L	1060	80%			68	88	173	174	312	300	644 J	170
Total Organic Carbon	MG/L	2050	100%			88	88	14.2	14	13.8	11.8	8.2	10

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-29	MWT-29	MWT-29	MWT-22	MWT-22	MWT-22
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20205	ALBW20220	ALBW20235	ALBW20071	ALBW20075	ALBW20100
Sample Date								12/19/2010	7/20/2011	12/14/2011	1/4/2007	3/17/2007	6/6/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U	2 U	4 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	2 U	4 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	2 U	4 U	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	2 U	4 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.4 J	0.11 U	0.11 U	2 U	4 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 U	0.44 U	2 U	4 U	1 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	2 U	4 U	1 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U	0.1 U	0.1 U	2 U	4 U	1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	2 U	4 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	2 U	4 U	1 U
Acetone	UG/L	2600	24%			41	172	5 UJ	5 UR	5 U	10 U	18 J	38
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 U	0.5 U	2 U	4 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	2 U	4 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	2 U	4 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 U	0.1 U	2 U	4 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 UJ	1 U	2 UJ	4 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.14 J	0.14 U	0.14 U	2 U	4 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	38	33	8.5	130	90	120
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	2 U	4 U	1 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U	2 U	4 U	1 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	2 U	4 U	1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	0.19 UJ	0.19 U	2 U	4 UJ	1 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 UJ	2 U	4 U	1 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 UJ	1 U	10 U	20 U	5 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 U	0.33 UJ	2 U	4 U	1 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	2 U	4 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	6 J	20 U	5 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	10 U	20 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	2 U	4 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1.2 J	4 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	2 U	4 U	1 U

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-29	MWT-29	MWT-29	MWT-22	MWT-22	MWT-22
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20205	ALBW20220	ALBW20235	ALBW20071	ALBW20075	ALBW20100
Sample Date								12/19/2010	7/20/2011	12/14/2011	1/4/2007	3/17/2007	6/6/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.15 UJ	2 U	4 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	0.33 U	0.33 U	2 U	4 U	1 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	6 U	12 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.77 J	1.6	0.26 J	2.7	4 U	3.2
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U	2 U	4 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	2.1	0.79 J	2.4	[redacted]	3.8 J	[redacted]
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	2 U	4 U	1 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	[redacted]	43	[redacted]	98	64	[redacted]
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	5.1	8.3	1.7			
Ethene	UG/L	200	89%			78	88	7.9	47	7.3			
Methane	UG/L	23,000	97%			85	88	3,100	3,100	760			
Sulfate	MG/L	1060	80%			68	88	300	170	210			
Total Organic Carbon	MG/L	2050	100%			88	88	7.4	7.7	4.9			

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-22 GW ALBW20115 11/14/2007 SA LTM 4 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20121 6/25/2008 SA LTM 5 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20136 12/15/2008 SA LTM 6 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20151 6/3/2009 SA LTM 7 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20166 12/16/2009 SA LTM 8 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20181 7/1/2010 SA LTM 9 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	5 U	1.3 UJ	0.26 U	1.3 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	5 U	1 UJ	0.21 U	1.1 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	5 UJ	1.6 UJ	0.31 U	1.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	5 U	1.2 UJ	0.23 U	1.2 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	5 U	3.8 U	0.75 U	1.9 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	5 U	1.4 U	0.29 U	1.5 U	0.12 J
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	5 U	2 UJ	0.41 U	2 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	5 UJ	5 UJ	1 UJ	2 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	5 U	0.85 UJ	0.17 U	0.83 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	5 U	1 U	0.2 U	1 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	1 U	5 U	1 U	0.21 U	1.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	5 U	0.7 U	0.14 U	1.6 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	5 U	0.8 U	0.16 U	1.8 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	5 U	0.8 U	0.16 U	2 U	0.28 U
Acetone	UG/L	2600	24%			41	172	5 U	25 U	6.5 UJ	2.5 J	6.7 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	5 U	0.8 U	0.16 U	2 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	5 U	1.9 U	0.39 U	1.9 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	5 U	1.3 UJ	0.28 UJ	1.3 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	5 U	0.95 U	0.19 UJ	0.97 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	5 U	1.4 UJ	0.27 U	1.3 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	5 U	0.9 U	0.32 U	1.6 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	5 U	1.8 U	0.32 U	1.6 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	5 UJ	1.6 U	0.32 U	1.6 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	5 U	1.7 U	0.34 U	1.7 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	99	68	160	66	57	41
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	5 U	1.8 U	0.36 U	1.8 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	1 U	5 U	1.1 UJ	0.53 U	2.7 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	5 U	1.4 U	0.29 U	1.4 U	0.25 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	5 U	0.9 U	0.18 U	0.92 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	5 U	0.95 U	0.19 U	0.96 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	1 UJ	5 UJ	0.85 UJ	0.17 UJ	2.5 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	5 UJ	1.4 U	0.28 U	1.4 U	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 UJ	25 UJ	6 U	1.2 U	6.2 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	5 UJ	1.7 U	0.35 U	1.7 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	5 U	1.1 UJ	0.5 U	2.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	25 UJ	6.5 UJ	1.3 U	6.6 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	25 UJ	4.6 UJ	0.91 U	4.5 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	5 U	0.8 UJ	0.16 U	0.8 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	5 U	2.2 UJ	0.44 U	2.2 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	1 U	5 U	0.9 U	0.18 U	0.92 U	0.11 U

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Parameter	Unit	Maximum Value	Frequency of Detection	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-22 GW ALBW20115 11/14/2007 SA LTM 4 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20121 6/25/2008 SA LTM 5 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20136 12/15/2008 SA LTM 6 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20151 6/3/2009 SA LTM 7 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20166 12/16/2009 SA LTM 8 Value (Q)	ASH LANDFILL MWT-22 GW ALBW20181 7/1/2010 SA LTM 9 Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	5 U	1.8 U	0.36 U	1.8 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	5 U	2.6 U	0.51 U	2.6 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	15 U	4.6 U	0.66 U	3.3 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.85 J	5 U	0.65 U	0.77 J	2.1 U	1.3
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	5 U	1.8 U	0.37 U	1.8 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	2.6	3 J	5.9	2.2	2.3 U	0.6 J
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	5 UJ	0.75 UJ	0.15 U	0.76 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	180	42	140	89	52	57
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html;
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-22	MWT-22	MWT-22
Matrix							GW	GW	GW
Sample ID							ALBW20196	ALBW20211	ALBW20226
Sample Date							12/17/2010	7/20/2011	12/14/2011
QC Type							SA	SA	SA
Study ID							LTM	LTM	LTM
Sample Round							10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds										
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.66 J	0.11 U	0.38 J
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.25 J	0.1 U	0.29 J
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	5 UJ	5 UR	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 UJ	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.14 U	0.14 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	[redacted]	[redacted]	[redacted]
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	0.19 UJ	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 UJ	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 U	0.33 UJ
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U

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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-22	MWT-22	MWT-22
Matrix								GW	GW	GW
Sample ID								ALBW20196	ALBW20211	ALBW20226
Sample Date								12/17/2010	7/20/2011	12/14/2011
QC Type								SA	SA	SA
Study ID								LTM	LTM	LTM
Sample Round								10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detection**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.15 UJ
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	2.8	2	3.9
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	1.8	0.32 J	2.3
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	98	5[2]	83
Other										
Iron	UG/L	296000	100%			12	12			
Iron+Manganese	UG/L	352900	100%			12	12			
Manganese	UG/L	56900	100%			12	12			
Ethane	UG/L	98	92%			81	88			
Ethene	UG/L	200	89%			78	88			
Methane	UG/L	23,000	97%			85	88			
Sulfate	MG/L	1060	80%			68	88			
Total Organic Carbon	MG/L	2050	100%			88	88			

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-22	PT-22	PT-22	PT-22	PT-22	PT-22
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20060	ALBW20086	ALBW20089	ALBW20104	ALBW20118	ALBW20133
Sample Date								1/3/2007	3/15/2007	6/5/2007	11/14/2007	6/26/2008	12/15/2008
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								1	2	3	4	5	6
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	1 U	1 U	1 U	1 U	0.26 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.21 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 UJ	0.31 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	1 U	1 U	1 U	0.23 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	1 U	1 U	1 U	1 U	0.75 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	1 U	1 U	1 U	1 U	0.29 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 U	0.41 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 U	1 U	1 U	1 UJ	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	1 U	1 U	1 U	0.17 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.2 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	3.3	2.4	5.6	5	3.9	2.8
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	1 U	1 U	1 U	0.14 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Acetone	UG/L	2600	24%			41	172	5 U	5 U	3.8 J	5.3	5 U	1.3 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.38 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.26 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.27 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	1 U	1 U	1 U	0.32 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 UJ	1 U	1.1 J	0.82 J	1 UJ	0.32 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	1 U	1 U	1 U	1 U	0.34 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	57	41	61	30	26	52
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.22 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 UJ	1 U	1 U	0.28 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	1 U	1 U	1 U	0.18 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	1 U	1 U	1 U	0.19 U
Methyl Acetate	UG/L	6	1%			2	178	1 U	1 UJ	1 UJ	1 U	1 UJ	0.17 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	1 U	1 UJ	1 U	1 UJ	0.28 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 U	5 U	5 U	5 U	5 UJ	1.2 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 UJ	0.34 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	1 UJ	1 U	1 U	0.22 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	5 U	5 U	5 U	5 UJ	1.3 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 U	5 U	5 U	5 UJ	0.91 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	1 U	1 U	1 U	0.16 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 UJ	1 U	1 U	1 U	1 U	0.44 UJ
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.18 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-22	PT-22	PT-22	PT-22	PT-22	PT-22
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20060	ALBW20086	ALBW20089	ALBW20104	ALBW20118	ALBW20133
Sample Date								1/3/2007	3/15/2007	6/5/2007	11/14/2007	6/26/2008	12/15/2008
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								1	2	3	4	5	6
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 U	0.36 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	1 U	1 U	1 U	0.51 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	3 U	3 U	3 U	0.93 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.86 J	0.51 J	0.72 J	0.67 J	0.57 J	0.41 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	1 U	1 U	1 U	0.37 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	11	16	8.5	9.7	4.1	35
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	1 U	1 U	1 UJ	0.15 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	22	13	32	11	13	1.3
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring

Ash Landfill Annual Report, Year 5

Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-22	PT-22	PT-22	PT-22	PT-22	PT-22
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20148	ALBW20163	ALBW20178	ALBW20193	ALBW20208	ALBW20223
Sample Date								6/2/2009	12/16/2009	6/30/2010	12/17/2010	7/22/2011	12/14/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	0.21 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	0.31 U	0.5 UJ	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	0.38 U	0.25 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.29 U	0.29 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 UJ	0.39 U	0.44 U	0.44 U	0.44 UJ	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	4	3	3.2	1.9	0.1 U	[illegible]
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.3 U	1.3 U	5 U	5 UJ	5.3 J	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.16 U	0.41 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 UJ	0.26 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 UJ	0.19 U	0.6 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 U	0.27 U	0.5 U	0.5 U	0.5 UJ	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	0.32 U	0.1 U	0.1 U	0.1 UJ	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	0.32 U	1 U	1 U	1 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.34 U	0.34 U	0.14 U	0.19 J	1 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	41	29	43	42	42	32
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.53 U	0.53 U	0.25 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.29 U	0.29 U	0.25 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 UJ	0.5 U	0.19 UJ	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	0.28 U	0.8 U	0.8 UJ	0.8 UJ	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	1.2 U	1 UJ	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.35 U	0.35 U	0.33 U	0.33 U	0.33 U	0.33 UJ
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	1.3 U	1 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	0.91 U	1 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.16 U	0.2 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 U	0.44 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-22	PT-22	PT-22	PT-22	PT-22	PT-22
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20148	ALBW20163	ALBW20178	ALBW20193	ALBW20208	ALBW20223
Sample Date								6/2/2009	12/16/2009	6/30/2010	12/17/2010	7/22/2011	12/14/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								7	8	9	10	11	12
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U	0.15 UJ
Toluene	UG/L	590	16%	5	17	28	178	0.51 U	0.51 U	0.33 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.66 U	0.66 U	0.2 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.81 J	0.42 U	0.75 J	0.48 J	0.2 U	0.37 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178		8.7	4.6		3	34
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.25 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178					0.18 U	0.68 J
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20065	ALBW20080	ALBW20094	ALBW20109	ALBW20110	ALBW20125
Sample Date							1/3/2007	3/16/2007	6/6/2007	11/16/2007	11/16/2007	6/25/2008
QC Type							SA	SA	SA	SA	DU	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							1	2	3	4	4	5
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	4 U	4 U	2 U	10 U	4 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	4 U	4 U	2 UJ	10 U	4 U	1 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	4 U	4 U	2 U	10 U	4 U	1 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	4 U	4 U	2 U	10 U	4 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	[illegible]	4 U	1.6 J	10 U	4 U	0.6 J
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	4 U	4 U	2 U	10 U	4 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Acetone	UG/L	2600	24%			41	172	180	190	190	64	62	4 J
Benzene	UG/L	0.38	1%	1	0	2	178	4 U	4 U	2 U	10 U	4 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	4 U	4 U	2 U	10 U	4 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	4 U	4 U	2 U	10 U	4 U	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	4 U	4 U	2 U	10 U	4 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	60	11	3.1	10 U	2.1 J	1 U
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Cyclohexane	UG/L	0	0%			0	178	4 U	4 U	2 U	10 U	4 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	4 U	4 U	1.3 J	10 U	4 U	0.85 J
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	4 U	4 U	2 U	10 U	4 U	1 U
Methyl Acetate	UG/L	6	1%			2	178	4 U	4 UJ	5.1	10 U	4 UJ	1 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	4 U	4 U	2 U	10 U	4 U	1 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	20 U	20 U	10 U	50 U	20 UJ	5 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	4 U	4 U	2 U	10 U	4 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	250	130	73	26 J	25	12
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	20 U	20 U	10 U	50 U	20 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	4 U	4 U	2 U	10 U	4 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	2.8 J	4 U	2 U	[illegible]	4 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20065	ALBW20080	ALBW20094	ALBW20109	ALBW20110	ALBW20125
Sample Date							1/3/2007	3/16/2007	6/6/2007	11/16/2007	11/16/2007	6/25/2008
QC Type							SA	SA	SA	SA	DU	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							1	2	3	4	4	5
Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	4 U	7.4	37	570	590	300
Total Xylenes	UG/L	60	1%	5	1	2	178	12 U	12 U	6 U	30 U	12 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	4 U	4 U	2 U	10 U	4 U	1 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	4 U	4 U	2 U	10 U	4 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	4 U	4 U	2 U	10 U	4 U	1 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	4 U	4 U	2 UJ	10 U	4 U	1 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	23	4.8	2 U	10 U	2.3 J	1 U
Other													
Iron	UG/L	296000	100%			12	12	122,000 J	120,000				
Iron+Manganese	UG/L	352900	100%			12	12	141,500 J	139,500				
Manganese	UG/L	56900	100%			12	12	19,500	19,500				
Ethane	UG/L	98	92%			81	88	10,000 U	45	4.1	0.49	0.66	0.53
Ethene	UG/L	200	89%			78	88	10,000 U	5.9	0.28	0.3	0.39	0.048
Methane	UG/L	23,000	97%			85	88	12,000	23,000	18,000	15,000	17,000	18,000
Sulfate	MG/L	1060	80%			68	88	2 U	2 U	2 U	2.8	2.7	2 U
Total Organic Carbon	MG/L	2050	100%			88	88	260 J	210	303	147	155	28.4

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20140	ALBW20155	ALBW20170	ALBW20185	ALBW20200	ALBW20201
Sample Date							12/12/2008	6/2/2009	12/15/2009	6/29/2010	12/19/2010	12/19/2010
QC Type							SA	SA	SA	SA	SA	DU
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							6	7	8	9	10	10
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 UJ	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	0.21 U	0.21 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	0.31 U	0.31 U	0.5 UJ	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	0.75 U	0.38 U	0.25 U	0.52 J	0.52 J
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.29 U	0.29 U	0.29 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 UJ	1 UJ	0.39 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.6 J	[illegible]	0.21 U	[illegible]	[illegible]	[illegible]
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.3 U	1.6 J	1.3 U	5 U	5 UJ	5 UJ
Benzene	UG/L	0.38	1%	1	0	2	178	0.16 U	0.16 U	0.41 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.38 U	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 U	0.26 UJ	0.26 UJ	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 U	0.19 UJ	0.19 UJ	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 UJ	0.27 U	0.27 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.18 U	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	0.32 U	0.32 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	0.32 U	0.32 UJ	1 U	1 UJ	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	0.34 U	0.34 U	0.34 U	0.14 U	0.14 U	0.17 J
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	2.4	0.42 J	0.47 J	0.41 J	4.6	4.6
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.22 U	0.53 U	0.53 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.28 UJ	0.29 U	0.29 U	0.25 U	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.71 J	0.49 J	0.18 U	0.38 J	0.14 J	0.12 J
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 U	0.17 UJ	0.5 U	0.19 UJ	0.19 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	0.28 U	0.28 U	0.8 UJ	0.8 U	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	1.2 U	1.2 U	1 UJ	1 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.34 U	0.35 U	0.35 UJ	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.22 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	1.3 U	1.3 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	0.91 U	0.91 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.16 U	0.16 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 UJ	0.44 U	0.44 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-23	MWT-23	MWT-23	MWT-23	MWT-23	MWT-23
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20140	ALBW20155	ALBW20170	ALBW20185	ALBW20200	ALBW20201
Sample Date								12/12/2008	6/2/2009	12/15/2009	6/29/2010	12/19/2010	12/19/2010
QC Type								SA	SA	SA	SA	SA	DU
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								6	7	8	9	10	10
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	43	1.5	0.51 U	0.34 J	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.33 U	0.66 U	0.66 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.13 U	0.13 U	0.42 U	0.2 U	0.49 J	0.49 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.41 J	0.18 U	0.46 U	0.13 U	0.34 J	0.34 J
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 UJ	0.15 U	0.15 U	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	2.8	0.24 U	0.24 U	0.18 U	5.3	5.3
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	4.6	1.6	1	2.4	16	16
Ethene	UG/L	200	89%			78	88	1.2	0.16	0.058	0.038	2.9	2.8
Methane	UG/L	23,000	97%			85	88	19,000	21,000	18,000	18,000	16,000	16,000
Sulfate	MG/L	1060	80%			68	88	6.3	0.35 U	0.35 U	0.5 U	16	16
Total Organic Carbon	MG/L	2050	100%			88	88	20.1	15.6	17.4	11	5.9	6.3

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-23 GW ALBW20215 7/19/2011 SA LTM 11 Value (Q)	ASH LANDFILL MWT-23 GW ALBW20230 12/14/2011 SA LTM 12 Value (Q)	ASH LANDFILL MWT-23 GW ALBW20231 12/14/2011 DU LTM 12 Value (Q)	ASH LANDFILL MWT-24 GW ALBW20063 1/3/2007 SA LTM 1 Value (Q)	ASH LANDFILL MWT-24 GW ALBW20078 3/15/2007 SA LTM 2 Value (Q)	ASH LANDFILL MWT-24 GW ALBW20092 6/5/2007 SA LTM 3 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	176	0.5 U	0.5 U	0.5 U	0.71 J	0.58 J	2 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	1 U	1 U	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	2 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	1 U	1 U	2 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	0.32 J	0.33 J	0.81 J	0.83 J	1.1 J
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.11 U	0.11 U	0.11 U	1 U	1 U	2 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 U	0.44 U	1 U	1 U	2 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	2 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	[illegible]	[illegible]	[illegible]	1 U	1 U	2 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	1 U	1 U	2 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	1 U	1 U	2 U
Acetone	UG/L	2600	24%			41	172	5 UR	5 U	5 U	42 U	54	73
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	1 U	1 U	2 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	2 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 U	0.1 U	1 U	1 U	2 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 UJ	1 U	1 U	1 U	1 U	2 U
Chloroform	UG/L	27	9%	7	4	16	178	0.14 U	0.14 U	0.14 U	1 U	1 U	2 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	0.57 J	2	2	210	68	19
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	2 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.13 J	0.15 J	0.17 J	1 U	1 U	2 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	2 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 UJ	0.19 U	0.19 U	1 U	1 UJ	6
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 UJ	1 U	1 U	2 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 UJ	1 U	1 U	5 U	5 U	10 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 UJ	0.33 UJ	1 U	1 U	2 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	2 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	24	36	40
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	5 U	5 U	10 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	1 U	1 U	2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1 U	1 J
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	2 U

Table B-1
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-23	MWT-23	MWT-23	MWT-24	MWT-24	MWT-24
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20215	ALBW20230	ALBW20231	ALBW20063	ALBW20078	ALBW20092
Sample Date								7/19/2011	12/14/2011	12/14/2011	1/3/2007	3/15/2007	6/5/2007
QC Type								SA	SA	DU	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								11	12	12	1	2	3
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 UJ	0.15 UJ	1 U	1 U	2 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	0.33 U	0.33 U	1 U	1 U	2 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	3 U	3 U	6 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.22 J	0.38 J	0.35 J	2.1	0.88 J	2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	2 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.13 U	0.19 J	0.16 J	0.94 J	1 U	2 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	2 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	0.33 J	1.9	1.8	19	45	2
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	2.3	8.7	8.9			
Ethene	UG/L	200	89%			78	88	0.1	1.2	1.2			
Methane	UG/L	23,000	97%			85	88	15,000	16,000	16,000			
Sulfate	MG/L	1060	80%			68	88	1.5	14	14			
Total Organic Carbon	MG/L	2050	100%			88	88	6.2	6.3	6.3			

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-24	MWT-24	MWT-24	MWT-24	MWT-24	MWT-24
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20107	ALBW20122	ALBW20137	ALBW20152	ALBW20167	ALBW20182
Sample Date								11/13/2007	6/26/2008	12/12/2008	6/2/2009	12/15/2009	7/1/2010
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	5 U	0.76 J	0.26 U	0.4 J	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	5 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	5 UJ	0.31 U	0.31 U	0.31 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	5 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	5 U	0.75 U	0.75 U	0.7 J	0.79 J
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	5 U	0.29 U	0.29 U	0.29 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	5 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	5 UJ	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	5 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	5 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	1 U	5 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	5 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	5 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	5 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	24%			41	172	5 U	25 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	5 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	5 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	5 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	5 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	5 U	0.27 UJ	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	5 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	5 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	5 UJ	0.32 U	0.47 J	0.32 UJ	1 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	5 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	5 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	1 U	5 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	5 U	0.28 UJ	0.29 U	0.29 U	0.25 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	5 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	5 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	1 UJ	5 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	5 UJ	0.28 U	0.28 U	0.28 U	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 UJ	25 UJ	1.2 U	1.2 U	1.2 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	5 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	5 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	25 UJ	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	25 UJ	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	5 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	5 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	1 U	5 U	0.18 U	0.18 U	0.18 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							MWT-24	MWT-24	MWT-24	MWT-24	MWT-24	MWT-24
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20107	ALBW20122	ALBW20137	ALBW20152	ALBW20167	ALBW20182
Sample Date							11/13/2007	6/26/2008	12/12/2008	6/2/2009	12/15/2009	7/1/2010
QC Type							SA	SA	SA	SA	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	5 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	5 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	15 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1 U	5 U	0.13 U	0.13 U	0.42 U	0.41 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	5 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	1.6	5 U	6	4.8	4.7	5
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	5 UJ	0.15 UJ	0.15 U	0.15 U	0.15 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	3.1	5 U	3.6	7.3	4	7.5
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html).
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Appendix

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	ASH LANDFILL MWT-24 GW ALBW20197 12/17/2010 SA LTM 10 Value (Q)	ASH LANDFILL MWT-24 GW ALBW20212 7/22/2011 SA LTM 11 Value (Q)	ASH LANDFILL MWT-24 GW ALBW20227 12/13/2011 SA LTM 12 Value (Q)	ASH LANDFILL PT-17 GW ALBW20058 1/2/2007 SA LTM 1 Value (Q)	ASH LANDFILL PT-17 GW ALBW20073 3/15/2007 SA LTM 2 Value (Q)	ASH LANDFILL PT-17 GW ALBW20087 6/5/2007 SA LTM 3 Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U	1 U	2 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	1 U	2 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	2 U	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	1 U	2 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.58 J	0.25 U	0.44 J	1 U	2 U	1 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.11 U	0.11 U	0.11 U	1 U	2 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 UJ	0.44 U	1 U	2 U	1 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	1 U	2 U	1 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U	[redacted]	0.1 U	1 U	2 U	1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	1 U	2 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	1 U	2 U	1 U
Acetone	UG/L	2600	24%			41	172	5 UJ	5 U	5 U	9.3 U	22	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 UJ	0.5 U	1 U	2 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	1 U	2 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 UJ	0.5 UJ	1 U	2 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 UJ	0.1 U	1 U	2 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 UJ	1 U	2 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.19 J	0.14 U	0.14 U	1 U	2 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	23	39	16	62	26	43
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	1 U	2 U	1 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 UJ	1 U	2 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U	1 U	2 U	1 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	1 U	2 U	1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	0.19 U	0.19 U	1 U	2 UJ	1 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 UJ	1 U	2 U	1 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 U	1 U	5 U	10 U	5 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 U	0.33 UJ	1 U	2 U	1 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	1 U	2 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	5.4	11	5 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	5 U	10 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	1 U	2 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1.2 J	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	1 U	2 U	1 U

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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-24	MWT-24	MWT-24	PT-17	PT-17	PT-17
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20197	ALBW20212	ALBW20227	ALBW20058	ALBW20073	ALBW20087
Sample Date								12/17/2010	7/22/2011	12/13/2011	1/2/2007	3/15/2007	6/5/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.15 U	1 U	2 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	0.33 U	0.33 U	1 U	2 U	1 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	3 U	6 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1	1.6	0.39 J	1 U	2 U	0.77 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 UJ	1 U	2 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	3.3	5.6	3.1	6	11	3.4
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	2 U	1 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	4.3	17	2.3	21	21	9.9
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
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Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Area	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
								Loc ID	PT-17	PT-17	PT-17	PT-17	PT-17	PT-17
								Matrix	GW	GW	GW	GW	GW	GW
								Sample ID	ALBW20102	ALBW20116	ALBW20131	ALBW20146	ALBW20161	ALBW20176
								Sample Date	11/13/2007	6/26/2008	12/11/2008	6/2/2009	12/15/2009	7/1/2010
								QC Type	SA	SA	SA	SA	SA	SA
								Study ID	LTM	LTM	LTM	LTM	LTM	LTM
								Sample Round	4	5	6	7	8	9
Volatile Organic Compounds														
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178		1 U	1 U	0.26 UJ	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178		1 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178		1 U	1 UJ	0.31 U	0.31 U	0.31 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178		1 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178		1 U	1 U	0.75 U	0.75 U	0.38 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178		1 U	1 U	0.29 U	0.29 U	0.29 U	0.24 J
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178		1 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178		1 U	1 UJ	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178		1 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178		1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178		1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178		1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178		1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178		1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	24%			41	172		5 U	5 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178		1 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178		1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178		1 U	1 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U
Carbon disulfide	UG/L	0	0%			0	178		1 U	1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178		1 U	1 U	0.27 UJ	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178		1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178		1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178		1 U	1 UJ	0.32 U	0.49 J	0.32 UJ	1 U
Chloroform	UG/L	27	9%	7	4	16	178		1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178		27	21	24	56	65	81
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178		1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178		1 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178		1 U	1 U	0.28 UJ	0.29 U	0.29 U	0.25 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178		1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178		1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178		1 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177		1 U	1 UJ	0.28 U	0.28 U	0.28 U	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178		5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178		1 U	1 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178		1 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178		5 U	5 UJ	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178		5 U	5 UJ	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178		1 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178		1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	5	0	0	178		1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-17	PT-17	PT-17	PT-17	PT-17	PT-17
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20102	ALBW20116	ALBW20131	ALBW20146	ALBW20161	ALBW20176
Sample Date								11/13/2007	6/26/2008	12/11/2008	6/2/2009	12/15/2009	7/1/2010
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.54 J	1 U	0.46 J	1.1	1.8	3.2
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178		8.5	9.2	8	7.8	3
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.15 UJ	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	2	23	10	55	20	53
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88		98	6.9	50	9.9	16
Ethene	UG/L	200	89%			78	88		66	6.6	56	5	20
Methane	UG/L	23,000	97%			85	88		5,700	380	8,300	1,500	4,300
Sulfate	MG/L	1060	80%			68	88		15.2	45.8	28	46.2 J	36
Total Organic Carbon	MG/L	2050	100%			88	88		6	2.6	4.9	2.4	2.4

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound wes not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-17	PT-17	PT-17	MWT-7	MWT-7	MWT-7
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20191	ALBW20206	ALBW20221	ALBW20062	ALBW20077	ALBW20091
Sample Date								12/18/2010	7/21/2011	12/13/2011	1/4/2007	3/15/2007	6/5/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	0.25 UJ	0.25 U	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.42 J	0.11 U	0.11 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 U	0.44 U	1 U	1 U	1 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	1 U	1 U	1 U
Acetone	UG/L	2600	24%			41	172	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 UJ	0.5 U	1 U	1 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 UJ	1 U	1 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.15 J	0.14 U	0.14 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	39	94	25	35	42	61
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 UJ	1 U	1 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	8	1%			2	178	0.19 U	0.19 U	0.19 U	1 U	1 UJ	1 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 U	1 U	1 U	1 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 U	1 U	5 U	5 U	5 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 UJ	0.33 UJ	1 U	1 U	1 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	5 U	5 U	5 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	5 U	5 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-17	PT-17	PT-17	MWT-7	MWT-7	MWT-7
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20191	ALBW20206	ALBW20221	ALBW20062	ALBW20077	ALBW20091
Sample Date								12/18/2010	7/21/2011	12/13/2011	1/4/2007	3/15/2007	6/5/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	1 U	0.15 U	1 U	1 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	3 U	3 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	2.2	7	1.8	1 U	1 U	1 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	8.1	4.5	11	490	440	410
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	16	56	12	0.51 J	9.7	18
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	4.8	1.8	1.7			
Ethene	UG/L	200	89%			78	88	3.5	3.8	2.4			
Methane	UG/L	23,000	97%			85	88	900	780	810			
Sulfate	MG/L	1060	80%			68	88	31	24	27			
Total Organic Carbon	MG/L	2050	100%			88	88	1.5	3.4	1.6			

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-7	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20106	ALBW20120	ALBW20135	ALBW20150	ALBW20165	ALBW20180
Sample Date								11/13/2007	6/25/2008	12/15/2008	6/2/2009	12/15/2009	7/1/2010
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	1 U	1 U	0.26 U	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.31 U	0.31 U	0.31 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	1 U	1 U	0.75 U	0.75 U	0.38 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	1 U	0.29 U	0.29 U	0.48 J	0.78 J
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 UJ	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.8	14%	0.6	21	25	178	1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	24%			41	172	5 U	5 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	0.16 U	0.18 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	0.26 U	0.26 UJ	0.28 UJ	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	0.27 U	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.65 J	1 UJ	0.93 J	0.61 J	0.32 UJ	1 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	90	90	79	68	140	170
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.28 U	0.29 U	0.29 U	0.25 UJ
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	1 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	1 UJ	0.28 U	0.28 U	0.28 U	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	5 UJ	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 UJ	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-7	MWT-7	MWT-7	MWT-7	MWT-7	MWT-7
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20106	ALBW20120	ALBW20135	ALBW20150	ALBW20165	ALBW20180
Sample Date								11/13/2007	6/25/2008	12/15/2008	6/2/2009	12/15/2009	7/1/2010
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1 U	1 U	0.13 U	0.13 U	0.55 J	0.91 J
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	510	440	410	330	350	330
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.15 U	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	24	12	13	9.3	21	15
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88		6.7	11	7.8	17	9
Ethene	UG/L	200	89%			78	88		2	0.27	0.76	0.52	0.55
Methane	UG/L	23,000	97%			85	88		400	670	1,100	2,900	1,700
Sulfate	MG/L	1060	80%			68	88		29.1	29.1	27	29.3 J	29
Total Organic Carbon	MG/L	2050	100%			88	88		2.3	3	3.1	4.5 J	1.5

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-7	MWT-7	MWT-7	PT-24	PT-24	PT-24
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20195	ALBW20210	ALBW20225	ALBW20061	ALBW20076	ALBW20090
Sample Date								12/18/2010	7/22/2011	12/13/2011	1/2/2007	3/15/2007	6/5/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U	0.94 J	1.2	0.68 J	1 U	0.75 J
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.98 J	0.11 U	0.11 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 UJ	0.44 U	1 U	1 U	1 U
1,2-Dibromoethene	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	1 U	1 U	1 U
Acetone	UG/L	2600	24%			41	172	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 UJ	0.5 U	1 U	1 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 UJ	0.5 U	1 U	1 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 UJ	0.1 U	1 U	1 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 UJ	1 U	1 U	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.14 U	0.14 U	0.14 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	120	12	56	54	38	60
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 UJ	1 U	1 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	0.19 U	0.19 U	1 U	1 UJ	1 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 U	1 U	1 U	1 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 U	1 U	5 U	5 U	5 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 U	0.33 UJ	1 U	1 U	1 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	5 U	5 U	5 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	5 U	5 U	5 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MWT-7	MWT-7	MWT-7	PT-24	PT-24	PT-24
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20195	ALBW20210	ALBW20225	ALBW20061	ALBW20076	ALBW20090
Sample Date								12/18/2010	7/22/2011	12/13/2011	1/2/2007	3/15/2007	6/5/2007
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	2	3
Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.15 U	1 U	1 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	3 U	3 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.75 J	0.34 J	0.24 J	0.86 J	0.81 J	1.6
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	3	0.52 J	2.3	4	2.8	3.1
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178				0.6 J	1 U	2.6
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88	4.5	4.9	0.84			
Ethene	UG/L	200	89%			78	88	0.2	0.21	0.425 U			
Methane	UG/L	23,000	97%			85	88	400	1,600	79			
Sulfate	MG/L	1060	80%			68	88	31	39	28			
Total Organic Carbon	MG/L	2050	100%			88	88	1.3	2	1.7			

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-24	PT-24	PT-24	PT-24	PT-24	PT-24
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20105	ALBW20119	ALBW20134	ALBW20149	ALBW20164	ALBW20179
Sample Date								11/13/2007	6/26/2008	12/12/2008	6/2/2009	12/15/2009	6/30/2010
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	176	1 U	1 U	0.26 U	0.26 U	0.26 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.21 U	0.21 U	0.21 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.31 U	0.31 U	0.31 U	0.5 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	1 U	1 U	0.23 U	0.23 U	0.23 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.56 J	0.69 J	0.75 U	0.75 U	0.38 U	0.54 J
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	1 U	1 U	0.29 U	0.29 U	0.29 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.41 U	0.41 U	0.41 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 U	1 UJ	1 UJ	1 UJ	0.39 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	1 U	1 U	0.17 U	0.17 U	0.17 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.2 U	0.2 U	0.2 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	1 U	1 U	0.21 U	0.21 U	0.21 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	1 U	1 U	0.14 U	0.14 U	0.32 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.16 U	0.16 U	0.36 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	1 U	1 U	0.16 U	0.16 U	0.39 U	0.28 U
Acetone	UG/L	2600	24%			41	172	5 U	5 U	1.3 U	1.3 U	1.3 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	1 U	1 U	0.16 U	0.16 U	0.41 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	1 U	1 U	0.38 U	0.39 U	0.39 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	1 U	1 U	0.26 U	0.26 UJ	0.26 UJ	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	1 U	1 U	0.19 U	0.19 UJ	0.19 UJ	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	1 U	1 U	0.27 U	0.27 U	0.27 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.18 U	0.32 U	0.32 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	1 U	1 U	0.32 U	0.32 U	0.32 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 UJ	0.32 U	0.32 U	0.32 UJ	1 U
Chloroform	UG/L	27	9%	7	4	16	178	1 U	1 U	0.34 U	0.34 U	0.34 U	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	39	48	34	32	28	33
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	1 U	1 U	0.22 U	0.53 U	0.53 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 U	0.28 U	0.29 U	0.29 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	1 U	1 U	0.19 U	0.19 U	0.19 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	1 UJ	1 UJ	0.17 U	0.17 UJ	0.5 U	0.19 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	1 U	1 UJ	0.28 U	0.28 U	0.28 U	0.8 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	5 UJ	5 UJ	1.2 U	1.2 U	1.2 U	1 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.34 U	0.35 U	0.35 UJ	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	1 U	1 U	0.22 U	0.5 U	0.5 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	5 U	5 UJ	1.3 U	1.3 U	1.3 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	5 U	5 UJ	0.91 U	0.91 U	0.91 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	1 U	1 U	0.16 U	0.16 U	0.16 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	0.44 UJ	0.44 U	0.44 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.18 U	0.18 U	0.18 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							PT-24	PT-24	PT-24	PT-24	PT-24	PT-24
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20105	ALBW20119	ALBW20134	ALBW20149	ALBW20164	ALBW20179
Sample Date							11/13/2007	6/26/2008	12/12/2008	6/2/2009	12/15/2009	6/30/2010
QC Type							SA	SA	SA	SA	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							4	5	6	7	8	9
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	1 U	1 U	0.36 U	0.36 U	0.36 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	1 U	1 U	0.51 U	0.51 U	0.51 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	3 U	3 U	0.93 U	0.66 U	0.66 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1 U	1.1	0.36 J	0.83 J	0.61 J	1.1
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	1 U	1 U	0.37 U	0.37 U	0.37 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	3.8	2.4	2.2	1.7	1.7	0.39 J
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	1 U	1 UJ	0.15 U	0.15 U	0.15 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	1 U	1.9	0.26 J	2	1.6	**3.8**
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
 a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
 b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								PT-24	PT-24	PT-24	MW-56	MW-56	MW-56
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20194	ALBW20209	ALBW20224	ALBW20072	ALBW20101	ALBW20124
Sample Date								12/17/2010	7/21/2011	12/13/2011	1/4/2007	6/6/2007	6/26/2008
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								10	11	12	1	3	5
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**	**Value (Q)**
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 UJ	1 UJ
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U	0.13 U	0.13 U	1 U	1 U	1 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.54 J	0.78 J	0.48 J	1 U	1 U	1 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U	0.44 U	0.44 U	1 U	1 U	1 UJ
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	1 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U	0.13 U	0.13 U	1 U	1 U	1 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U	0.28 U	0.28 U	1 U	1 U	1 U
Acetone	UG/L	2600	24%			41	172	5 UJ	5 U	5 U	5 U	5 U	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U	0.5 UJ	0.5 U	1 U	1 U	1 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U	0.6 U	0.6 U	1 U	1 U	1 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U	1 U	1 UJ	1 U	1 U	1 UJ
Chloroform	UG/L	27	9%	7	4	16	178	0.16 J	0.14 U	0.14 U	1 U	1 U	1 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	38	37	21	1.2	1.7	1.3
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U	0.25 U	0.25 U	1 U	1 U	1 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 UJ	1 U	1 U	1 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U	0.19 U	0.19 U	1 U	1 U	1 UJ
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 UJ	0.8 UJ	0.8 U	1 U	1 U	1 UJ
Methyl butyl ketone	UG/L	0	0%			0	178	1 U	1 U	1 U	5 U	5 U	5 UJ
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U	0.33 UJ	0.33 UJ	1 U	1 U	1 UJ
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U	0.1 U	0.1 U	1 U	1 U	1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U	1 U	1 U	5 U	5 U	5 UJ
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U	1 U	1 U	5 U	5 U	5 UJ
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U	0.2 U	0.2 U	1 U	1 U	1 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U	0.11 U	0.11 U	1 U	1 U	1 U

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area							ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID							PT-24	PT-24	PT-24	MW-56	MW-56	MW-56
Matrix							GW	GW	GW	GW	GW	GW
Sample ID							ALBW20194	ALBW20209	ALBW20224	ALBW20072	ALBW20101	ALBW20124
Sample Date							12/17/2010	7/21/2011	12/13/2011	1/4/2007	6/6/2007	6/26/2008
QC Type							SA	SA	SA	SA	SA	SA
Study ID							LTM	LTM	LTM	LTM	LTM	LTM
Sample Round							10	11	12	1	3	5
Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U	0.15 U	0.15 U	1 U	1 U	1 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U	0.33 U	0.33 U	1 U	1 U	1 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U	0.2 U	0.2 U	3 U	3 U	3 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	1.4	1.4	0.63 J	1 U	1 U	1 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U	0.21 U	0.21 U	1 U	1 U	1 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.53 J	0.38 J	0.82 J	1 U	1 U	1 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U	0.25 U	0.25 U	1 U	1 UJ	1 UJ
Vinyl chloride	UG/L	180	67%	2	100	119	178	97	7.9	2.9	1 U	1 U	1 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Table B-1

Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MW-56	MW-56	MW-56	MW-56	MW-56	MW-56
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20139	ALBW20154	ALBW20169	ALBW20184	ALBW20199	ALBW20214
Sample Date								12/11/2008	6/4/2009	12/18/2009	7/1/2010	12/19/2010	10/4/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								6	7	8	9	10	11
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Volatile Organic Compounds													
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.26 UJ	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.21 U	0.21 U	0.21 U	0.18 U	0.18 U	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.31 U	0.31 U	0.31 UJ	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.23 U	0.23 U	0.23 U	0.13 U	0.13 U	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.75 U	0.75 U	0.38 U	0.25 U	0.25 U	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.29 U	0.29 U	0.29 U	0.11 U	0.11 U	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.41 U	0.41 U	0.41 U	0.25 U	0.25 U	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	1 UJ	1 U	0.39 U	0.44 U	0.44 U	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.17 U	0.17 U	0.17 U	0.25 U	0.25 U	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.2 U	0.2 U	0.2 U	0.21 U	0.21 U	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.21 U	0.21 U	0.21 U	0.1 U	0.1 U	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.14 U	0.14 U	0.32 U	0.13 U	0.13 U	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.16 U	0.36 U	0.25 U	0.25 U	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.16 U	0.16 U	0.39 U	0.28 U	0.28 U	0.28 U
Acetone	UG/L	2600	24%			41	172	1.3 U	1.3 UJ	1.3 U	5 U	5 UJ	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.16 U	0.16 U	0.41 U	0.25 U	0.25 U	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.38 U	0.39 U	0.39 U	0.25 U	0.25 U	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.26 U	0.26 U	0.26 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.19 U	0.19 U	0.19 U	0.6 U	0.6 U	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.27 UJ	0.27 U	0.27 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.18 U	0.32 U	0.32 U	0.25 U	0.25 U	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.32 U	0.32 U	0.32 U	0.1 U	0.1 U	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	0.32 U	0.32 U	0.32 UJ	1 U	1 UJ	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.34 U	0.34 U	0.34 U	0.14 U	0.24 J	1
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	0.4 J	1	0.56 J	0.61 J	0.86 J	2.3
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.36 U	0.36 U	0.36 U	0.11 U	0.11 U	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.22 U	0.53 U	0.53 U	0.25 U	0.25 U	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.28 UJ	0.29 U	0.29 U	0.25 UJ	0.25 U	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.19 U	0.19 U	0.19 U	0.1 U	0.1 U	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.17 U	0.17 U	0.5 U	0.19 U	0.19 U	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.28 U	0.28 U	0.28 UJ	0.8 U	0.8 U	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178	1.2 U	1.2 U	1.2 U	1 U	1 U	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.34 U	0.35 U	0.35 U	0.33 U	0.33 U	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.22 U	0.5 U	0.5 U	0.1 U	0.1 U	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1.3 U	1.3 U	1.3 U	1 U	1 U	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	0.91 U	0.91 U	0.91 U	1 U	1 U	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.16 U	0.16 U	0.16 U	0.2 U	0.2 U	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	0.44 UJ	0.44 U	0.44 U	1 U	1 U	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.18 U	0.18 U	0.18 U	0.11 U	0.11 U	0.11 U

Appendix B

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Area								ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL	ASH LANDFILL
Loc ID								MW-56	MW-56	MW-56	MW-56	MW-56	MW-56
Matrix								GW	GW	GW	GW	GW	GW
Sample ID								ALBW20139	ALBW20154	ALBW20169	ALBW20184	ALBW20199	ALBW20214
Sample Date								12/11/2008	6/4/2009	12/18/2009	7/1/2010	12/19/2010	10/4/2011
QC Type								SA	SA	SA	SA	SA	SA
Study ID								LTM	LTM	LTM	LTM	LTM	LTM
Sample Round								6	7	8	9	10	11
Parameter	**Unit**	**Maximum Value**	**Frequency of Detections**	**Cleanup Goals[1]**	**Number of Exceedances**	**Number of Times Detected**	**Number of Samples Analyzed**	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.36 U	0.36 U	0.36 U	0.15 U	0.15 U	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	0.51 U	0.51 U	0.51 U	0.33 U	0.33 U	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.93 U	0.66 U	0.66 U	0.2 U	0.2 U	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.13 U	0.13 U	0.42 U	0.2 U	0.2 U	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.37 U	0.37 U	0.37 U	0.21 U	0.21 U	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.33 J	0.18 U	0.46 U	0.13 U	0.13 U	0.13 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.15 UJ	0.15 U	0.15 UJ	0.25 U	0.25 U	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	0.24 U	0.24 U	0.24 U	0.18 U	0.18 U	0.18 U
Other													
Iron	UG/L	296000	100%			12	12						
Iron+Manganese	UG/L	352900	100%			12	12						
Manganese	UG/L	56900	100%			12	12						
Ethane	UG/L	98	92%			81	88						
Ethene	UG/L	200	89%			78	88						
Methane	UG/L	23,000	97%			85	88						
Sulfate	MG/L	1060	80%			68	88						
Total Organic Carbon	MG/L	2050	100%			88	88						

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
  a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
  b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html)
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

Append..

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Complete Groundwater Data for Ash Landfill Long Term Monitoring
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Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)
Area								ASH LANDFILL
Loc ID								MW-56
Matrix								GW
Sample ID								ALBW20229
Sample Date								12/12/2011
QC Type								SA
Study ID								LTM
Sample Round								12
Volatile Organic Compounds								
1,1,1-Trichloroethane	UG/L	15	3%	5	1	5	178	0.5 U
1,1,2,2-Tetrachloroethane	UG/L	0	0%	5	0	0	178	0.18 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	UG/L	0	0%	5	0	0	178	0.5 U
1,1,2-Trichloroethane	UG/L	0	0%	1	0	0	178	0.13 U
1,1-Dichloroethane	UG/L	62	12%	5	1	22	178	0.25 U
1,1-Dichloroethene	UG/L	2.1	10%	5	0	18	178	0.11 U
1,2,4-Trichlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U
1,2-Dibromo-3-chloropropane	UG/L	0	0%	0.04	0	0	178	0.44 U
1,2-Dibromoethane	UG/L	0	0%	0.0006	0	0	178	0.25 U
1,2-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.21 U
1,2-Dichloroethane	UG/L	5.6	14%	0.6	21	25	178	0.1 U
1,2-Dichloropropane	UG/L	0.29	1%	1	0	1	178	0.13 U
1,3-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.25 U
1,4-Dichlorobenzene	UG/L	0	0%	3	0	0	178	0.28 U
Acetone	UG/L	2600	24%			41	172	5 U
Benzene	UG/L	0.38	1%	1	0	2	178	0.25 U
Bromodichloromethane	UG/L	0	0%	80	0	0	178	0.25 U
Bromoform	UG/L	0	0%	80	0	0	178	0.5 U
Carbon disulfide	UG/L	0	0%			0	178	0.6 U
Carbon tetrachloride	UG/L	0	0%	5	0	0	178	0.5 U
Chlorobenzene	UG/L	0	0%	5	0	0	178	0.25 U
Chlorodibromomethane	UG/L	0	0%	80	0	0	178	0.1 U
Chloroethane	UG/L	1.1	4%	5	0	7	178	1 U
Chloroform	UG/L	27	9%	7	4	16	178	0.14 U
Cis-1,2-Dichloroethene	UG/L	720	86%	5	115	153	178	0.95 J
Cis-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.11 U
Cyclohexane	UG/L	0	0%			0	178	0.25 U
Dichlorodifluoromethane	UG/L	0	0%	5	0	0	178	0.25 U
Ethyl benzene	UG/L	9.2	7%	5	1	13	178	0.11 U
Isopropylbenzene	UG/L	0.1	1%	5	0	1	178	0.1 U
Methyl Acetate	UG/L	6	1%			2	178	0.19 U
Methyl bromide	UG/L	0	0%	5	0	0	177	0.8 U
Methyl butyl ketone	UG/L	0	0%			0	178	1 U
Methyl chloride	UG/L	0	0%	5	0	0	178	0.33 U
Methyl cyclohexane	UG/L	0.17	1%			1	178	0.1 U
Methyl ethyl ketone	UG/L	4900	12%			22	178	1 U
Methyl isobutyl ketone	UG/L	1.9	1%			1	178	1 U
Methyl Tertbutyl Ether	UG/L	0	0%			0	178	0.2 U
Methylene chloride	UG/L	18	7%	5	7	12	178	1 U
Styrene	UG/L	0	0%	5	0	0	178	0.11 U

Table B-1
Complete Groundwater Data for Ash Landfill Long Term Monitoring
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

Area	ASH LANDFILL
Loc ID	MW-56
Matrix	GW
Sample ID	ALBW20229
Sample Date	12/12/2011
QC Type	SA
Study ID	LTM
Sample Round	12

Parameter	Unit	Maximum Value	Frequency of Detections	Cleanup Goals[1]	Number of Exceedances	Number of Times Detected	Number of Samples Analyzed	Value (Q)
Tetrachloroethene	UG/L	0	0%	5	0	0	178	0.15 U
Toluene	UG/L	590	16%	5	17	28	178	0.33 U
Total Xylenes	UG/L	60	1%	5	1	2	178	0.2 U
Trans-1,2-Dichloroethene	UG/L	8	50%	5	4	89	178	0.2 U
Trans-1,3-Dichloropropene	UG/L	0	0%	0.4	0	0	178	0.21 U
Trichloroethene	UG/L	2,700	70%	5	60	124	178	0.13 U
Trichlorofluoromethane	UG/L	0	0%	5	0	0	178	0.25 U
Vinyl chloride	UG/L	180	67%	2	100	119	178	0.18 U
Other								
Iron	UG/L	296000	100%			12	12	
Iron+Manganese	UG/L	352900	100%			12	12	
Manganese	UG/L	56900	100%			12	12	
Ethane	UG/L	98	92%			81	88	
Ethene	UG/L	200	89%			78	88	
Methane	UG/L	23,000	97%			85	88	
Sulfate	MG/L	1060	80%			68	88	
Total Organic Carbon	MG/L	2050	100%			88	88	

Notes:
1. The cleanup goal values are NYSDEC Class GA GW Standards unless noted otherwise.
   a. NYSDEC Class GA GW Standards (TOGS 1.1.1, June 1998).
   b. Federal Maximum Contaminant Level (http://www.epa.gov/safewater/contaminants/index.html);
2. Shading indicates a concentration above the GA GW standard.

U = compound was not detected
J = the reported value is and estimated concentration
UJ= the compound was not detected; the associated reporting limit is approximate.

APPENDIX C

REGRESSION PLOTS

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Figure C-1
Regression Plot of Well Concentrations At MWT-25
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

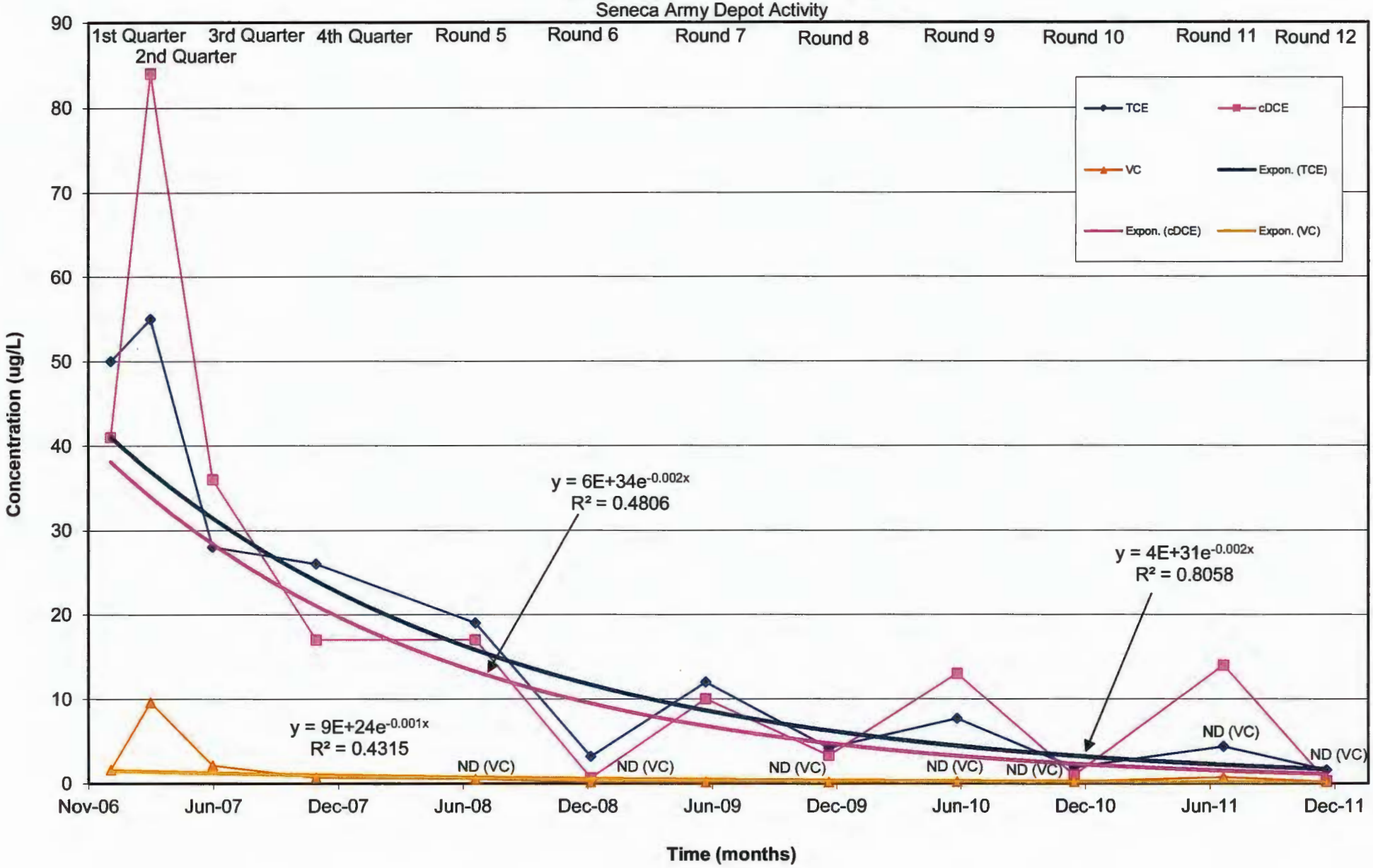

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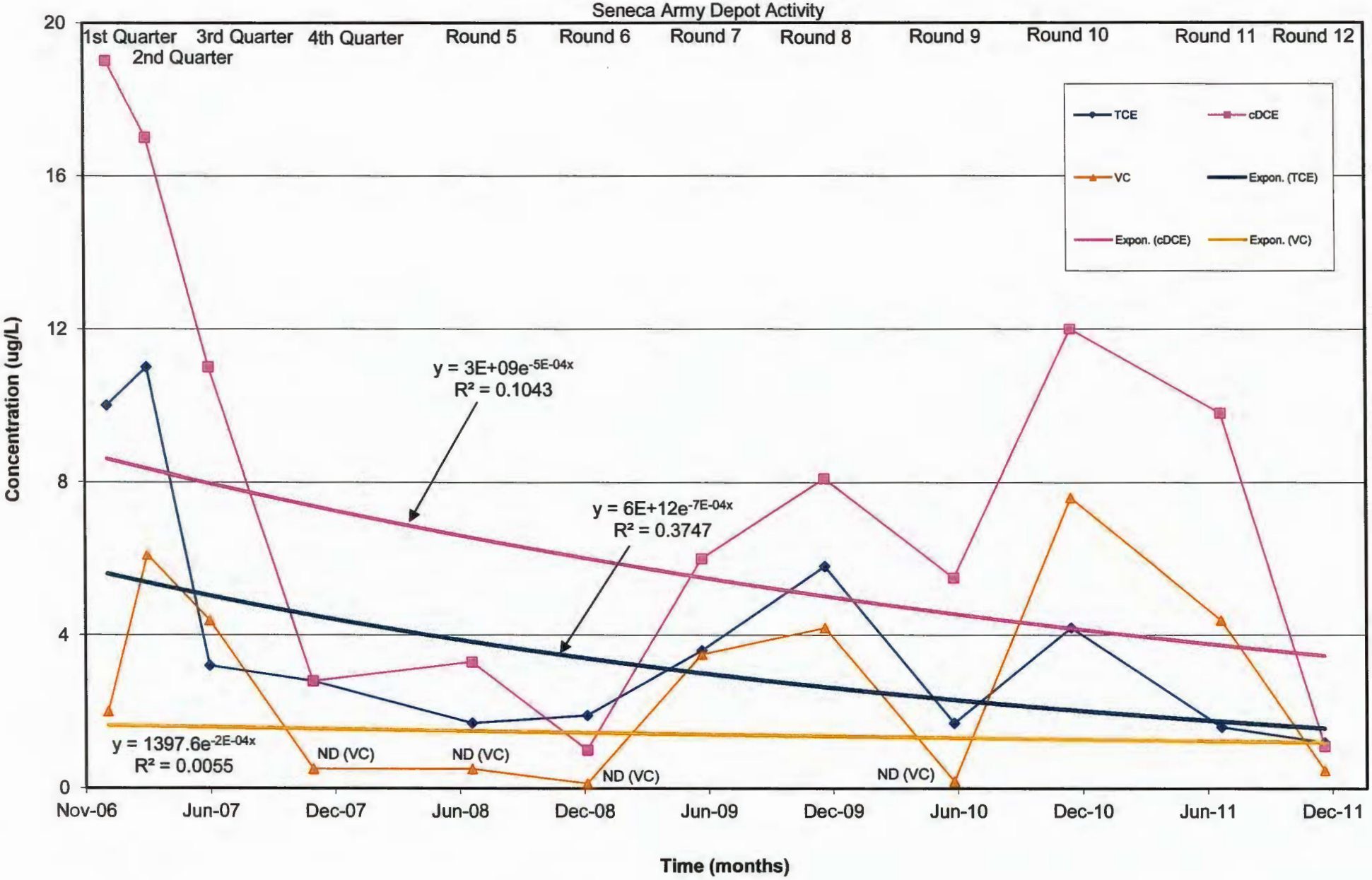
Figure C-2
Regression Plot of Well Concentrations At MWT-26
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



ND = not detected.

Fig C-3
Regression Plot of Well Concentrations At MWT-27
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

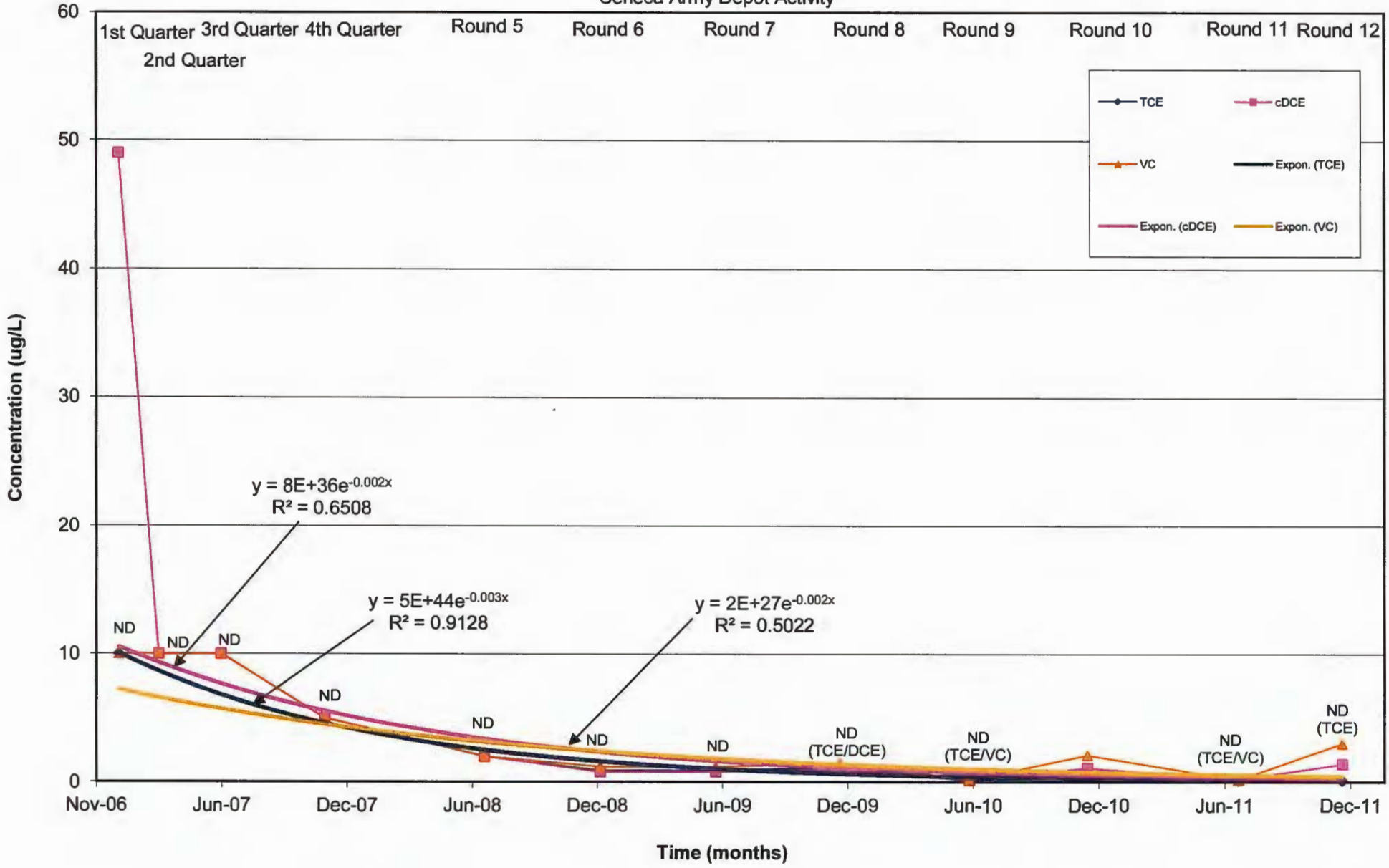


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Figure C-4
Regression Plot of Well Concentrations At MWT-28
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

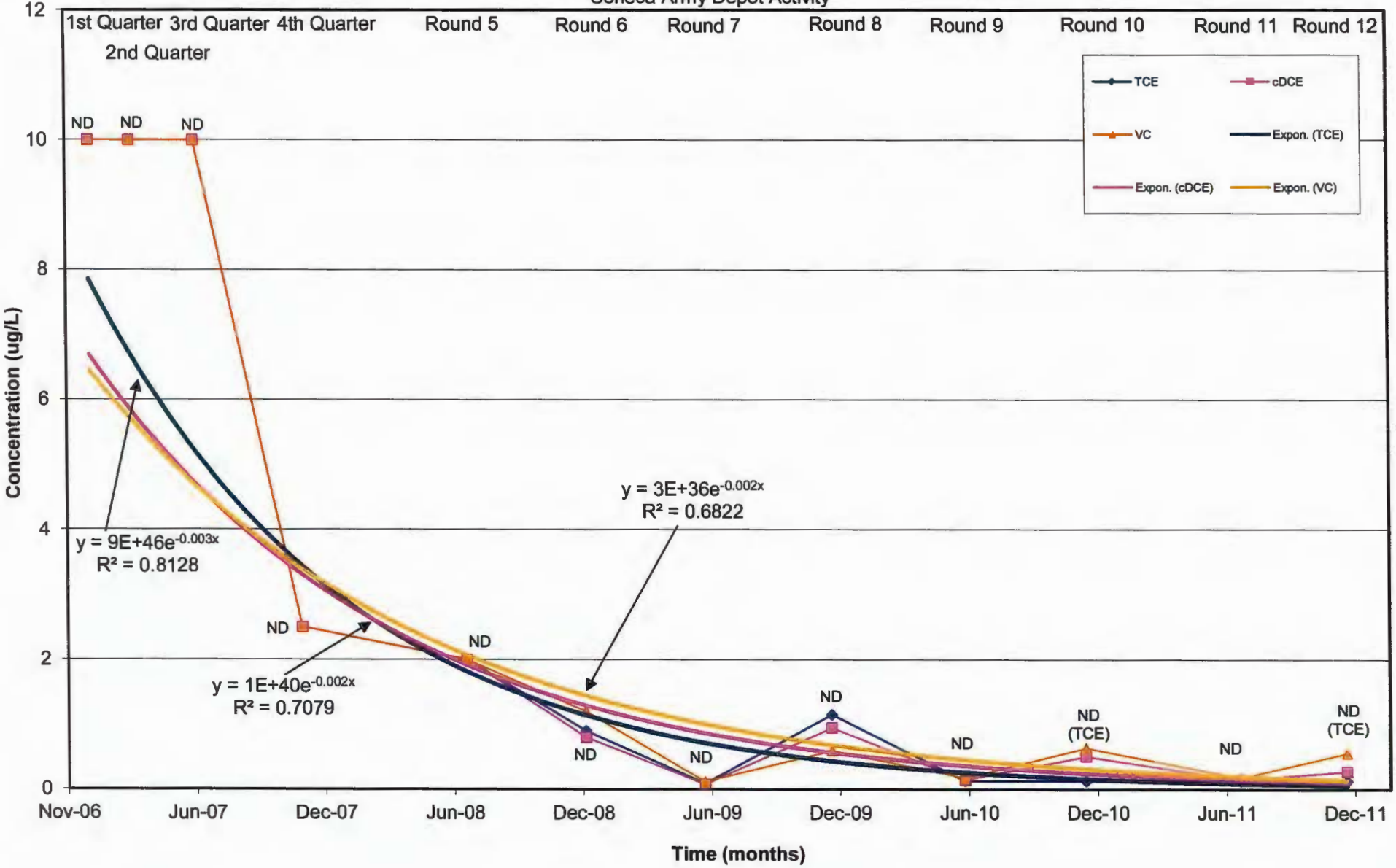

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Fig -5
Regression Plot of Well Concentrations At MWT-29
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

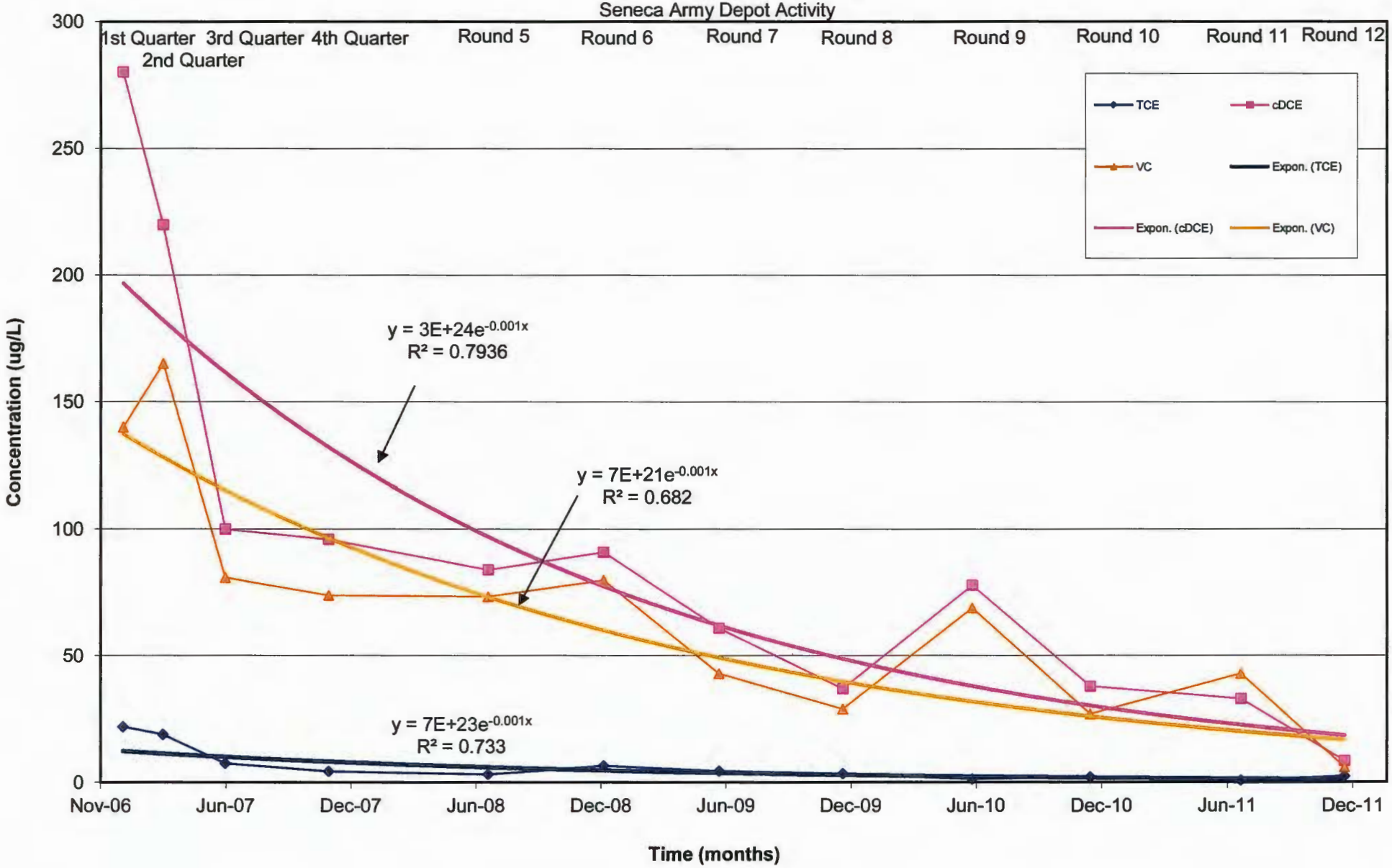

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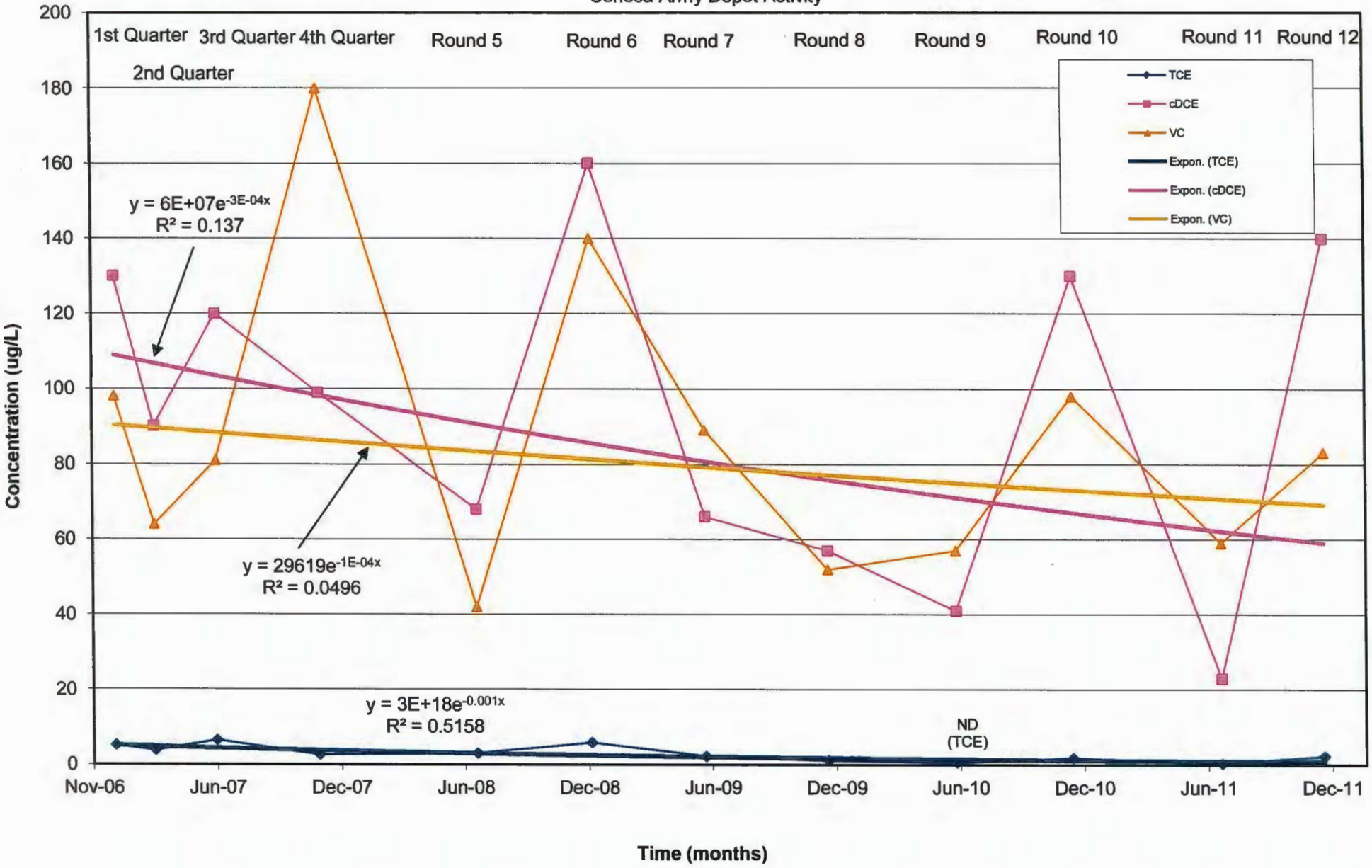
Figure C-6
Regression Plot of Well Concentrations At MWT-22
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



ND = not detected.

Fig -7
Regression Plot of Well Concentrations At PT-22
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

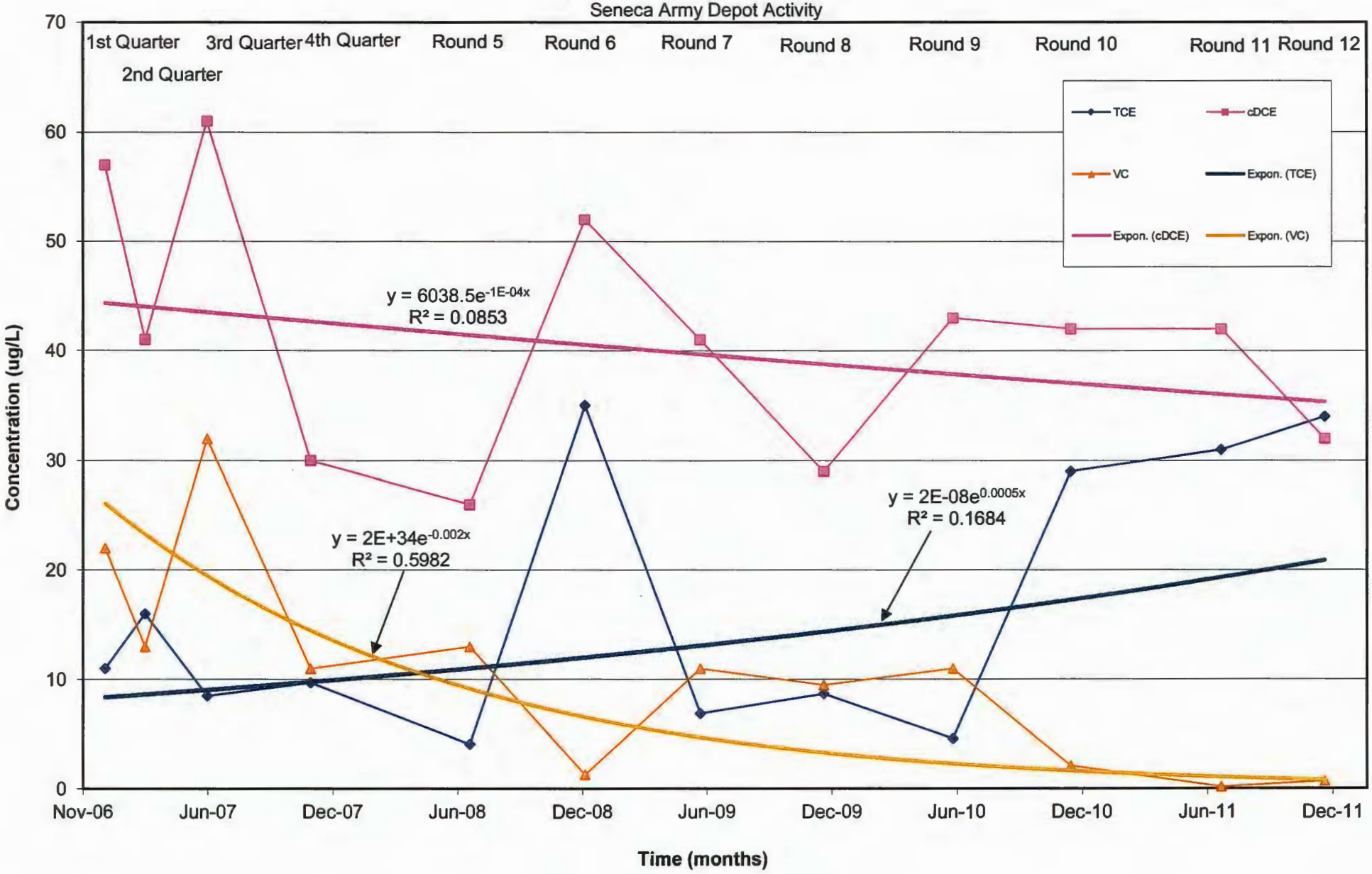


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Figure C-8
Regression Plot of Well Concentrations At MWT-23
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

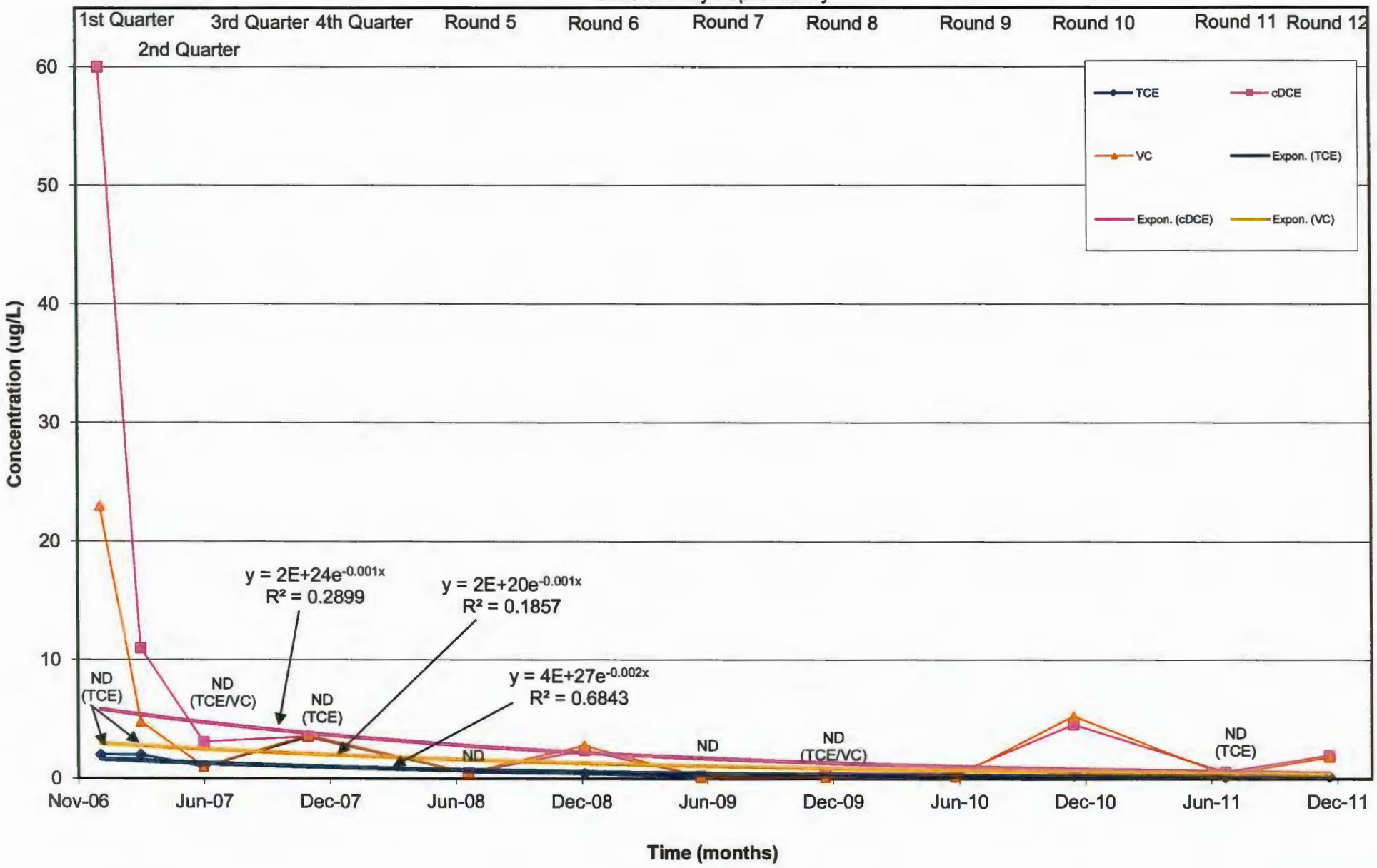

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Figure C-9
Regression Plot of Well Concentrations At MWT-24
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

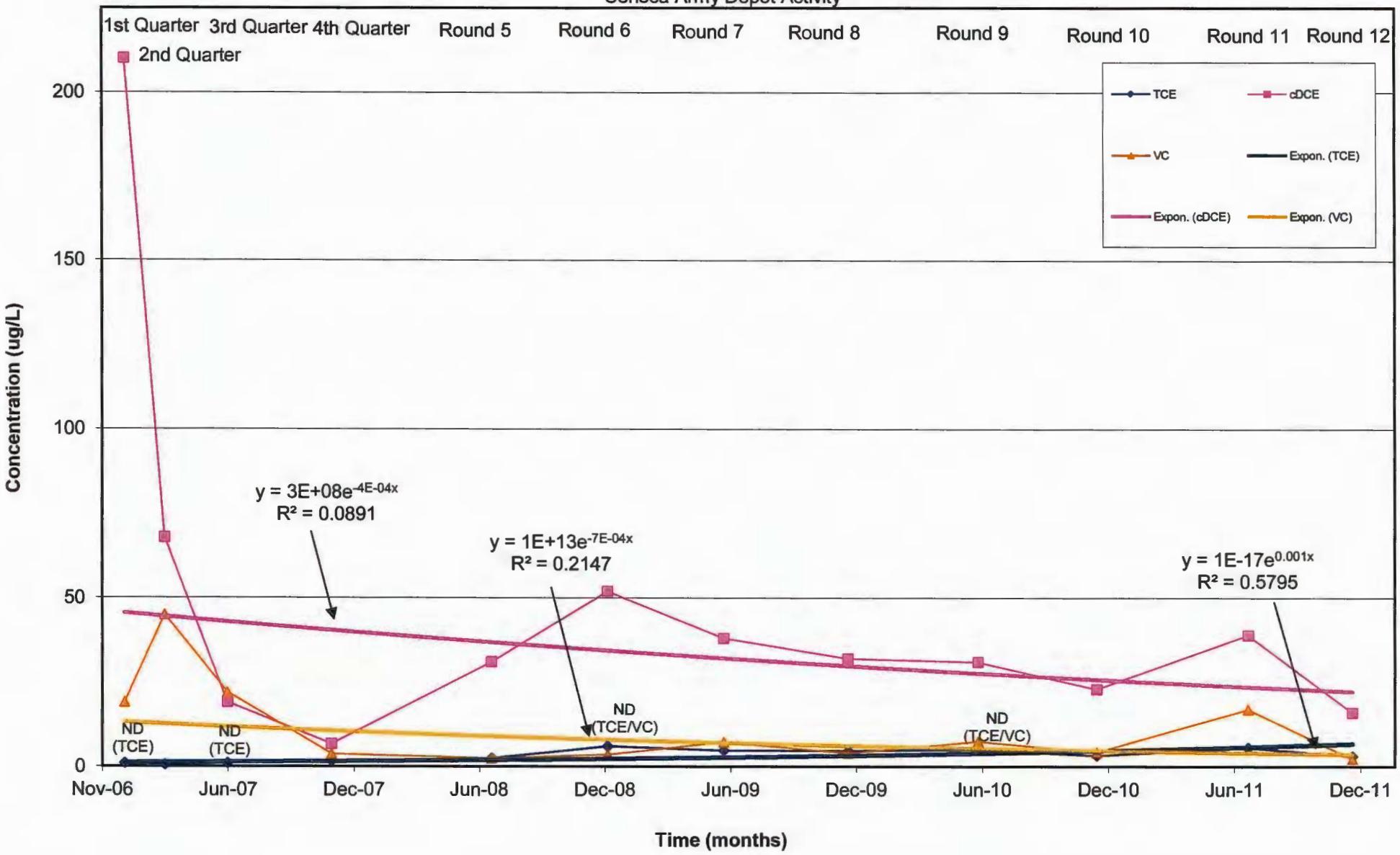

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Figure C-10
Regression Plot of Well Comcentrations At PT-24
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

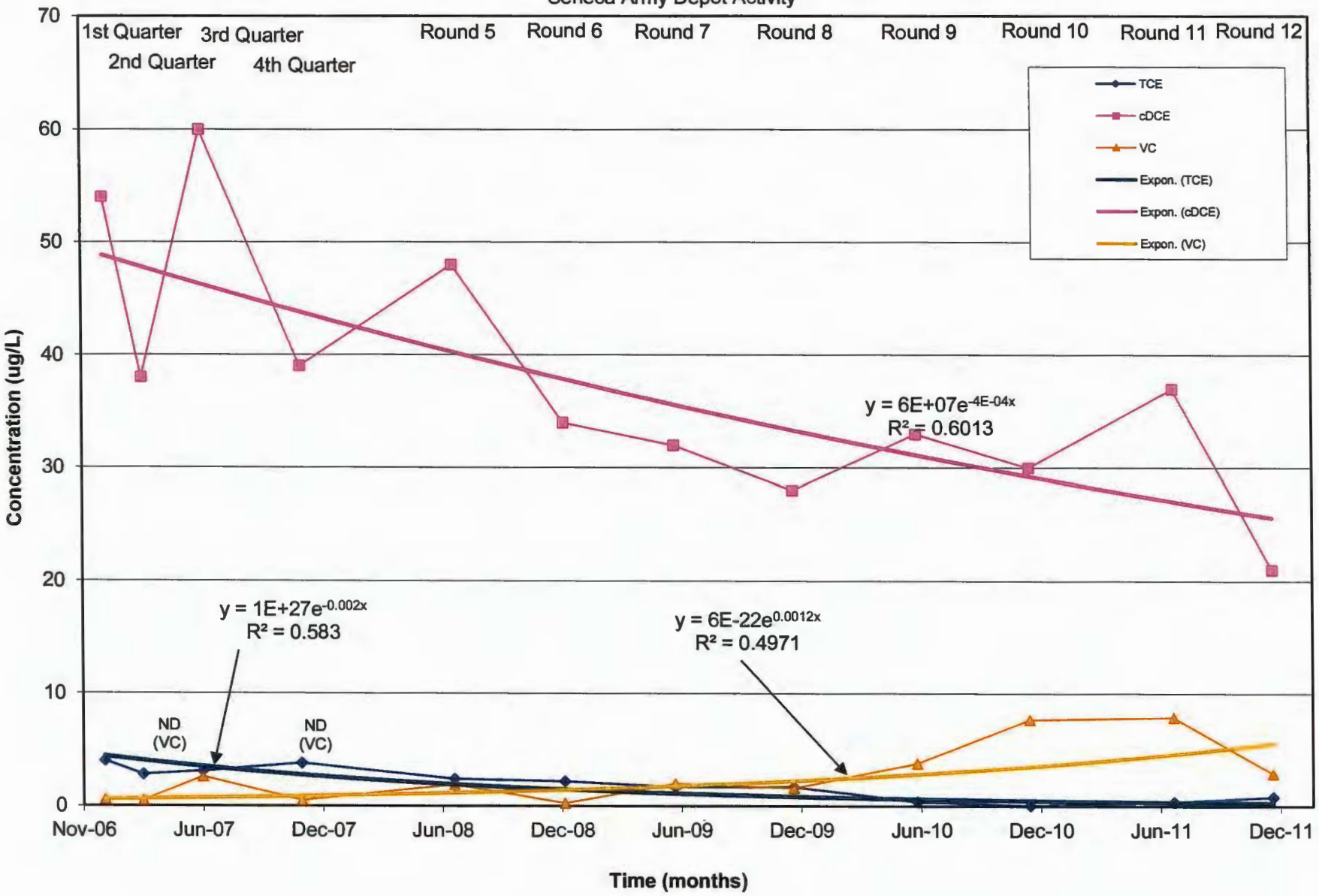

Fig)-11
Regression Plot of Well Concentrations At PT-18A
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

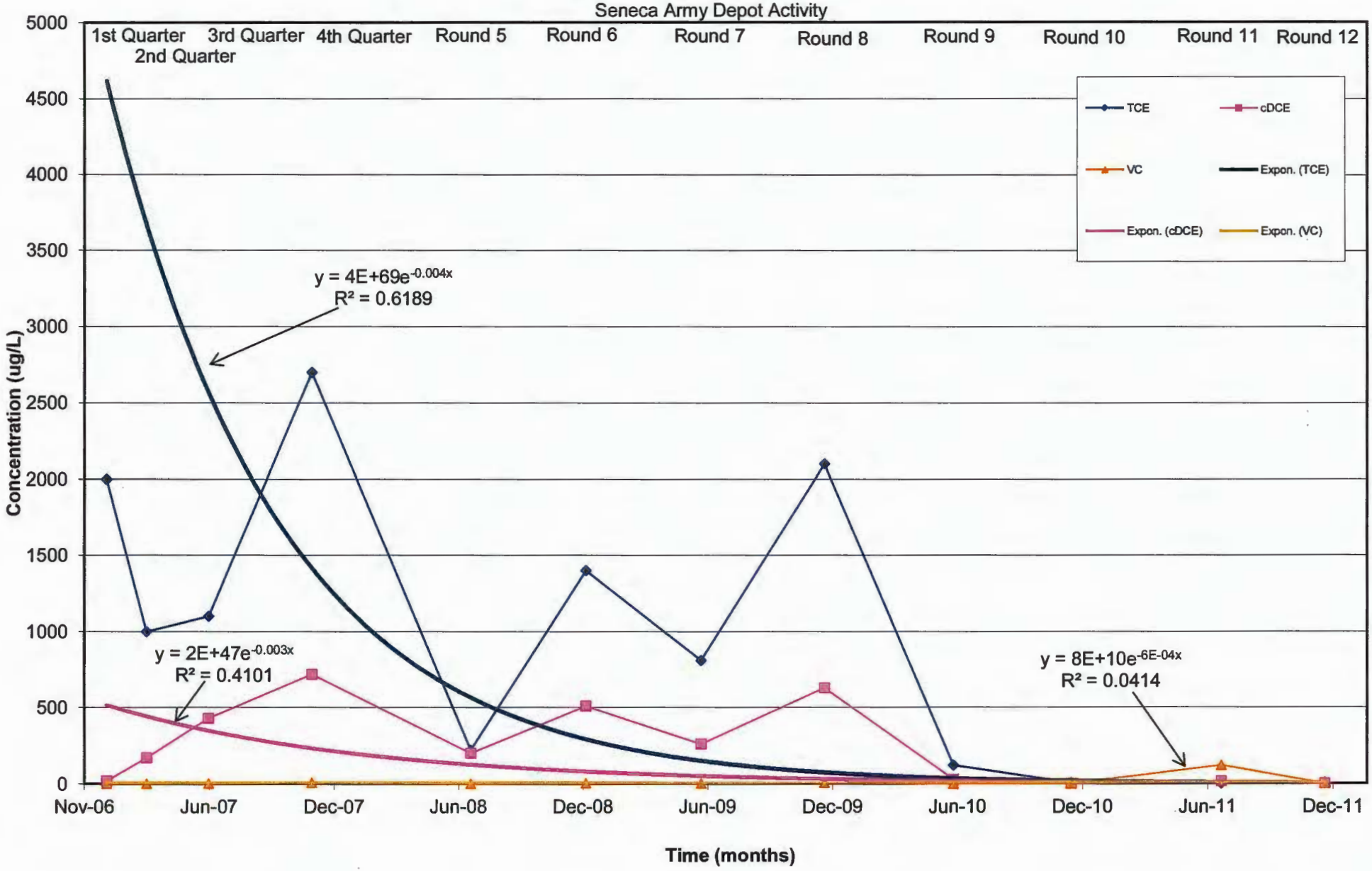

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Figure C-12
Regression Plot of Well Concentrations At PT-17
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity

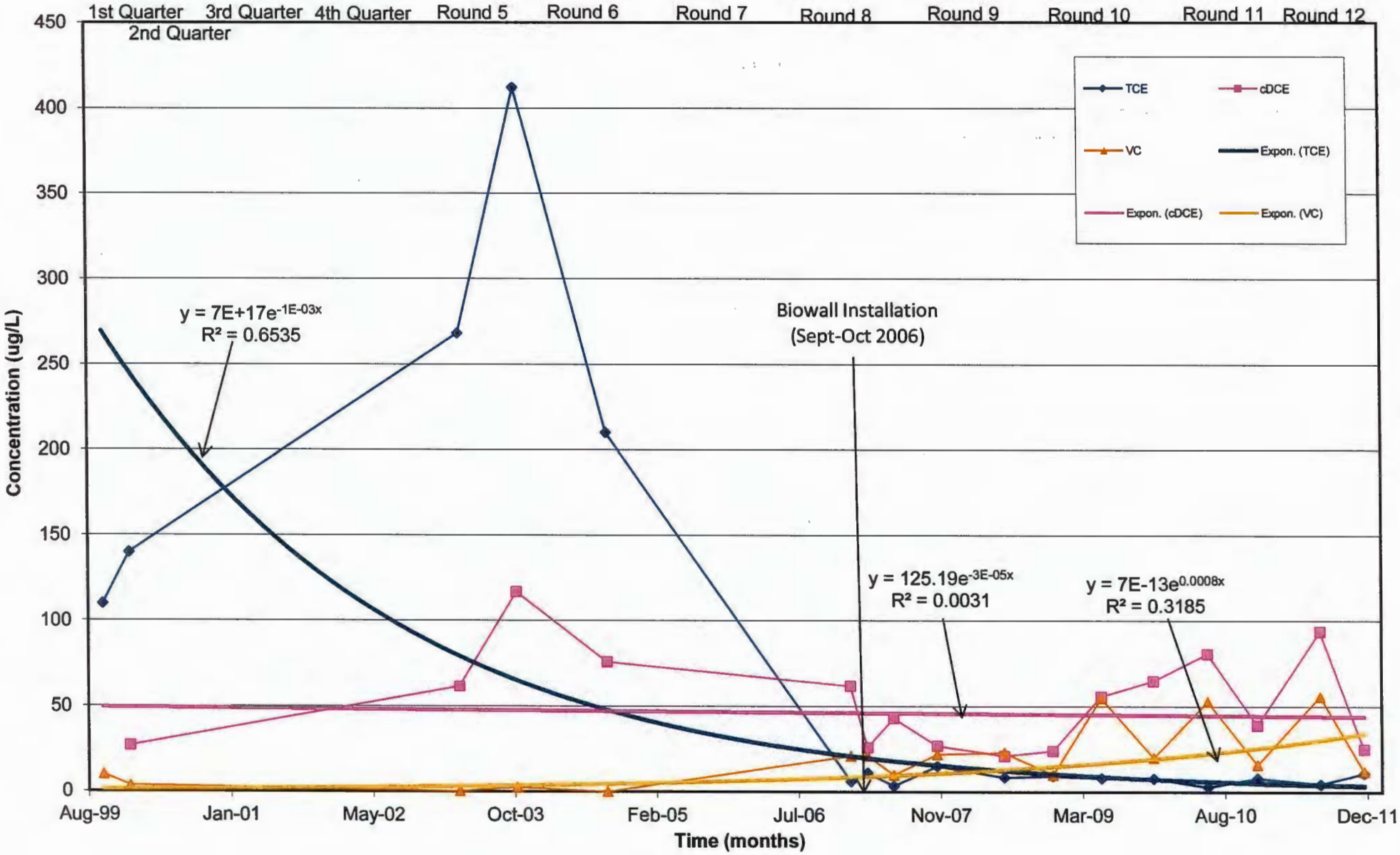

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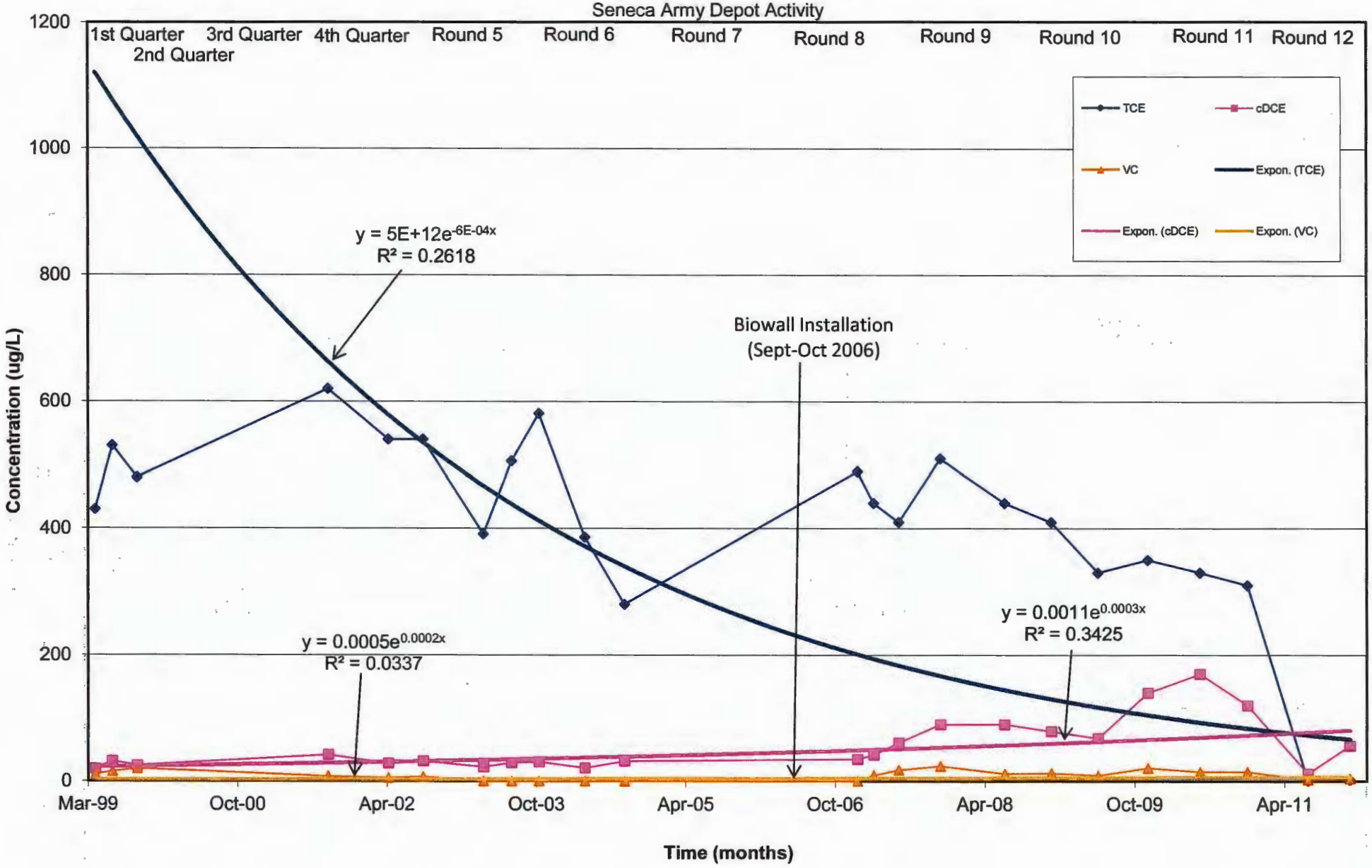
Fig -13
Regression Plot of Well Concentrations At MWT-7
Ash Landfill Annual Report, Year 5
Seneca Army Depot Activity



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